NATIONAL MARINE FISHERIES SERVICE REPORT

National Marine Fisheries Service (NMFS) Southwest Region and Science Center will briefly report on recent developments relevant to highly migratory species fisheries and issues of interest to the Council.

Council Task:

Discussion.

Reference Materials:

1. Agenda Item J.1.a, NMFS SWR Report.
2. Agenda Item J.1.b, NMFS SWFSC Report on Albacore Fishing Effort.
3. Agenda Item J.1.d, Letter from John Gibbs.

Agenda Order:

a. Southwest Region Activity Report	Mark Helvey
b. Southwest Science Center Report	Gary Sakagawa
c. Reports and Comments of Advisory Bodies	
d. Public Comment	
e. Council Discussion	

PFMC
03/19/07

NMFS SWR Activity Report

I. Regulatory Activities

HMS Permit Renewals: A final rule was published on March 12 that revises the method for renewing and replacing permits issued under the HMS FMP. The final rule modifies the renewal process by substituting the last day of the month corresponding to the last digit of the vessel's identification number with the last day of the vessel owner's birth month as the expiration date. The rule also requires that vessel owners requiring a duplicate permit to submit a completed application form to NMFS.

Vessel List for Albacore Fishing in Canadian Waters: NMFS published a proposed rule on February 7 that proposes to develop a new vessel list at the beginning of each calendar year of U.S. vessels eligible to fish for albacore tuna in Canadian waters. The vessel list would revert to zero vessels on December 31 of each year. This proposed regulation would clarify that the vessel list will remain valid for a single calendar year.

Loggerhead Closed Areas: The final rule and supporting documentation for the loggerhead sea turtle closed area correction for the DGN fishery is undergoing review at NOAA Fisheries. The estimated Federal Register publication date is end of March with estimated effective date end of April.

2007 Purse Seine and Longline Restrictions: A proposed rule to implement management measures to reduce overfishing of the eastern tropical Pacific Ocean tuna stocks based on the 2007 tuna conservation resolution by the Inter-American Tropical Tuna Commission (IATTC) and approved by the Department of State (DOS) under the Tuna Conventions Act was published on February 26. Conservation measures include closing the purse seine fishery in the Convention Area for six weeks beginning either August 1, 2007 or November 20, 2007, through December 31, 2007. This proposed rule would also close the U.S. longline fishery in the Convention Area in 2007 once the catch of bigeye tuna once the harvest reaches 500 metric tons.

Vessel Marking: The proposed rule and supporting documentation to amend the HMS FMP vessel marking regulations is undergoing review at NOAA Fisheries in Silver Spring. The estimated Federal Register publication date is the end of March with estimated effective date end of mid-May.

Tuna Bag Limits: The proposed rule and supporting documentation to establish Federal daily bag limits for albacore and bluefin tuna is undergoing review at NOAA Fisheries in Silver Spring. The estimated Federal Register publication date is mid April with estimated effective date end of late May.

HMS FMP Amendment 1: The notice of availability of Amendment 1 was published in the Federal Register on March 9. NMFS presents its determination that Amendment 1 is consistent

with section 406 of the Magnuson-Stevens Reauthorization Act (MSRA, Public Law 109–479), which added section 304(i) to the Magnuson-Stevens Act. This section requires the Secretary to, among other things, in cooperation with the Secretary of State, immediately take appropriate action at the international level to end overfishing for fisheries that NMFS has determined: (a) to be overfished or approaching a condition of being overfished due to excessive international fishing pressure, and (b) for which there are no management measures to end overfishing under an international agreement to which the United States is a party. NMFS interprets ‘‘no management measures’’ to mean the absence of management measures that are adequate to stop overfishing for purposes of the Magnuson-Stevens Act and its implementing regulations. NMFS has made a determination that both of these conditions are present, and therefore subsection 304(i) governs the MSA mandate to end overfishing in the case of Pacific bigeye tuna.

II. Meeting Summaries

US-Canada Albacore Treaty, December 2006: Representatives from both countries meet in La Jolla, California on December 5, to determine the 2007 fishing season. At this meeting, it was agreed that the default provision in the Treaty, which allows each Party to continue fishing for albacore tuna in each others waters at a level no more than 75 percent of the limit applicable during the last year of the regime (i.e., 94 vessels or 375 vessels months), would be used for 2007. The United States stated that this arrangement serves as the best answer to maintain the Treaty for the near term while both countries explore options for the longer term. The Parties agreed to meet again in Victoria, Canada on April, 25-26, 2007 to complete the annual exchange of information and to discuss arrangements for the 2008 fishing season.

Ad Hoc Inter-American Tropical Tuna Commission Meeting, February 2007: The focus of this meeting explored future options for the conservation and management of bigeye and yellowfin tunas. The Secretariat (Dr. Allen) made a presentation based on preliminary 2006 yellowfin tuna catch data. Yellowfin tuna catches are in significant decline and possible reasons for this include low average size of fish caught, lower recruitment, overfishing, and decreased catchability. The Untied States put forward a proposal of conservation measures for analysis. Though many management options were discussed, the Commission concluded that in-depth discussion and proposals of resolutions should wait until after the round of stock assessments due in May, 2007. The Plenary recommended that the IATTC Scientific Staff provide the following information and analysis:

- Work to refine critical areas for juvenile bigeye tuna and juvenile yellowfin tuna and consider the conservation value of closing these areas to purse seine fishing periodically or year round
- Produce estimates of total allowable catch (TAC) limits both on a single year and a multi-year basis;[1]
- Compile the practical and administrative issues raised regarding potential use of per country catch allocations or individual fishing quotas (IFQs) for vessels;
- Update on statistics from fishing year 2006 in light of the current management Resolution;

[1] Several conservation scenarios were discussed contemplating using critical juvenile areas in concert with a TAC.

- Consider the current fishing capacity in the eastern Pacific Ocean and examine the relationship to conservation measures needed at current capacity to the conservation measures that would be necessary if the Commission implemented the Capacity Plan and reduced the purse seine fleet to the target capacity levels;
- Prepare a report of implementation of VMS requirements by Parties;
- Research fishing methods and gear that may increase escapement of small fish;
- Investigate the impact of fishing effort on adult stocks of yellowfin tuna (this is a part of the IATTC scientific standard analysis); and
- Summarize available information on the impacts from planting of Fish Aggregating Devices (FADs), describe areas were FADs should not be placed because of the fish of catching juvenile tunas, determine the increase in vulnerability of tunas since the development of the FAD fishery, and determine the number of FADs placed.

III. Upcoming Meetings

US-Canada Albacore Treaty: The parties are scheduled to meet in Victoria, Canada on April, 25-26, 2007 to complete the annual exchange of information and to discuss arrangements for the 2008 fishing season.

General Advisory Committee to the U.S. Section to the IATTC: The General Advisory Committee to the U.S. Section to the IATTC will meet next on May 30, 2007 from 9 a.m. to 5 p.m. PST (or until business is concluded) at NMFS, Southwest Regional Office. Additional information can be found at Federal Register Notice (72 FR 9516-9517) for.

IATTC: The IATTC annual series of meetings will be held in Cancun, Mexico, June 18-29, 2007. For more information check www.iattc.org. The IATTC's website includes specific agendas and documents for this series of meetings.

IV. Other

New Web Site: NMFS has established a website (*http://www.dolphinsafe.gov*) that provides information regarding U.S. dolphin-safe standards and policies as part of its Dolphin-Safe Tuna Tracking and Verification Program (TTVP). The TTVP monitors nationwide the domestic production and importation of frozen and processed tuna products and verifies associated dolphin-safe claims. The website will answer many of the questions tuna importers and processors may have in obtaining dolphin-safe certification for their product. It will also help assure the public in the authenticity of the dolphin-safe label. Eighteen west coast canners participate in the TTVP.

National Marine Fisheries Service Southwest Fisheries Science Center (SWFSC) Report on Albacore Fishing Effort

In response to resolutions of the Western and Central Pacific Fisheries Commission and Inter-American Tropical Tuna Commission that require fishing effort for North Pacific albacore not to be increased above recent levels, the Highly Migratory Species Management Team (HMSMT) and the Advisory Subpanel (HMSAS) were tasked to identify appropriate measurements of fishing effort that could be used by the U.S. to comply with the resolutions. SWFSC scientists were assigned the responsibility for assembling historical data on fishing effort for U.S. fisheries landing North Pacific albacore. The assignment was carried out and includes data for commercial and recreational fisheries and both albacore directed and non-directed fisheries. A simple model was used to standardize the different types of effort into a common measurement. The results were provided to the HMSMT and HMSAS in February. This report under Agenda Item J.3.b presents the results.

March 9, 2007 ATT. CRAIG HEBERER

To: Rod McInnis

Hello, My name is John Gibbs, I own the longline fishing vessel Pacific Horizon. My home port is San Diego, Ca. . I am very interested in the possibility of returning to the West Coast region to longline swordfish/tuna (HMS).

I applaud all of those who are involved with ~~your~~ efforts to reestablish a HMS Longline fishery off the west coast of the United States.

I would like to ask the PFMC to review the current WPFMC management measures and adjust or adopt regulations that would apply to the west coast region.

Myself and other west coast fisherman who have longline fished off the west coast and have fished under the WPFMC regulations would be willing to give an industry perspective on preferred management regulations that would best apply to the fishery.

The infrastructure of the industry has been severely damaged over the past several years, to reestablish a HMS longline fishery off the west coast would benefit many businesses.

Thank you for your time, I can be reached at (619) 224-4949.

Sincerely,

John Gibbs

HIGHLY MIGRATORY SPECIES MANAGEMENT TEAM REPORT ON HIGH SEAS SWORDFISH LONGLINE FISHERY ON THE WEST COAST

The Highly Migratory Species Management Team (HMSMT) reviewed a letter transmitted to National Marine Fisheries Service (NMFS) from Mr. John Gibbs about harmonizing the Pacific Fishery Management Council (Council) management measures with the Western Pacific Fishery Management Council measures for shallow set longline gear used to target swordfish. Mr. Gibbs is a West Coast longline fisherman with a Hawaii longline permit but would like to see the West Coast market infrastructure revitalized with deliveries of fresh product. Fishing operations would be conducted on the high seas east of 150° W longitude and west of the West Coast Exclusive Economic Zone.

Management Background

In June of 2003, the Council requested the HMSMT provide an initial review of elements needed to develop a limited entry program for the high seas longline fishery. The HMSMT met October 1-2, 2003 to review analytical approaches and discuss data requirements for a limited entry program. Their reports are archived in the June and November 2003 Council meeting minutes. However in 2004, the final rule implementing the Highly Migratory Species Fishery Management Plan prohibited shallow set longline fishing for swordfish in the West Coast Exclusive Economic Zone (3 to 200 nm offshore) and west of 150° W longitude. Additionally, NMFS published a final rule under the Endangered Species Act prohibiting shallow water sets east of 150° W longitude to protect endangered sea turtle in 2004. Thus, no work has been conducted on this activity since then 2004.

HMSMT Recommendation:

1. Provide guidance to the Team on whether or not to revisit development on a program for a high seas longline fishery.

PFMC
04/05/07

EXEMPTED FISHING PERMIT FOR LONGLINE FISHING IN THE WEST COAST EXCLUSIVE ECONOMIC ZONE

At their March 2006 meeting, the Council asked the Highly Migratory Species Management Team (HMSMT) to provide an analysis of an exempted fishing permit (EFP) application that proposes allowing a single vessel to target swordfish with shallow set longline gear in the West Coast Exclusive Economic Zone (EEZ). The purpose of the EFP fishery would be to gather preliminary information to help determine whether longline fishing could be an economically viable alternative to the current drift gillnet fishery with less environmental impact. Longline fishing is currently prohibited in the West Coast EEZ under regulations pursuant to the Fishery Management Plan for U.S. West Coast Fisheries for Highly Migratory Species (HMS FMP). Targeting swordfish with shallow set longline gear is currently prohibited east of 150° W longitude under regulations pursuant to the Endangered Species Act, principally because of the risk of takes of leatherback sea turtles. The general purpose of an EFP is to allow fishing that would normally be prohibited under regulations in order to gather information and test new methods. This information gathering supports any future decision to modify management regulations related to the activity.

At their November 2006, meeting the Council adopted alternatives to be analyzed in a draft environmental assessment (EA) to support a final Council decision. This Council action represents a recommendation to National Marine Fisheries Service (NMFS); based on any additional review, the NMFS Southwest Regional Administrator is authorized to issue the permit.

NMFS and Council staff, with assistance from the HMSMT, have prepared a draft EA to support a Council final decision (Attachment 1). The draft EA contains three alternatives, one of which is no action (i.e., recommending not to issue the permit). Under either action alternative the amount of fishing (number of trips and sets) conducted under the EFP is limited. Alternative 3 also contains catch or take limits (caps) for selected finfish and protected species. If any cap is reached the EFP would end for the remainder of the fishing year. Specific caps are not presented in the EA. Rather, information is provided in order for the Council to determine which species should be capped, and the cap level, if they choose to adopt this mitigation measure. Any such caps would be analyzed as part of the preferred alternative in a final EA, which would support the final decision by the Southwest Regional Administrator as to issuing the permit.

Council Task:

Take final action on a recommendation for issuance of an EFP for shallow set longline fishing in the West Coast EEZ by choosing a preferred alternative.

Reference Materials:

1. Agenda Item J.2.a, Attachment 1: Issuance of an Exempted Fishing Permit to Fish with Longline Gear in the West Coast EEZ, Draft Environmental Assessment.
2. Agenda Item J.2.d, Public Comment.

Agenda Order:

a. Agenda Item Overview — Kit Dahl
b. NMFS Report — Jana Swimmer
c. Reports and Comments of Advisory Bodies
d. Public Comment
e. **Council Action:** Adopt a preferred alternative for the longline EFP

PFMC
03/19/07

Agenda Item J.2.a
Attachment 1
April 2007

ISSUANCE OF AN EXEMPTED FISHING PERMIT TO FISH WITH LONGLINE GEAR IN THE WEST COAST EEZ

DRAFT ENVIRONMENTAL ASSESSMENT

PREPARED BY:
DEPARTMENT OF COMMERCE
NATIONAL MARINE FISHERIES SERVICE
SOUTHWEST REGION
AND
SOUTHWEST FISHERIES SCIENCE CENTER

AND THE:
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DRAFT

MARCH 2007

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Cover Sheet
Drift Gillnet Fishery Exempted Fishing Permit / Regulatory Amendment

Proposed Action:	Issue an exempted fishing permit (EFP) to allow one vessel to longline fish in the Economic Exclusive Zone (EEZ) off of Washington, Oregon, and California, which is currently prohibited, during the 2007 fishing year (April 1 2007-March 31 2008, although fishing would not begin before mid-September 2007). Under terms and conditions of the EFP, the vessel would target swordfish, which is also currently prohibited pursuant to the HMS FMP and Endangered Species Act (ESA) regulations.
Type of Statement:	Environmental Assessment (EA)
For Further Information:	
National Marine Fisheries Service, Southwest Region:	Craig Heberer (Craig.Heberer@noaa.gov) Fishery Biologist, Chairman, HMS Management Team Elizabeth Petras (Elizabeth.Petras@noaa.gov) Council Liaison for Protected Resources NMFS F/SWR2 501 Ocean Blvd. Long Beach, CA 90802 Telephone: (562) 980-4000
Pacific Fishery Management Council:	Dr. Kit Dahl Staff Officer–Highly Migratory Species Telephone: (503) 820-2280 Kit.Dahl@noaa.gov

Abstract

This EA evaluates three alternatives upon which the Pacific Fishery Management Council will base their recommendation to NMFS on issuance of an EFP to allow a single vessel to use longline gear to target swordfish in the West Coast EEZ. The Council will take final action at their April 1–6, 2007, meeting to choose a preferred alternative, based on the three alternatives presented here. This will represent their recommendation to NMFS. The alternative of no action is included; if the Council chooses this alternative, they recommend not issuing the permit, in which case the experimental fishery would not occur. Under the two action alternatives the permit would be issued, subject to various terms and conditions. These include mitigation measures to reduce adverse impacts to finfish, marine mammals, sea turtles and seabirds. Alternative 2 includes limits on the total amount of fishing that would be allowed under the EFP (number of trips and sets). Alternative 3 includes all of the terms and conditions identified under alternative 2 and would impose additional mitigation measures. The principal difference between the two action alternatives is that under the third alternative the Council would identify incidental catch/take caps for selected finfish and protected species. If any of these caps were reached the fishery would immediately cease.

The purpose of the proposed action is to conduct preliminary test fishing by one vessel to gather information on the economic viability and environmental effects, including the potential protected species and non-target finfish interactions, of fishing in the West Coast EEZ targeting swordfish in a data poor fishery. The amount of fishing would be constrained by EFP-imposed trip and set limits and a variety of mitigation measures would be required to minimize adverse environmental impacts from the activity. Longline fishing may be an economically viable alternative for participants in the drift gillnet fishery that would also have less environmental impact in terms of bycatch of protected species. According to regulations, a NMFS Regional Administrator may authorize, "for limited testing, public display, data collection, exploratory, health and safety, environmental cleanup, and/or hazard removal purposes, the target or incidental harvest of species managed under an FMP or fishery regulations that would otherwise be prohibited" (50 CFR 600.745(b)). This requires issuance of an EFP, which is the proposed action analyzed in this EA.

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List of Acronyms

AMSY- Average Maximum Sustainable Yield
AVHRR- Advanced Very High Resolution Radiometer
BFAL- Black-Footed Albatross
BO- Biological Opinion
CCS- California Current System
CDFG- California Department of Fish and Game
CFR- Code of Federal Regulations
CITES- Convention on International Trade in Endangered Species
CPFV- Commercial Party Fishing Vessels
CPUE- Catch Per Unit of Effort
DGN- Drift Gillnet
DPN- Distinct Population Segments
DSLL- Deep-set Longline
EA- Environmental Assessment
EEZ- Exclusive Economic Zone
EFH- Essential Fish Habitat
EFP- Exempted Fishing Permit
EIS- Environmental Impact Statement

ENP-Eastern North Pacific
ESA- Endangered Species Act
ESU-Evolutionary Significant Units
FEIS- Final Environmental Impact Statement
FONSI- Finding of No Significant Impact
FMP- Fishery Management Plan
FR-Federal Register
GAM- Generalized Adaptive Model
HMS- Highly Migratory Species
HMS FMP- Highly Migratory Species Fishery Management Plan
HMSAS- Highly Migratory Species Advisory Subpanel
HMSMT- Highly Migratory Species Management Team
IATTC- Inter-American Tropical Tuna Commission
ISC- International Scientific Committee
ITS- Incidental Take Statement
IUCN- World Conservation Union
IUU- Illegal Unreported and Unregulated
IWC- International Whaling Commission
LAAL- Laysan Albatross
LOF- List of Fisheries
MCSST- Miami Multi-Channel Sea Surface Temperature
MMPA- Marine Mammal Protection Act
MSA- Magnuson Stevens Fishery Conservation and Management Act
NED- Northeast Distant
NEPA- National Environmental Policy Act
NMFS- National Marine Fisheries Service
NOAA- National Oceanic and Atmospheric Administration
OY- Optimum Yield
PacFIN- Pacific Fisheries Information Network
PBR- Potential Biological Removal
PDO- Pacific Decadal Oscillation
Pelagics FMP- Pelagics Fishery Management Plan
PFMC- Pacific Fishery Management Council
PIFSC- Pacific Islands Fisheries Science Center
POCTRP- Pacific Offshore Cetacean Take Reduction Plan
PRD- Protected Resources Division
RFMO-Regional Fisheries Management Organization
RecFIN- Recreational Fisheries Information Network
SAFE- Stock Assessment and Fishery Evaluation Report
SAFZ- Subarctic Frontal Zone
SAR- Stock Assessment Report
SCB-Southern California Bight
SSLL-Shallow-set Longline
STAL- Short-Tailed Albatross
STFZ- Subtropical Frontal Zone
TDR- Time and Depth Recorder
TRP- Take Reduction Plan
TRT- Take Reduction Team
USFWS- United States Fish and Wildlife Service
WPFMC- West Pacific Fishery Management Council
ZRMG- Zero Mortality Rate Goal

Glossary

Biological Opinion: the written documentation of a section 7 consultation.

Incidental take: "take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, or collect individuals from a species listed on the ESA. Incidental take is the non-deliberate take of ESA listed species during the course of a federal action (e.g., fishing under an FMP).

Incidental Take Statement: a requirement under the ESA section 7 consultation regulations, it is the amount of incidental take anticipated under a proposed action and analyzed in a biological opinion.

Jeopardy: the conclusion of a section 7 consultation if it is determined that the proposed action would reasonably be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the numbers, reproduction, or distribution of that species.

Mortality or serious injury: a standard used for measuring impacts on marine mammals under the MMPA. Serious injury is defined as an injury likely to result in the mortality of a marine mammal.

Mean annual takes: the estimated number of marine mammals seriously injured or killed each year due to fishery interactions.

Potential Biological Removal: a requirement of the MMPA, it is the estimated number of individuals that can be removed from a marine mammal stock while allowing the stock to maintain or increase its population.

Section 7 consultation: a requirement of all discretionary federal actions to ensure that the proposed action is not likely to jeopardize ESA listed endangered or threatened species. Refers to section 7(a)(2) of the ESA.

1.0 INTRODUCTION

1.1 Organization of the Document

This document provides background information about, and analysis of, a proposal for an exempted fishing permit (EFP) to allow a single longline fishing vessel to conduct an experimental fishery targeting swordfish (*Xiphias gladius*) in the EEZ off Washington, Oregon, and California, which is currently prohibited. Management of the proposed longline fishery would be covered by the *Fishery Management Plan for U.S. West Coast Fisheries for Highly Migratory Species* (HMS FMP), which was developed by the Pacific Fishery Management Council (hereafter, the Council) in collaboration with the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS). The HMS FMP was implemented in 2004 and allows for more comprehensive federal management of FMP fisheries, supported by decision-making through the Council process. The action must conform to the Magnuson-Stevens Fishery Conservation and Management Act (MSA), the principal legal basis for fishery management within the EEZ, which extends from the outer boundary of state waters at three nautical miles (nmi) to a distance of 200 nmi from shore. In addition to addressing MSA mandates, this document is an environmental assessment (EA), pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended. The purpose of an EA is to disclose and evaluate the effects of the proposed action on the human environment, considered by means of a range of alternatives, and "Briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact" (40 CFR 1508.9). (Section 1.6 provides an initial screening of potentially significant effects to determine the scope of the analysis.) This document contains the analyses required under NEPA and the Regulatory Flexibility Act (RFA). The evaluation of adverse impacts to species listed under the Endangered Species Act (ESA) is consistent with evaluation of the action required by section 7 of the ESA, which requires consultation with NMFS's Protected Resources Division (PRD) to determine whether the proposed action may jeopardize the continued existence of any listed species.

Environmental impact analyses have four essential components: a description of the purpose and need for the proposed action, a set of alternatives that represent different ways of accomplishing the proposed action, a description of the human environment affected by the proposed action, and an evaluation of the expected direct, indirect, and cumulative impacts of the alternatives. (The human environment includes the natural and physical environment, and the relationship of people with that environment, 40 CFR 1508.14.) These elements allow the decision maker to look at different approaches to accomplishing a stated goal and understand the likely consequences of each choice or alternative. Based on this structure, the document is organized in six main chapters:

- The rest of Chapter one describes the purpose and need for the proposed action and considerations that went into the development of this EA.

- Chapter two outlines different alternatives that have been considered to address the purpose and need. The Council will choose a preferred alternative from among these alternatives, which will constitute a recommendation to NMFS; based on the recommendation NMFS makes a final determination whether to issue the EFP.

- Chapter three describes the components of the human environment potentially affected by the proposed action (the "affected environment"). The affected environment may be considered the baseline condition, which would be potentially changed by the proposed action.

- Chapter four evaluates the effects to the alternatives on components of the human environment in order to provide the information necessary to determine whether such effects are significant, or potentially significant.

- Chapter five details how this action meets 10 National Standards set forth in the MSA (‘301(a)).

- Chapter six provides information on those laws and Executive Orders, in addition to the MSA and NEPA, that an action must be consistent with, and how this action has satisfied those mandates.

Additional chapters (7–9) list those who contributed to this EA, information on EA distribution, and the bibliography.

1.2 The Proposed Action

The proposed action is to issue an exempted fishing permit (EFP) to allow one vessel to longline fish in the EEZ off of Washington, Oregon, and California, which is currently prohibited, during the 2007 fishing year (April 1 2007-March 31 2008, although fishing would not begin before mid-September 2007). Under terms and conditions of the EFP, the vessel would target swordfish, which is also currently prohibited pursuant to the HMS FMP. To target swordfish, longline gear is set at a shallower depth (<100 m) than for tunas. For this reason it is termed “shallow set” as opposed to “deep set” when targeting tunas, where the gear is set in the deeper thermocline zone (~300–400 m). Fishing with longline gear is currently prohibited in the West Coast EEZ under the HMS FMP and Federal regulation at 550 CFR 660.712(a). Furthermore, the FMP prohibits targeting swordfish with longline gear (shallow setting) west of 150° W. longitude (see 50 CFR 660.712(b)). Regulations under the Endangered Species Act (ESA) (50 CFR 223.206(d)(9)) prohibit targeting swordfish with longline gear on the high seas east of 150° W. longitude in order to prevent jeopardy to the continued existence of endangered sea turtles.

The applicant has stated that during a trip where test fishing under the EFP using the shallow set gear configuration occurs, he may also decide to transit outside the EEZ to use the deep set gear configuration to target tunas. Although conducted during the same trip, any such activity would not be part of the EFP (because deep setting outside the EEZ is currently permitted) and is not considered part of the proposed action evaluated in this EA. However, as a result, gear used to deep set may be stored aboard the vessel during a trip where shallow set fishing as part of the EFP occurs. The gear would remain stowed until the vessel exits the EEZ and is in waters where deep setting is permitted. Both fishing under the EFP and any non-EFP fishing outside the EEZ would be subject to 100 percent observer coverage.

The EEZ off the coasts of Washington, Oregon, and California establishes the geographic context for the proposed action, although the applicant has stated that a majority of the proposed fishing activity under the EFP would most likely take place within the EEZ waters adjacent to California (Section 3.3 discusses those oceanographic factors that may influence the timing and location of fishing).

1.3 Purpose of and Need for the Proposed Action

The purpose of the proposed action is to conduct preliminary test fishing by one vessel to gather information on the economic viability and environmental effects, including the potential protected species and non-target finfish interactions, of fishing in the West Coast EEZ targeting swordfish in a data poor fishery. The amount of fishing would be regulated by EFP-imposed trip and set limits and a variety of mitigation measures would be required to minimize adverse environmental impacts from the activity. Longline fishing may be an economically viable alternative for participants in the drift gillnet fishery that would also have less environmental impact in terms of bycatch of protected species, because longline gear is more selective than drift gillnet gear. According to regulations, a NMFS Regional Administrator may

authorize, "for limited testing, public display, data collection, exploratory, health and safety, environmental cleanup, and/or hazard removal purposes, the target or incidental harvest of species managed under an FMP or fishery regulations that would otherwise be prohibited" (50 CFR 600.745(b)). This requires issuance of an EFP, which is the proposed action analyzed in this EA.

The proposed action is needed because longline fishing in the EEZ is currently prohibited as is targeting swordfish. The EFP would allow preliminary test fishing to gauge impacts and determine whether this type of fishing is an economically viable substitute to fishing with drift gillnet gear and can be prosecuted without excessive protected species and bycatch interactions.

1.4 Background

Under California law, longline gear is not legally authorized within the EEZ; therefore, landing longline-caught fish from the EEZ off California is prohibited. With implementation of the HMS FMP in 2004, a prohibition on longline fishing for the entire West Coast EEZ was created in Federal regulations. In 1991, there were three longline vessels that fished beyond the EEZ targeting swordfish and bigeye tuna and unloaded their catch and re-provisioned in California ports. In 1993, a Gulf Coast fish processor set up at Ventura Harbor, California, to provide longline vessels with ice, gear, bait, and fuel, and fish offloading and transportation services (Vojkovich and Barsky 1998). Consequently, longline vessels seeking an alternative to the Gulf of Mexico longline fishery, and precluded from entering the Hawaii fishery due to lack of permits, began arriving in Southern California. By 1994, 31 vessels comprised this California-based fishery, fishing beyond the EEZ, and landing swordfish and tunas into California ports. These vessels fished alongside Hawaiian vessels in the area around 135° W. longitude in the months from September through January. Historically, vessels from Hawaii had the option of returning to Hawaii to land their catch or landing their catch on the West Coast.

The Western Pacific Fishery Management Council (WPFMC) developed and implemented the Fishery Management Plan for Pelagic Fisheries of the Western Pacific Region (Pelagics FMP) in 1987. In response to the rapid influx of east coast longliners in the late 1980s, Amendment 4 to the Pelagics FMP extended previous emergency interim rules (56 FR 14866; 56 FR 28116) that were implemented to arrest the rapid growth of the longline fishery. This 1991 amendment established a moratorium on new participants from entering the Hawaiian longline fishery. In 1994, Amendment 7 to this FMP replaced the moratorium with a limited entry program for the Hawaiian longline fishery (59 FR 26979), limiting the fishery to 167 vessels.

By 1995, only six longline vessels made a high seas trip from a California port, although 35 vessels made at least one longline landing containing HMS (Vojkovich and Barsky 1998, Table 1–1). The group of vessels that came to California from the Gulf of Mexico in 1993 and 1994 left the California-based fishery. This group of vessels either returned to the Gulf of Mexico fishery, or acquired Hawaiian longline permits in order to have fishery options for the months of February through September, when fishing within range of California ports drops off substantially. Many of the vessels that had participated in the California fishery had discovered productive swordfish fishing grounds in the fall and winter that were further east than the Hawaiian fleet usually operated. As the California fleet migrated to Hawaii, these vessels continued to move east later in the year, and operated out of California ports when these ports became closer than Hawaiian ports. These vessels fished from California until about January, when the pattern of fishing moved to the west, and operating from Hawaii became more convenient. Consequently, beginning in the latter part of 1995, a number of vessels from the Hawaiian fleet began a pattern of fishing operations that moved to California in the fall and winter and then back to Hawaii in the spring and summer.

In August 2000, as the result of the case *Center for Marine Conservation vs. NMFS*, a federal district court issued an order directing NMFS to complete an Environmental Impact Statement (EIS) to assess the environmental impacts of fishing activities conducted under the Pelagics FMP by April 1, 2001, and ordered restrictions and closures over millions of square miles of the Hawaiian longline fishery's usual fishing grounds. These court-ordered closures effectively eliminated the Hawaii swordfish fishery. As a result, some Hawaiian longline permit holders de-registered their vessels from the permit, and proceeded to fish from California ports, as was their custom during this time of year.

NMFS completed the EIS in March, 2001, and, consistent with a Biological Opinion (BO) that was issued at the same time, NMFS implemented measures for the protection of endangered and threatened sea turtles. Such measures included a prohibition against targeting swordfish north of the equator by Hawaiian longline vessels, and prohibited longline fishing by Hawaiian longline vessels in waters south of the Hawaiian Islands from 15° N. latitude to the equator, and from 145° W. longitude to 180° longitude during the months of April and May. This decision was challenged in a lawsuit filed by the Hawaiian Longline Association. The Court vacated the existing regulations as of April 1, 2004, with the expectation that a new regulatory regime would be implemented by that date. As a result, the WPFMC developed Regulatory Amendment 3, which was subject to a section 7 consultation and accompanying BO. The amendment requires vessels fishing under the WPFMC's Pelagics FMP and targeting swordfish to use mackerel-type bait and 18/0 size circle hooks, among other bycatch reduction mitigation measures. (This type of hook and bait has been demonstrated to reduce incidental take of sea turtles.) The amendment also set an effort limit of 2,120 sets per year and hard caps on takes of loggerhead and leatherback sea turtles, which if reached, would close the fishery for the year. The regulations became effective April 2, 2004 (69 FR 17329) and substantially increased opportunity in the fishery. At almost the same time, April 7, 2004, (69 FR 18444) the final rule for implementing the HMS FMP was implemented (effective date, May 7, 2004), which included the regulations described above, effectively closing the West Coast high seas longline fishery for swordfish. As seen in Table 1–1, the number of high seas longline vessels making HMS landings on the West Coast increased substantially in the years 1997–2004. Some of these increases were likely due to the regulatory changes discussed here.

This history of West Coast longline landings of fish caught outside the EEZ reflects this history of participation. Swordfish landings were generally a negligible share of all West Coast pelagic longline landings of HMS species up until 1991, from which time they steadily increased to a peak in 2000 of 1,885 metric tons (mt) , which represented 90% of overall West Coast HMS pelagic longline landings of 2,084 mt (see Table 1–2). Swordfish landings have declined since that time with significant reductions in 2004 and 2005 (The few vessels fishing with longline gear cannot have their 2005 landings reported since Federal regulations prohibit reporting fishery statistics for three or fewer vessels due to confidentiality reasons). Currently, the EFP applicant is the only active longline participant on the West Coast targeting tuna outside the EEZ. Vessels permitted under the WPFMC's FMP and operating under their management regime may land swordfish on the West Coast.

Imports comprise the majority of annual U.S. demand for swordfish. (Demand is the sum a year's domestic catches and imports.) Imports increased markedly beginning in 1997 with total demand peaking in 1998 with imports accounting for 70 percent (Table 3–16). Pacific landings (West Coast and Hawaii) have generally accounted for between half and three-quarters of U.S. catch, or 10 to 47 percent of annual demand (which includes imports) (Table 3–17).

Other marketable species in the longline catch include opah (*Lampris regius*), mahi mahi (*Coryphaena hippurus*), and escolar (*Lepidocybium flavobrunneum*). Relatively few sharks, in proportion to those caught, have been marketed from the high seas fishery. The major shark bycatch is blue shark, which is discarded for economic reasons because the flesh quickly deteriorates after death. Other incidental catch of concern includes striped marlin, turtles, seabirds, and marine mammals.

Longline fishing gear consists of a main line strung horizontally across up to 100 km of ocean, supported at regular intervals by vertical float lines connected to surface floats. Descending from the main line are branch lines, each ending in a single, baited hook. The main line droops in a curve from one float line to the next and usually bears some 2–25 branch lines between floats. Fishing depth is determined by the length of the floatlines and branchlines, and the amount of sag in the main line between floats (Boggs and Ito 1993). The depth of hooks affects their efficiency at catching different species (Hanamoto 1976, 1987; Suzuki *et al.* 1977; Boggs 1992). When targeting swordfish, vessels typically deploy 24 to 72 km of 600 to 1,200 pound test monofilament mainline per set. Mainlines are rigged with 22 m branch lines at approximately 61 m intervals and buoyed every 1.6 km. Between 800 and 1,300 hooks are deployed per set. Large squid (*Illex spp*.) are a primary bait species with various colored light sticks used to attract the target species to the bait. The mainline is deployed from 4 to 7 hours and left to drift (unattached) for 7 to 10 hours with radio beacons attached to facilitate gear recovery. Retrieval typically requires 7 to 10 hours depending on length of mainline and number of hooks deployed. Fishing occurs primarily during the night when more swordfish are available in surface waters. Generally, longline gear targeting tuna is set in the morning at depths below 100 m, and hauled in the evening. Longline gear targeting swordfish is set at sunset at depths less than 100 m, and hauled at sunrise. A typical longliner carries a crew of six, including the captain, although some of the smaller vessels operate with a four-man crew. Fishing trips last around three weeks. Most vessels do not have built-in refrigeration equipment, limiting their trip length. The fish are iced and sold as "fresh." As discussed in chapter two, a variety of conditions would be attached to fishing under the EFP in order to minimize take of protected species. As a result, fishing methods would differ somewhat from what is described here (e.g. use of mackerel-type bait).

Longline-caught fish are sold to wholesale fish dealers. Local California fisheries, distant offshore fisheries, and imports from Hawaii, Chile, and Taiwan all influence the ex-vessel price paid to local longliners for swordfish. Swordfish are often graded by size and quality and the price adjusted accordingly.

Between 1989 and 2005, the U.S. annual demand for swordfish (i.e., U.S. landings plus imports) ranged from 10,948 metric tons (mt) to 23,114 mt, averaging 16,556 mt. During this period, U.S. landings averaged 6,444 mt (about 39 percent of demand) and imports averaged 10,111 mt (61 percent). Landings of swordfish in the United States has shown a general pattern of decline from the early 1990s through the early 2000s, with landings in 2005 of 3,039 mt at only 28 percent of the record landings of 10,851 recorded in 1993. In contrast, the share of U.S. swordfish demand supplied by imports increased from 35 percent in 1993 to 77 percent of the total in 2005. In 2005, U.S. imports of swordfish were 10,187 mt, valued at about $77 million. Singapore, Panama, Canada, and Chile were the dominant suppliers of imports. Over the entire period from 1989 through 2005, imports increased from rough parity with U.S. landings have grown to over three times domestic landings in recent years.

1.5 Council Decision-making and the Scoping Process

Scoping is "an early and open process for determining the scope of issues to be addressed and for identifying significant issues related to a proposed action" (40 CFR 1501.7). The scoping process described in National Environmental Policy Act (NEPA) regulations emphasizes public involvement, prioritization of issues so that the impact analysis may focus on potentially significant impacts, and planning the impact analysis. The Council, as much as it is an organization, is a process for coordinating involvement of the public and interested State and Federal agencies in decision making related to Federal fishery management. As such, it serves as an effective scoping mechanism. All Council meetings, and meetings of its various committees, are open to the public and opportunity for oral and written comment on issues brought before these bodies is provided.

An application to grant the EFP was originally submitted to the Council in November 2005 by Mr. Pete Dupuy, who currently fishes with longline gear outside the EEZ and has also participated in the Drift Gillnet Fishery (DGN). At their March 2006 meeting, the Council gave preliminary approval for further consideration of the application. At a November 2–3, 2006, joint meeting of the Council's HMS Management Team (HMSMT), composed of State and Federal fishery managers, and its HMS Advisory Subpanel (HMSAS), with representation from different fishery sectors and user groups, a range of alternatives for terms and conditions attached to the EFP was discussed and refined. These alternatives were adopted by the Council at their November 12–17, 2006 meeting. The Council is scheduled to choose a preferred alternative at their April 1–6, 2007 meeting in Seattle, Washington, based in part on information contained in this EA.

1.6 Determining the Scope of the Analysis

Staff began work on this EA by assessing the alternatives in order to identify likely environmental impacts and narrow the scope of the present analysis to the significant issues to be analyzed in depth and to eliminate from detailed study the issues which are not significant (40 CFR 1501.7). They used 16 factors enumerated in NOAA NEPA guidance (NAO 216-6) §6.01, which reproduces the factors defining "significant" listed at 40 CFR 1508.27, and §6.02, specific guidance on fishery management actions, in order to screen for potentially significant impacts and determine the scope of the analysis. The §6.02 criteria are listed first below and generally focus on components of the human environment potentially affected by a fishery management action. The §6.01 criteria are related to the intensity—or severity—of the impact, which were considered in the context of the environmental components listed in §6.02.

These factors can be used to determine whether a finding of no significant impact can be made or whether it is necessary to prepare an EIS to evaluate significant impacts in more detail. This EA provides the information and analysis on which to determine the appropriateness of a Finding of No Significant Impact (FONSI). For each factor listed below a brief discussion follows, indicating in general terms the types of effects that may be reasonably expected, and an assessment of whether the potential effects are of sufficient magnitude or concern to justify analysis in this EA.

1-2) Can the proposed action be reasonably expected to jeopardize the sustainability of any target or non-target species that may be affected by the action?

Fishing mortality by the single vessel that would be authorized to fish in 2007 represents a very minor proportion of total fishing mortality on target and non-target finfish species. Swordfish catches by all vessels in the Eastern Pacific Ocean (EPO) are in the range of 11,000–20,000 mt annually (PFMC 2006, Inter-American Tropical Tuna Commission (IATTC 2006) while, according to the EFP application, catches under this EFP would be 7–18 mt (15,000–40,000 lbs).[1] Bycatch of non-target species (which is likely to be principally blue sharks) would also constitute a minor component of the larger Pacific-wide catches. If the EFP is conducted it could form the basis for future fisheries, which would occur under controlled conditions of additional EFPs until there is enough information to determine whether a regulatory change is justified. Any future fishing activities of this nature would be subject to additional rigorous environmental review to evaluate potential effects. Therefore, it is reasonable to conclude that granting the EFP for 2007 would not have significant effects on target or non-target stocks. In order to inform the public and decision makers on the likely effects of the EFP on finfish this EA includes an evaluation of such effects.

[1] However, distinct stocks are recognized south and north of the equator in the EPO. Catches north of the equator account for somewhat less than half of the EPO total.

3) Can the proposed action be reasonably expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat (EFH) as defined under the Magnuson-Stevens Act (MSA) and identified in FMPs?

Longlines are pelagic fishing gear, deployed in open water between the surface and bottom of the ocean. Given the biophysical characteristics of the water column, the gear does not affect the biophysical habitat. For this reason, there is no likelihood that the proposed action would cause substantial damage to habitats or EFH and this EA does not further evaluate this category of impacts.

4) Can the proposed action be reasonably expected to have a substantial adverse impact on public health or safety?

The vessel that would participate in the EFP currently uses longline gear outside the EEZ to target tuna. Therefore, operation of the vessel inside the EEZ would not represent any increase in hazards. There are no public health implications involved since any retained fish would be handled and processed in a customary manner. Since substantial adverse impacts on public health or safety are not expected, they are not further evaluated in this EA.

5) Can the proposed action be reasonably expected to adversely affect endangered or threatened species, marine mammals, or critical habitat of these species?

Longline gear is known to incidentally catch and entangle threatened and endangered marine mammals, sea turtles and seabirds. Authorization of the EFP would increase the risk of a take of one of these species. This EA evaluates impacts to ESA-listed species and their designated critical habitat, and marine mammals, which are protected under the MMPA.

6) Can the proposed action be expected to have a substantial impact on biodiversity and ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.)?

The proposed action would primarily affect biodiversity and ecosystem function through the removal of target, non-target, and protected species. Fish removals under the proposed action would represent a very minor proportion of the biomass of these species and would have a remote likelihood of adversely affecting biodiversity and ecosystem function. Potential removals of protected species are considered under item five.

7) Are significant social or economic impacts interrelated with significant natural or physical environmental effects?

The proposed action would likely have a long-term beneficial socioeconomic impact, if it demonstrates that longline fishing conducted under restricted conditions to mitigate adverse impacts to protected species is an economically viable activity. In the short term, prosecution of the EFP could generate revenue for the applicant, some of which would have community income impacts in terms of purchase of fuel, supplies and other inputs.

8) To what degree are the effects on the quality of the human environment likely to be highly controversial?

The proposed action is very controversial in the public arena. The Council and NMFS have received written and oral public testimony opposing the proposed action. Public opposition stems from the perception that longline gear is indiscriminate and will substantially contribute to increased mortality of protected species, especially endangered leatherback sea turtles. Some commenters argue that mitigation

measures, such as the use of circle hooks, are ineffective in reducing incidental take of sea turtles. However, there is little scientific controversy in the sense that impacts can be anticipated and scientifically proven mitigation measures can be implemented to constrain such impacts to acceptable levels defined by applicable law.

9) Can the proposed action be reasonably expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas?

This activity would occur in the marine environment and has little or no direct effect on the biophysical component of the terrestrial environment. No unique areas would be affected.

10) To what degree are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

The risks are neither unique nor unknown; shallow-set longline fishing has previously occurred in the area adjacent to the West Coast EEZ, providing information on possible catch and bycatch of finfish and take of protected species. Actual catch or take rates within the EEZ may differ from what has been experienced outside the EEZ. Therefore, the risks are to some extent uncertain in terms of their intensity, although mitigation measures (such as limits on fishing effort and caps on protected species takes) would be expected to both reduce impacts and reduce uncertainty about their intensity.

11) Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?

The EA describes past and present activities that contribute to the kinds of impacts identified for the proposed action (fishing mortality, protected species takes). Reasonably foreseeable future actions are discussed. These are considered together to arrive at the cumulative effects. Section 3.1 discusses this analytical framework.

12) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources?

The proposed action would not affect historic places or result in the loss or destruction of significant scientific, cultural, or historical resources. As noted above, the primary adverse impact of the proposed action would be the removal of target and non-target finfish species and the incidental take of protected species. To the extent these may be construed as scientific or cultural resources, the proposed action is not expected to result in a significant level of loss or destruction.

13) Can the proposed action be reasonably expected to result in the introduction or spread of a non-indigenous species?

The proposed action does not involve the transport of non-indigenous species. The fishing vessel participating in the proposed action is located in a local port and would not increase the risk of introduction through ballast water or hull fouling.

14) Is the proposed action likely to establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration?

The EFP is intended to gather information to assess the viability of longline fishing as an alternative to DGN fishing. Because longline gear is more selective than DGN gear, and bycatch survival is higher, any such substitution could reduce the adverse impacts of fishing for swordfish in the West Coast EEZ. This EA only covers an EFP for the 2007 fishing year. If determined successful, an EFP could be issued in the future with a larger number of vessels participating. The purpose of an EFP is to test methods that could eventually be allowed under regulations. Any of these future activities would be evaluated in an EA or EIS with separate decisions taken on proceeding at each step. For these reasons the action does not establish a precedent for future actions with significant effects nor does it represent a decision in principal about a future consideration.

15) Can the proposed action be reasonably expected to threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment?

Chapter six describes potentially applicable cross-cutting mandates; the proposed action would be implemented in such a way as to address applicable requirements of these laws and executive orders.

16) Can the proposed action be reasonably expected to result in beneficial impacts, not otherwise identified and described above?

The EA evaluates both beneficial and adverse impacts of the proposed action.

Table 1–1. Number of vessels with West Coast commercial HMS landings using pelagic longline gear, 1981-2005.

Year	Number of Vessels
1981	27
1982	28
1983	19
1984	14
1985	12
1986	6
1987	8
1988	14
1989	4
1990	5
1991	13
1992	20
1993	12
1994	44
1995	36
1996	29
1997	52
1998	70
1999	53
2000	70
2001	56
2002	36
2003	41
2004	40
2005	9

Source: PacFIN, extracted March 8, 2007. Additional processing info: Only fish tickets where at least 1 lb of any highly migratory species (except striped marlin) was landed for pelagic longline gears were used. Aquaculture fish ticket/fish ticket line information is excluded.

Table 1–2. Commercial landings (round mt) in the West Coast pelagic longline fishery, 1981–2005. (Source: Table 4–13 in the 2006 HMS SAFE).

		Sharks					Tunas								
Year	Sword-fish	Common Thresher	Pelagic Thresher	Bigeye Thresher	Shortfin Mako	Blue	Albacore	Other	Dorado	Ground-fish	Coastal Pelagics	Crab	Salmon	Other	Total
1981	<0.5				19	72	25	1		2	<0.5			1	120
1982	<0.5	1			6	18	42	1	<0.5	<0.5	<0.5			2	70
1983	<0.5	<0.5			1	2	6	3	<0.5	<0.5	<0.5			7	19
1984	12	3		<0.5	2		2	2	3	2	<0.5			4	30
1985	<0.5	1			<0.5	<0.5	<0.5			10				1	12
1986		2			1	<0.5				6	<0.5			4	13
1987		<0.5			3	<0.5	<0.5			43				3	49
1988	<0.5	1			152	1		<0.5		27	<0.5			5	186
1989					5	1				<0.5					5
1990		<0.5			15	4	<0.5	1		<0.5	<0.5			<0.5	20
1991	27	<0.5			23	<0.5	<0.5	2	<0.5	3				18	73
1992	63	2		<0.5	2	<0.5	1	<0.5		21	<0.5			2	91
1993	27	<0.5			1	<0.5	<0.5	5	1	1	1			2	38
1994	722	19		3	20	12	49	56	32	4	<0.5			15	932
1995	271	11		1	7	5	4	58	5	8	2			4	376
1996	346	2			5	<0.5	3	68	9	6	<0.5			5	444
1997	663	4		2	3	<0.5	6	83	1	32	<0.5			2	796
1998	418	3			4	<0.5	9	96	1	9	1			20	561
1999	1,325	5			7		66	161	17	1				4	1,586
2000	1,885	5	<0.5	<0.5	6	<0.5	22	99	41	12		3		11	2,084
2001	1,749	20		1	7	2	22	73	15	7	<0.5			53	1,949
2002	1,320	2			3	41	1	12	<0.5	12	<0.5			2	1,393
2003	1,810	<0.5			3		2	29	1	4				4	1,853
2004	898	1		<0.5	2		2	31	1	13	<0.5			3	951
2005	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

*Not reported due to data confidentiality requirements.

Source: PacFIN, extracted August 3, 2006.

Additional processing info:

Only fish tickets where at least 1 lb of any highly migratory species (except striped marlin) was landed for the pelagic longline fishery were used.

Landings in lbs are converted to round weight in mt by multiplying the landed weights by the conversion factors in each fish ticket line and then dividing by 2204.6.

Aquaculture fish ticket/fish ticket line info is excluded.

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

A preferred alternative is not identified in this draft EA. The Council will identify a preferred alternative at their April 1–6, 2007, meeting in Seattle, Washington. The Council's preferred alternative represents a recommendation to NMFS on issuance of the EFP and will be evaluated in any final EA prepared in support of that decision.

2.1 Alternative 1 (No Action)

Under alternative 1 the EFP would not be granted and no longline fishing would occur in the West Coast EEZ. All current regulations applicable to longline fishing under the HMS FMP would continue to apply.

2.2 Alternative 2

Under alternative 2 the EFP would be approved with the terms and conditions proposed by the applicant. (See Appendix A for the proposal submitted by the applicant.) These terms and conditions are as follows:

1. 100 percent observer coverage, paid for by NMFS
2. A single vessel participating
3. Maximum of 14 sets per trip
4. Maximum of four trips between September and December (up to 56 total sets for the entire duration of the proposed EFP)
5. No fishing within the Southern California Bight as defined by the applicant. (See definition below.)
6. No fishing within 30 nmi of the coastline (see Figure 2–2)
7. Utilizing shallow-set longline gear configuration:
    a. 50–100 km mainline
    b. 18 m floatline
    c. 24 m branchlines
    d. 2–8 hooks between floats
    e. 400–1,200 hooks per set
    f. Set fishing gear so hooks are at a depth of 40–45 meters below the surface
8. Use 18/0 circle hooks with a 10° offset to fish for swordfish (as described at 50 CFR 665.33(f)).
9. Use mackerel or mackerel-type bait (as described at 50 CFR 665.33(g)).
10. Allow the use of light sticks.

2.2.1 Rationale for Terms and Conditions

Under these terms and conditions the EFP would pertain to a single vessel with effort constraints defined in terms of the number of trips and sets allowed. This would allow gathering preliminary information on whether this is an economically and environmentally viable alternative for current DGN fishery participants. With a single vessel participating, NMFS could financially and logistically deploy the necessary observers, which is further simplified by the limit on the number of trips to four. Having an observer on board would allow independent verification of total catch (including bycatch), protected species take and interactions, and area of operation. The prohibition on operating more than thirty nmi from the mainland coastline and outside of the Southern California Bight (SCB (see below)) is intended to reduce gear conflicts with other commercial and recreational fishing vessels. The prohibition could also reduce interactions with protected species to the degree they are more prevalent in coastal areas.

Under these terms and conditions the applicant would use the shallow set gear to target swordfish and would not deep set to target tunas as part of the EFP. The application states that albacore, bigeye,

yellowfin, and northern bluefin tunas may be caught in addition to swordfish. The proposed shallow-set gear configuration is typical; the longer branchlines are intended to allow any hooked or entangled sea turtles to reach the surface so they will not drown before the gear is retrieved. Light sticks serve as an attractant during night fishing. Regulations for the pelagic longline fishery managed under the WPFMC's Pelagics FMP (50 CFR 665) allow the use of light sticks for targeting swordfish (shallow setting) although they are prohibited when deep setting (targeting tunas). The limitation on the type of hooks and bait used are consistent with current Federal regulations applicable to vessels fishing under the WPFMC's Pelagics FMP. This hook and bait type has been demonstrated to reduce the likelihood of sea turtle takes. Although the EFP would exempt the applicant from the gear restrictions at 660 CFR 712(a), the other provisions of that section (b-e), covering sea turtle take mitigation measures, seabird mitigation measures, use of a vessel monitoring system if required by NMFS, and requirement for the skipper to attend a protected species workshop if so requested, would apply.

Subsequent to Council adoption of the range of alternatives several changes were made to the description of this alternative in addition to providing the definition of the SCB, below. In general, these changes clarify that the applicant may only use shallow set gear, targeting swordfish. First, the applicant originally proposed a range of 2–25 hooks between floats. The number was narrowed to 2–8 hooks after additional consultation with members of the HMSMT. Second, the applicant had proposed using smaller circle hooks (16/0) with no offset to fish for tunas but subsequently decided against this option. Finally the specification that the gear would be set at 40–45 m was added.

2.2.2 Southern California Bight

The SCB is a region including waters of the coastal areas and the Channel Islands south of Point Conception. The coastline is indented, trending to the southeast providing shelter from northwest winds that prevail during summer months. Circulation patterns and bathymetric complexity contribute to high marine biodiversity within the region. Because of its proximity to major metropolitan areas it also attracts heavy recreational use. Under the EFP terms and conditions fishing would not be allowed in this region. However, this requires delineation of a boundary line that is relatively easy to enforce. The applicant proposes a boundary line that is similar to one described in the 2003 HMS FMP FEIS (PFMC 2003) under Pelagic Longline Fishery Management Measures Alternative 4 (see page 8–31). The description in the FMP is as follows: "Prohibit fishing with longline gear north of Pt. Conception within 25 miles of shore and, south of Pt. Conception, east of a line from Pt Conception to the western tip of San Miguel Is., to the northwest tip of San Nicholas Is. to the intersection of longitude 118° 00' 00' W. with the southern boundary of the U.S. EEZ." The applicant proposed that the intersection with the EEZ boundary be at 118° 45' 00" W and that longline fishing would not occur within 30 nmi of the mainland shore. Two other adjustments have been made to the proposed line. First, the intersection of the 30 nmi buffer from the mainland and the line defining the SCB was moved west of a line drawn from Point Conception through the western tip of San Miguel Island so that this intersection occurs at the boundary of the Channel Island National Marine Sanctuary (i.e., Sanctuary waters would be excluded from the fishing area). Second, instead of setting the boundary at the western tip of San Nicholas Island, this waypoint is set at the three nmi state waters boundary off of the island. Figure 2–1 shows the boundary line in combination with the 30 nmi mainland buffer. The coordinates for this boundary line are as follows:

33° 57' 21" N, 120° 31' 44" W – Intersection with 30 nmi mainland buffer
33° 15' 00" N, 119° 40' 00" W – State waters boundary off western tip of San Nicholas Island
31° 06' 08" N, 118° 45' 00" W – Intersection with southern EEZ boundary

Figure 2–2 shows a coastwide perspective of the combined 30 nmi offshore limit and SCB boundary line.

2.3 Alternative 3

Under alternative 3 the EFP would be approved with all the terms and conditions listed above under alternative 2, but the following *additional* terms and conditions would also be imposed:

1. Require use of time and depth recorders (TDR) to estimate fishing depth. (The number of TDR units deployed per set and per trip would be determined by NMFS in consultation with the applicant.)
2. Gear may not be set until one hour after local sunset and must be fully deployed before local sunrise.[2]
3. Prohibit the use of a line shooter for setting the gear
4. Require use of a NMFS-approved dehooking device to maximize finfish (e.g., blue shark) bycatch survivability
5. Establish protected species take caps for marine mammals, sea turtles, seabirds, and prohibited species, such as striped marlin, that may be exposed to and adversely affected by this action

2.3.1 Rationale for Additional Terms and Conditions

These additional terms and conditions are intended to further minimize potential takes of protected species and bycatch of other species of concern. Deployment of TDRs would provide more detailed information on fishing depth and provide additional data related to catch rates and gear interactions with protected species.

The requirement to set the gear at night and the prohibition on the use of a line shooter are intended to reduce accidental hooking and/or entanglement of seabirds. Seabirds typically get hooked when the line is being deployed off the back of the vessel while the hooks are flying through the air or on the surface of the water before the gear sinks. The birds dive for the baited hooks, get hooked, and are dragged underwater and drown. Because seabirds are less active at night, the night setting requirement reduces these interactions. As the name implies, a line shooter shoots the gear through the air while the vessel is underway in order to deploy the gear at greater depth (a line shooter is more relevant to deep setting). Prohibition of this equipment would require gear deployment in a fashion less likely to result in seabird hooking.

Sharks are a major component of longline bycatch, especially blue sharks. If handled properly, a large proportion of these animals can be released alive when the gear is retrieved. Use of a NMFS-approved dehooking device would increase bycatch survival.

Species take caps would establish a limit on protected species takes or bycatch of other animals of concern. If any cap were reached fishing operations would cease pending retrieval of remaining gear in the water at which time fishing under the EFP would be terminated. Although recommended cap levels are not presented here, Chapter 4 presents information that can be used to determine the species and take

[2] This measure is based on a condition in the USFWS biological opinion for the HMS FMP with regard to the short-tailed albatross and brown pelican (USFWS 2004), which are endangered species. The way it was originally written when the alternatives were adopted for public review (gear must be completely retrieved by sunrise) was incorrect and would not be feasible for a typical longline set (i.e., it is not possible to set and retrieve the gear in the amount of time between sunset and sunrise). For this reason the measure has been corrected to accurately reflect the condition in the biological opinion. This condition is also consistent with regulations applicable to vessels permitted under the WPFMC's Pelagics FMP, 50 CFR 665.35(a)(4) (Pelagic longline seabird mitigation measures): *Shallow-setting requirement*. In addition to the requirements set forth in paragraphs (a)(1) and (a)(2) of this section, owners and operators of vessels engaged in shallow-setting that do not side-set must begin the deployment of longline gear at least 1 hour after local sunset and complete the deployment no later than local sunrise, using only the minimum vessel lights to conform with navigation rules and best safety practices.

levels for caps. Any caps identified by the Council would then be analyzed as part of the preferred alternative in the final EA prior to NMFS's final decision on whether to issue the EFP. Based on an exposure analysis, the following marine mammals are most likely to be affected by the EFP: California sea lion, northern elephant seal, short-beaked common dolphin, Risso's dolphin, and northern right whale dolphin. Other marine mammal species that in the past the Council has identified as of concern are: short-finned pilot whale, sperm whale, humpback whale, fin whale, gray whale, and minke whale. Of sea turtle species the leatherback is only one for which a cap is likely appropriate, based on population status and the possibility of a take. Although there is no overriding conservation concern for the striped marlin, California laws and policies have identified this as a recreational only species (commercial landings are prohibited). The Council may wish to propose an incidental catch limit for this species to address concerns (such as local depletion) shared by the recreational fishing community.

In considering caps it is very important to distinguish between take or catch (some type of encounter with the fishing gear) and actual mortality, because mortality rates can be significantly lower than 100% depending on the species and type of encounter (lightly entangled versus a deeply ingested hook for example). A cap based on takes is easier to monitor and enforce, but in arriving at a value for the cap the difference between a take and actual mortality should be considered. For example, if the intent is limit mortality to only one animal for a given species, but the mortality rate is 25 percent, a take cap of four animals could limit mortality to the desired level. Any such computation could be complicated as multiple mortality rates can be assigned depending on the type of encounter. For example, in the biological opinion for the Hawaii shallow-set longline fishery (NMFS 2004) four different mortality rates for sea turtles are referenced for a variety of encounter conditions (including entanglement with the turtle subsequently disentangled, various hook ingestion and subsequent release scenarios, and drowning of the turtle by the gear). For species listed under the ESA, which includes sea turtles, and some marine mammal and seabird species, the caps would be set consistent with any Incidental Take Statement (ITS) in the BO accompanying this action.

As originally adopted this alternative had two additional conditions: (1) Prohibit the use of small circle hooks, allow only 18/0 circle hooks with a 10° offset to fish for swordfish (as described at 50 CFR 660.33(f)) and (2) Require 4–6 hooks between floats. However, with the modifications to alternative 2 discussed above, these conditions are redundant because they are included in alternative 2, and all those conditions are applicable under alternative 3. (The limitation on the number of hooks between the floats is effectively identical to the requirement of 2–8 hooks under alternative 2.) Therefore, those two conditions are not repeated under this alternative.

2.4 Alternatives Eliminated from Detailed Study

Given the limited scope of the action (one vessel) no other alternatives were considered. The action alternatives are considered to contain a reasonable range of mitigation measures.

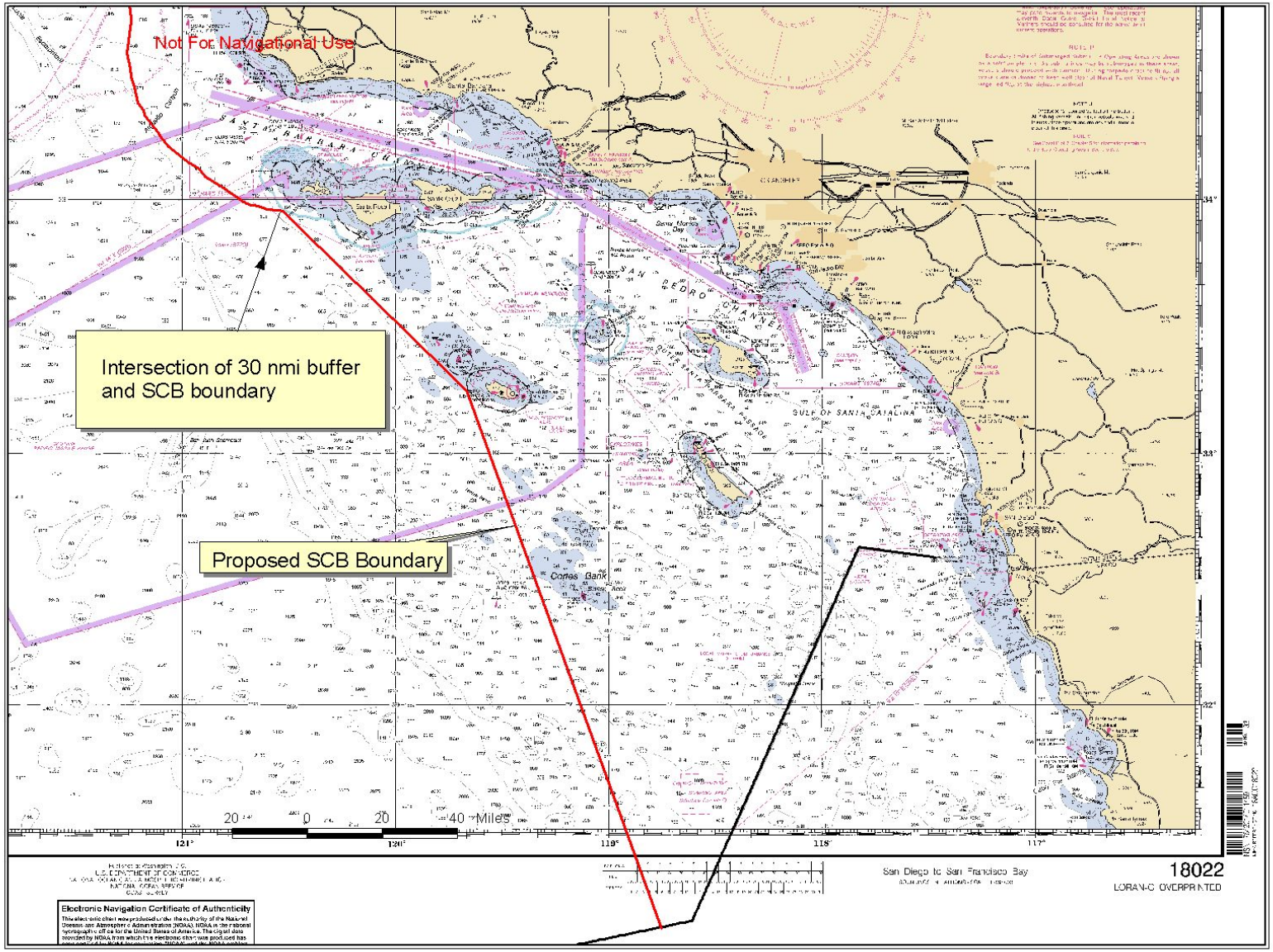

Figure 2–1. Boundary line for the Southern California Bight. North of the indicated intersection fishing is prohibited within 30 nmi of the mainland shore.

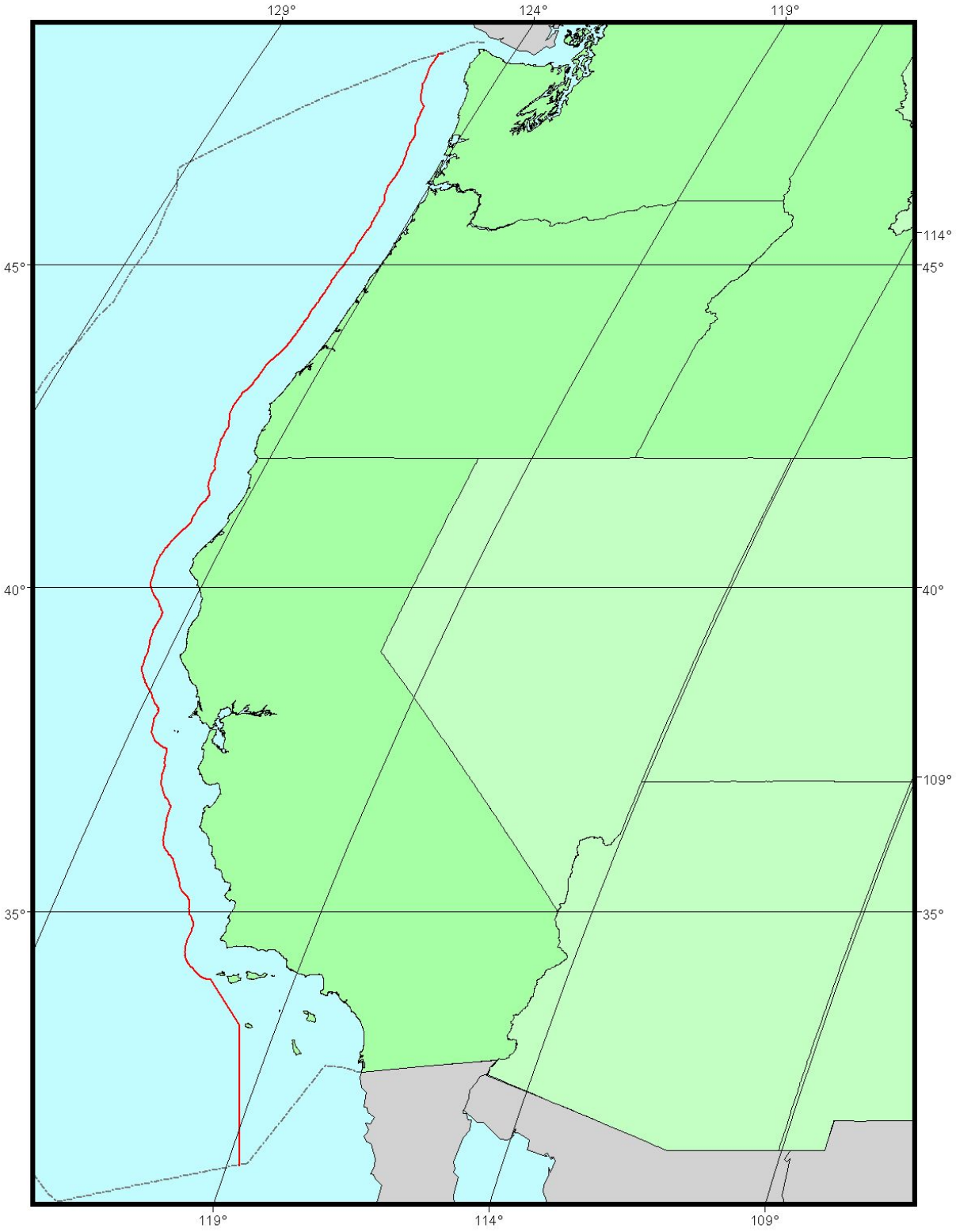

Figure 2–2. Offshore fishing boundary shown coastwide.

3.0 AFFECTED ENVIRONMENT

3.1 Introduction

3.1.1 Analytical Framework

This chapter and chapter 4 comprise the analytical portion of the EA. Basic guidance on what to analyze and how to analyze it is provided by Council on Environmental Quality (CEQ) regulations at 40 CFR Parts 1500–1508. This analysis considers the effect of the alternatives on different parts of the human environment, which in shorthand we refer to as *environmental components*. Section 1.6 presents a preliminary screening of possible effects, taking into account potential environmental components, such as target and nontarget fish, habitat, etc. Based on that preliminary screening three environmental components have been identified for further evaluation and discussion in these chapters: target and non-target finfish; protected species, with particular attention given to certain marine mammal, sea turtle, and seabird species; and the socioeconomic environment, which includes the EFP applicant and suppliers who may gain income from the sale of inputs (bait, fuel, fishing gear, etc.) to the applicant in the course of EFP fishing operations. The analysis can be visualized as a matrix consisting of the alternatives and the environmental components. Each cell in the matrix represents a possible effect that will be evaluated using some form of measurement, a *metric*. As shorthand we will use the term metric to refer to two related element: the *type* of effect (e.g., change in temperature) and the *unit of measurement* for gauging the effect (e.g., degrees Fahrenheit). More often than not, metrics are more of a conceptual device because we are not able to precisely measure the effect. First, data that may be used to characterize the effect are often limited or unavailable. Second, because the action will occur in the future, there is a need to either project or infer effects based on what has occurred in the past. Third, effects may be part of a larger chain of causation that includes intermediate factors or the influence of other activities. For example, the EFP would affect certain stocks of fish through fishing mortality—catching and killing a certain number of fish that interact with the fishing gear. Longline fishing that has occurred in the past—and in this case other areas, since longline fishing is prohibited in the EEZ—can be used to make some inference about the likely amount of fish of a given species that will be caught by fishing under the EFP. Fishing mortality in this case is the metric, but there is some uncertainty about the precise number of fish that will be caught. Furthermore, by itself fishing mortality says little about the effect of the action; it is necessary to consider it in the context of the status of the stock and other sources of fishing mortality contributing to the removal of fish from the stock. For all these reasons, the impact assessment is presented in descriptive form.

CEQ regulations at 40 CFR 1508.25 identify three types of impacts that must be considered in an environmental impact statement (and by extension, an EA): direct, indirect, and cumulative effects. Direct and indirect effects are causally related to the proposed action: they are directly related to the action (occurring at the same time and place) or are indirect in that there is some intermediate cause-and-effect between the proposed action and the actual effect being evaluated in the analysis (occurring at a distance in time and/or place). The regulations (40 CFR 1508.7) also define a cumulative impact as "the impact on the environment which results from the incremental impact of the action when added to other past, present and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such actions." Although the regulations and guidance identify cumulative effects as a separate, third class of impacts, all effects can be viewed as cumulative to the extent they are part of some causal chain that results in an ultimate effect on an environmental component. Using this concept of cumulative effects, this EA frames the analysis in terms of an additive model. To arrive at the final, cumulative effect on an environmental component, the effects in a causal chain are traced out and measured qualitatively or quantitatively, in terms of the metrics that have been identified in this EA. The components in this additive model begin with (1) the baseline condition of the environmental component,

to the degree it can be distinguished, and identifies (2) past and (3) other present actions and their effect on baseline conditions; (4) the effect of the proposed action (considered separately for each of the alternatives), (5) reasonably foreseeable future actions, and any (6) mitigation proposed separately from the alternatives are then added to the baseline to arrive at the cumulative effect. This is then compared to a threshold, if one exists in Federal, State, or local law (1508.27(b)(10)); or in land use plans, policies or controls for the area (1502.16(c)); or can be defined in terms of an inconsistency with such laws, policies or plans (1506.2(d)). If no such threshold can be identified, then the alternatives are evaluated comparatively to identify which one has the least effect, in terms of the metric concerned. (Although this is an additive model, it should be noted that component effects can be "subtractive" to the degree that they are in fact mitigative; conceptually this can be likened to adding a negative number.)

This additive model is applied within the framework of the EA by describing in Chapter 3 actions other than those of the proposed action (alternatives) and their effects; this serves as the description of the "affected environment." The affected environment is thus a summary of current conditions, which results from the interaction between past and present actions and underlying natural phenomena, and is described in terms of the same metrics used in Chapter 4. In addition, Chapter 3 discusses those factors likely to alter the condition of evaluated environmental components in the future—reasonably foreseeable future actions—in terms of the metrics. This projects the affected environment, or environmental baseline, forward in time by considering the interaction of these foreseeable actions with the natural phenomena. This is also a description of the overall, or cumulative, impact of the no action alternative, which in Chapter 4 can be used comparatively to describe how the alternatives would alter future baseline conditions (recognizing that the proposed action and alternatives are also future actions.) Chapter 4 evaluates the impacts of the alternatives. This includes a description of how these alternatives affect the evaluated environmental components, in terms of the metrics, and a summation of these effects in combination with projected environmental baseline (or conditions under no action); this represents the cumulative impact assessment.

No mitigation measures are proposed separately from any mitigative effect of the alternatives. Therefore, the effect of mitigation measures is not considered further in this EA when evaluating impacts.

3.1.2 Data Sources

3.1.2.1 Hawaii Shallow-set Longline

A Hawaii shallow-set longline fishery targeting swordfish with 4,247 observed sets from 283 trips took place from February 1994-December 2001 and from January 2004-September 2006. The area of fishing operations occurred between 16.9°–44.7° N latitude and 127.3° W–179.7° E longitude.

3.1.2.2 Longline Gear Observed During Fishing Operations

For the purposes of understanding general aspects of the fishing gear used, ranges will be given where applicable. Mainline and drop/branchline material consisted of 4 mm monofilament. Set distances ranged from 1 to 86 km with an average of 45 km. Target depths were between 5 and 255 m.

A line shooter was reported used in 60 sets or in 1.4 percent of the total sets.

A weighted dropper line was used in 96 percent or 4,072 sets. Drop line weights used during sets varied from 23 g to 170 g with the implementation of mostly 80g (46.7%), 60g (29.3%), and 45g (9.9%).

The most commonly used type of hooks where 18/0 offset circle hooks, which made up 45 percent (1,917 sets) of the total sets (4,247). Aside from that trip, the distribution of hook types used per set are as

follows: 9 J-hook (34%), 18 "other" type hooks (12%), circle hooks (4%), 9 and 11 offset tuna (2.5%), 9 and 18 offset tuna hook (2%), and finally 9 and 36 tuna hook (0.4%). The maximum number of hooks for any one set was 1300 and the minimum was 19. There were at most 20 hooks per float and at least 3 hooks per float. The total number of hooks observed was 3,442,823.

Float line lengths ranged from 3m to 36m. The number of floats varied from as little as 6 to 336 per set.

Bait consisted of mackerel (57.4% or 2,437 sets), large squid (25.2% or 1,069 sets), small squid (11.6% or 494 sets), mixed (3.3% or 142 sets), sardine (1.4% or 58 sets), and saury (1.1% or 47 sets). Light sticks ranged from 0–1225 per set with the color green used for 70.7 percent of sets, mixed for 22.4 percent of sets, yellow for 5.8 percent of sets, pink 0.57 percent of sets, magenta for 0.12 percent of sets, and white for only one set.

3.1.2.3 Soak Times, Sea Surface Temperature (SST) Ranges, and Vessel Speed

The amount of time the gear remained in the water (soak time) ranged from 1 to 100 hours with an average soak time of 20 hours. Vessel speed was between 4 and 11 knots with an average of 8 knots. Temperatures observed during set and haul times were as follows: 11.2°–30.1°C (begin set SST), 10.0–28.9°C (end set SST), 11.4°–29.4°C (begin haul SST), 10.3°–29.7°C (end haul SST).

3.2 Climate and Biophysical Factors Contributing to Baseline Effects

3.2.1 West Coast Oceanography

The west coast of North America from the Straight of Juan De Fuca to the tip of Baja California is part of an eastern boundary current complex known as the California Current System (Hickey 1988). The U.S. West Coast EEZ encompasses one of the major coastal upwelling areas of the world, where waters provide a nutrient-rich environment and high densities of forage for HMS species, especially from the Columbia River Plume south to the SCB. During summer months northerly winds set up Ekman transport of surface waters offshore causing colder, nutrient rich waters to upwell in nearshore areas, enhancing primary production as nutrients become available in the photic zone. The region is influenced by various currents and water masses, the shifting nature of which affects the occurrence and distribution of HMS at particular times of the year and from year to year. Large-scale currents within this region include the surface-flowing California Current and the Inshore Countercurrent (Davidson Current), and the subsurface California Undercurrent (Figure 3–1). The region includes two major river plumes (Columbia River and San Francisco Bay), several smaller estuaries, numerous submarine canyons, and the complex borderland of the SCB with its offshore islands, undersea ridges and deep basins.

Physical oceanographic features of the environment change seasonally and also during periods of large-scale, oceanic regime shifts such as El Niño (see below). The California Current represents an extension of the North Pacific Gyre, which splits upon reaching the North American continental margin at approximately Vancouver Island, forming a northern limb, the Alaska Current, and a southern limb, the California Current. The California Current generally flows southward year round, with strongest flows in spring and summer. Inshore, these flows may be reversed by the seasonal appearance in fall and winter of the subsurface poleward-flowing Inshore Countercurrent. The California Undercurrent primarily intensifies in late spring and summer as a narrow ribbon of high-speed flow which presses northward at depth against the continental slope, generally beneath the equator-ward flowing upper layers (Lynn and Simpson, 1987). Coastal upwelling of cold, salty and nutrient-rich water to the surface occurs primarily in spring and summer in California and into early fall off Oregon, driven by prevailing seasonal winds. Upwelling is often most intense near such promontories as Cape Mendocino and Pt. Conception. During El Niño events, flow in the California Current is anomalously weak, the California Undercurrent is

anomalously strong, and the water in the upper 500 m of the water column is anomalously warm (Chelton and Davis 1982).

The SCB differs dramatically from the regions to the north and south. The shelves in this area are generally very narrow (<10 km) and the sea bed offshore is cut by a number of deep (>500m) basins (Figure 3–2). The ocean is generally warmer and more protected here than areas to the north, especially inshore of a line roughly drawn from San Miguel Island to San Clemente Island. From Pt. Conception northward to off Cape Flattery, Washington, the coastline is relatively unprotected from the force of the sea and prevailing northwest winds. In contrast to the SCB, rugged waters and sea state conditions are common north of Pt. Conception.

3.2.2 Oceanic Fronts

The occurrence and behavior of pelagic species is strongly influenced by the thermal structure of the open ocean environment. Although swordfish, the principal target species in this EFP, occur widely in the Pacific, and tolerate a wide range of water temperature (5°-27° C), they concentrate at oceanic fronts. These fronts are areas of steeper temperature and salinity gradient. In the North Pacific two major frontal regions important to swordfish fisheries occur, the subarctic frontal zone (SAFZ) occurring between 40° and 43° N latitude and the subtropical frontal zone occurring between 27° and 33° N latitude. The STFZ occurs variously as a temperature front from late fall to summer and all year as a salinity front (Bigelow, *et al.* 1999). Within these zones fronts develop, persist, and shift seasonally in complex patterns (Seki, *et al.* 2002). Seki, *et al.* (2002) identified two prominent semi-permanent fronts within the STFZ, the Subtropical Front (STF) located between 32° and 34° N latitude and the South Subtropical Front (SSTF) located between 28° and 30° N latitude. The STF is identifiable by the 17° C sea surface temperature (SST) isotherm and 34.8 isohaline (line of equal salinity) while the SSTF can be identified by the 20°C isotherm and 35.0 isohaline and 24.8 isopycnal (line of equal density) (Seki, *et al.* 2002). Fronts also affect vertical structure as the thermocline and stability layer shoals to the upper euphotic zone on the cold side of the STF. This structure has an important effect on primary production. Production may be further enhanced by meander-induced upwelling at the front. Enhanced primary production affects system productivity; forage species are concentrated along fronts and this accounts for the concentration of large pelagic species along these fronts. Bigelow, *et al.* (1999) used a Generalized Additive Model (GAM) to examine the relation between fishery performance (swordfish and blue shark CPUE) in the Hawaii longline fishery and spatial, temporal, and oceanographic factors, including indicators of these fronts. Spatial distribution of effort in the Hawaii fishery shows a concentration in the STFZ north of Hawaii and to a lesser extent the SAFZ. Although basic spatio-temporal factors (latitude, time, longitude) were most important in explaining CPUE variance, front indicators (SST and SST frontal energy, a calculation of the change in SST by distance) were intermediate. GAM outputs showed swordfish CPUE was highest in 15°C water and decreased at higher temperatures. Increasing SST frontal energy had a positive effect on swordfish CPUE. Formation of fronts will also be affected by major current systems and near the continental margin by bathymetry. Atlantic longline fisheries concentrate on a shelf-break front where CPUE is higher (Podestá, *et al.* 1993). On the West Coast, the California Current and coastal upwelling affect the formation of fronts.

Figures 3–2–3–5 are monthly composite SST plots for September-December 2004 from the NOAA CoastWatch high resolution (1.1 km/pixel) Advanced Very High Resolution Radiometer (AVHRR) data sets for the Southern California region (Region L) (http://coastwatch.pfel.noaa.gov/sst_comp_high.html). The data were processed using the CoastWatch Data Analysis Tool to constrain color steps to 1°C increments between 10° and 20° C. Figures 3–6–3–9 are low resolution (5 km/pixel) AVHRR plots for the West Coast region (Region Z) (http://coastwatch.pfel.noaa.gov/sst_comp_low.html) processed in the same way. The intent is to give a general idea of seasonal temperature regimes that may occur during the prosecution of the EFP. The literature discussed above suggests that temperatures in the range of 15-18°

C would indicate areas of swordfish abundance. On the plots that temperature range is indicated by the green-yellow-orange shades. The West Coast plots also show the 200 m and 2,000 m isobaths, which indicate the shelf break and slope. This may be another area of frontal activity.

Etnoyer, *et al.* (2004) identify areas of persistent pelagic habitat by analyzing AVHRR and Miami Multi-channel Sea Surface Temperature (MCSST) data with edge detection algorithms to identify temperature gradients indicative of fronts. Using time series data they also estimated the persistence of such fronts. They identified an area they call the Baja California Frontal System, located off the west coast of Mexico, as exhibiting the highest concentration of persistent fronts. Other important areas include the North Pacific Transition Zone (the area between the SAFZ and STFZ) north and west of Hawaii, and the Channel Islands pelagic region off of Southern California.

Frontal zones are also important to protected species that may be vulnerable to the longline EFP. Polovina, *et al.* (2000) compared the tracks of nine loggerhead turtles equipped with satellite transmitters and satellite derived information on SST (MCSST), chlorophyll (Sea-viewing Wide Field-of-view sensor, SeaWiFS), and geostrophic currents computed from satellite altimetry data (TOPEX/Poseidon). The turtles were initially taken in the Hawaii longline fishery in the STF north of Hawaii. Two groups of turtles could be discriminated, one associated with the 17° C isotherm and the second with the 20°C isotherm. These are the STF and SSTF identified by Seki, *et al.* (2002) and discussed above. Etnoyer, *et al.* (2004) link areas of high frontal activity (Baja California Frontal System, Channel Islands) to large pelagics, such as blue whales. They cite satellite telemetry data from four blue whales to show individual whale movements overlapped frontal features or the whales maintained positions between frontal features in the Baja California Frontal System.

Although the large open ocean frontal zones discussed above do not extend to the West Coast, localized frontal systems are set up within the California Current System in response to coastal upwelling and interaction with coastal geometry (Castelao, *et al.* 2006). Fronts develop close to the coast in the spring, particularly south of Cape Blanco and increase over the summer, extending farther offshore. Etnoyer, *et al.* (2004) show areas where persistent fronts occur along much of the West Coast. Limited data indicates concentrations of leatherback sea turtles associated with the freshwater plume generated by the Columbia River (discussed in Section 3.4). The Columbia River plume has regionally effects by causing intense mixing that contribute nutrients to surface layers and consequent primary production (Orton and Jay 2005). Leatherback sea turtles may be attracted to the region as prey species are either attracted to or entrained in the plume front.

3.2.3 Climate Variability

Two meso-scale climate phenomena likely affect frontal activity and the distribution of swordfish, other target and non-target finfish, and protected species that may be caught in the longline EFP. The first is El Niño-Southern Oscillation (ENSO), which is characterized by a relaxation of the Indonesian Low and subsequent weakening or reversal of westerly trade winds, causing warm surface waters in the western Pacific to shift eastward. Although the effects can be global, especially during an intense event, off the West Coast an El Niño event brings warm waters and a weakening of coastal upwelling. Tropical species, such as tuna and billfish are found farther north; for example striped marlin was recorded off the Oregon coast during the strong 1997-99 El Niño event (Field and Ralston 2005). A related condition is termed La Niña and results in inverse conditions (i.e., intensified Indonesian Low, strengthened westerly trade winds, pooling of warm water in the western Pacific, and relatively cooler water in the eastern tropical Pacific and California Current System). Etnoyer, *et al.* (2004) found the northeast Pacific was less active in terms of front concentration and persistence during El Niño and relatively more active during La Niña. The current prediction (February 8, 2007) from the National Weather Service Climate Prediction Center

(http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/ensodisc.html) indicates decreasing positive SST anomalies causing a shift from mild El Niño conditions to neutral conditions in the March-May 2007 period. There is considerable uncertainty beyond this time period.

Longer period cycles, which are partially identified by an index termed the Pacific Decadal Oscillation or PDO, also have important ecological effects in the California Current System (CCS). Regime shifts indicted by the PDO have a periodicity operating at both a 15-25 and 50–70 year intervals (Schwing 2005). The PDO indicates shifts between warm and cool phases. The warm phase is characterized by warmer temperatures in the northeast Pacific (including the West Coast) and cooler-than-average sea surface temperatures and lower-than-average sea level air pressure in the central North Pacific; opposite conditions prevail during cool phases. Rapid phase shifts occurred in 1925, 1947, 1977, and 1989. A regime change has been detected as occurring in 1998. The 1977 shift, from a cool to warm phase in the CCS produced less productive ocean conditions off the West Coast and more favorable conditions around Alaska. Hare, *et al.* (1999) documented the inverse relationship between salmon production in Alaska and the Pacific Northwest and related this to PDO-influenced ocean conditions. Researchers have identified similar relationships between meso-scale climate regimes and the productivity of other fish populations (see Francis, *et al.* 1998 for a review). However, both the 1989 and 1998 shifts have different characteristics from previous shifts. The 1989 shift did not bring cooler water and enhanced upwelling to the West Coast. This has apparently resulted in a further decline in the productivity of some fish populations in the northeast Pacific (McFarlane *et al.* 2000). The 1998 shift resulted in dramatic cooling of West Coast waters, but the characteristics of this phase are obscured by the short time series since onset and the development El Niños in 1998-99 and 2002-03. The cooling trend was interrupted or may have ended in 2003 (Schwing 2005).

Because the effects are similar, "in-phase" ENSO events (e.g., an El Niño during a PDO warm phase) can be intensified. However, aside from these phase effects, regime conditions identified by the PDO index, although of much longer duration than ENSO events, are milder. It is also important to note that—while the fundamental causes of PDO are not fully understood—they are known to be different from those driving ENSO events. And while ENSO has its primary effect on the tropical Pacific, with secondary effects in colder regions, the opposite is true of PDO; its primary effects occur in the northeast Pacific.

The ecosystem effects of PDO conditions are pervasive. Climate conditions directly affect primary production (phytoplankton abundance), but ecosystem linkages ensure these changes influence the abundance of higher trophic level organisms, including fish populations targeted by fishers (Francis, *et al.* 1998, MacCall 2005).

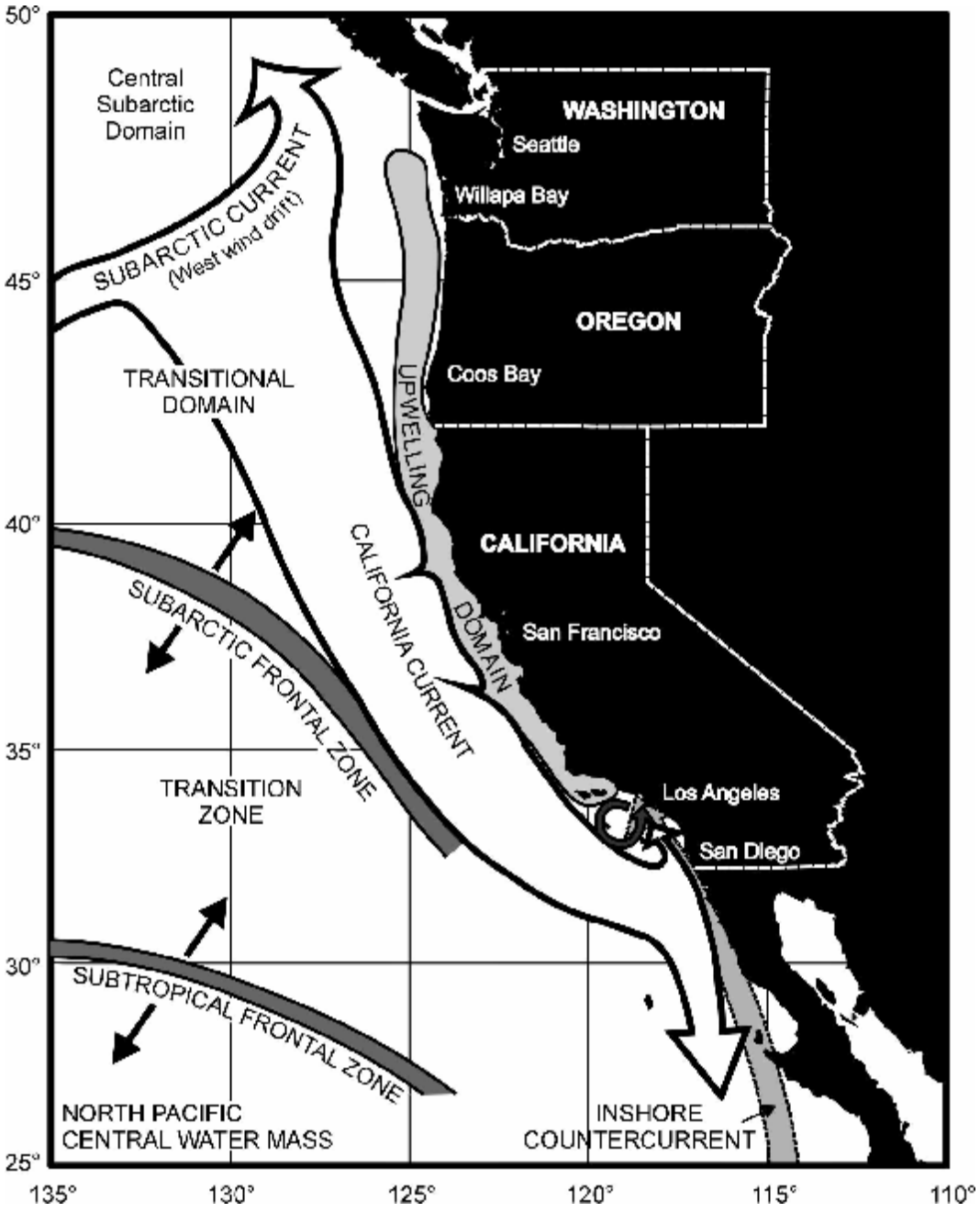

Figure 3–1. Major current and water mass systems that influence essential fish habitat of highly migratory management unit species in the U.S. West Coast EEZ.

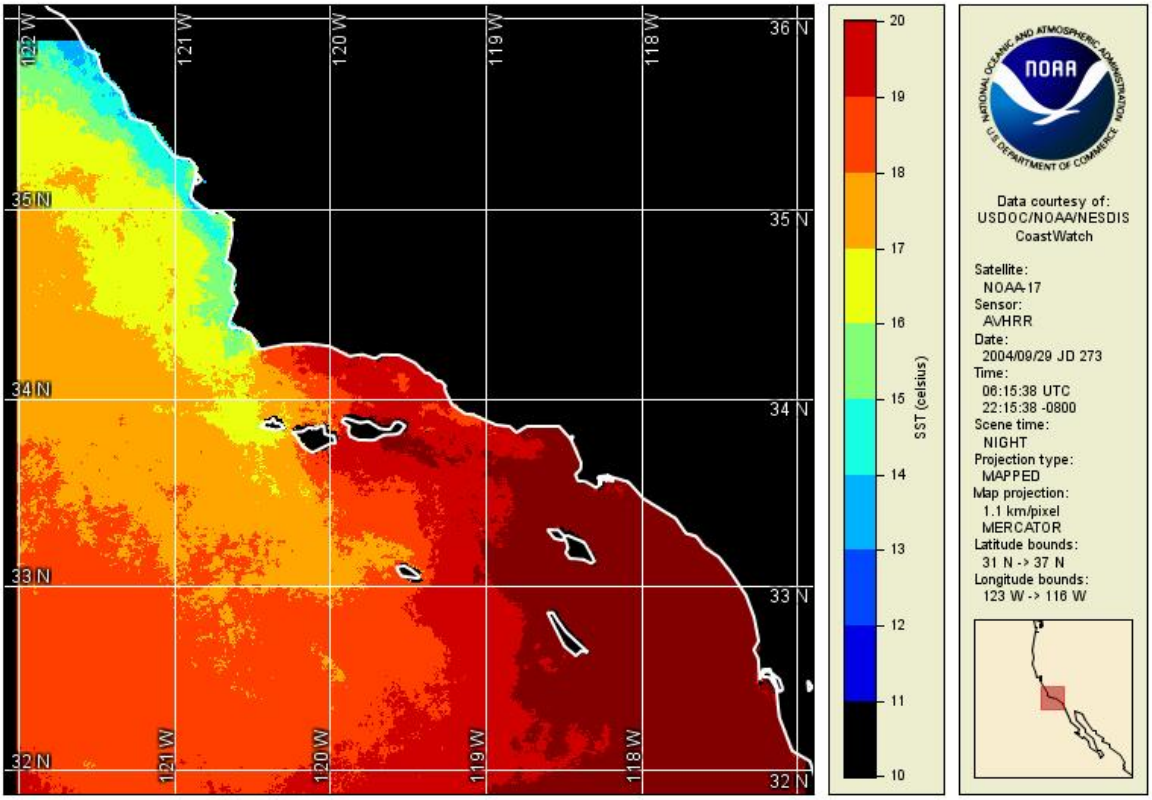

Figure 3–2. Monthly SST composite, Southern California region, September 2004.

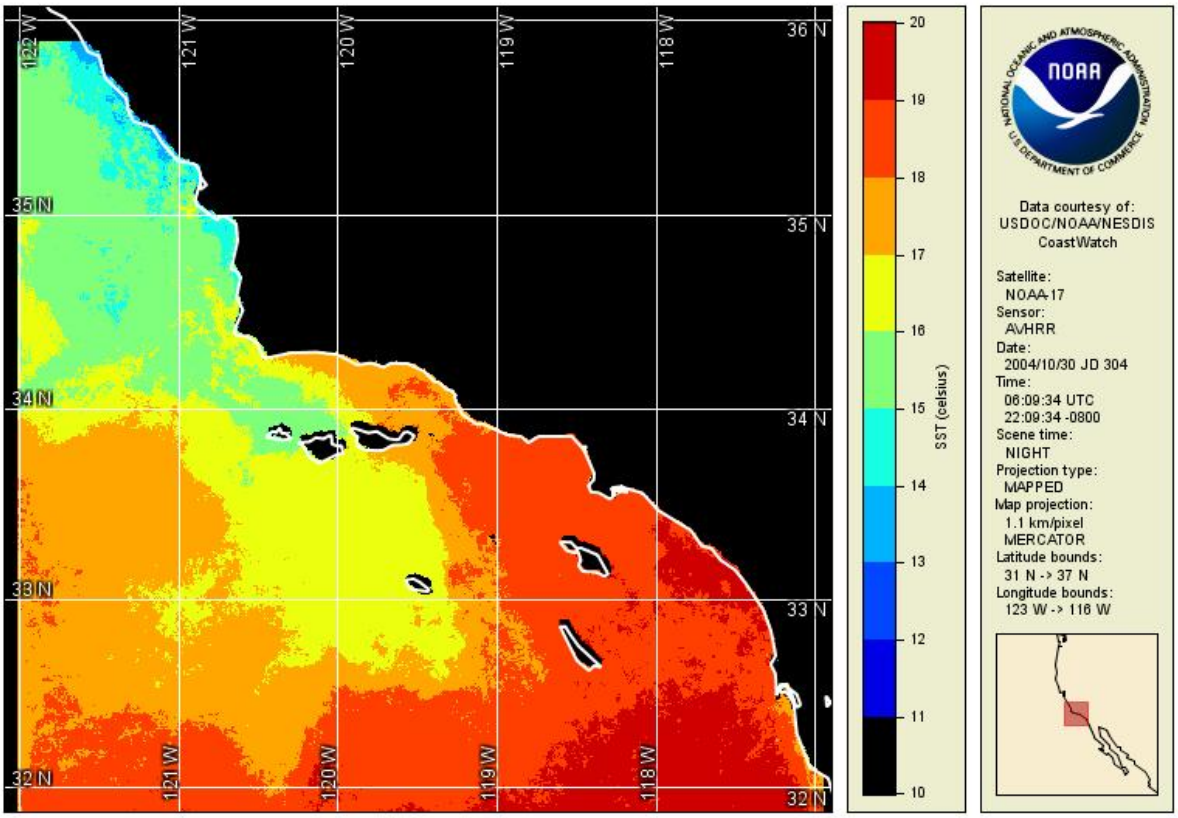

Figure 3–3. Monthly SST composite, Southern California region October 2004.

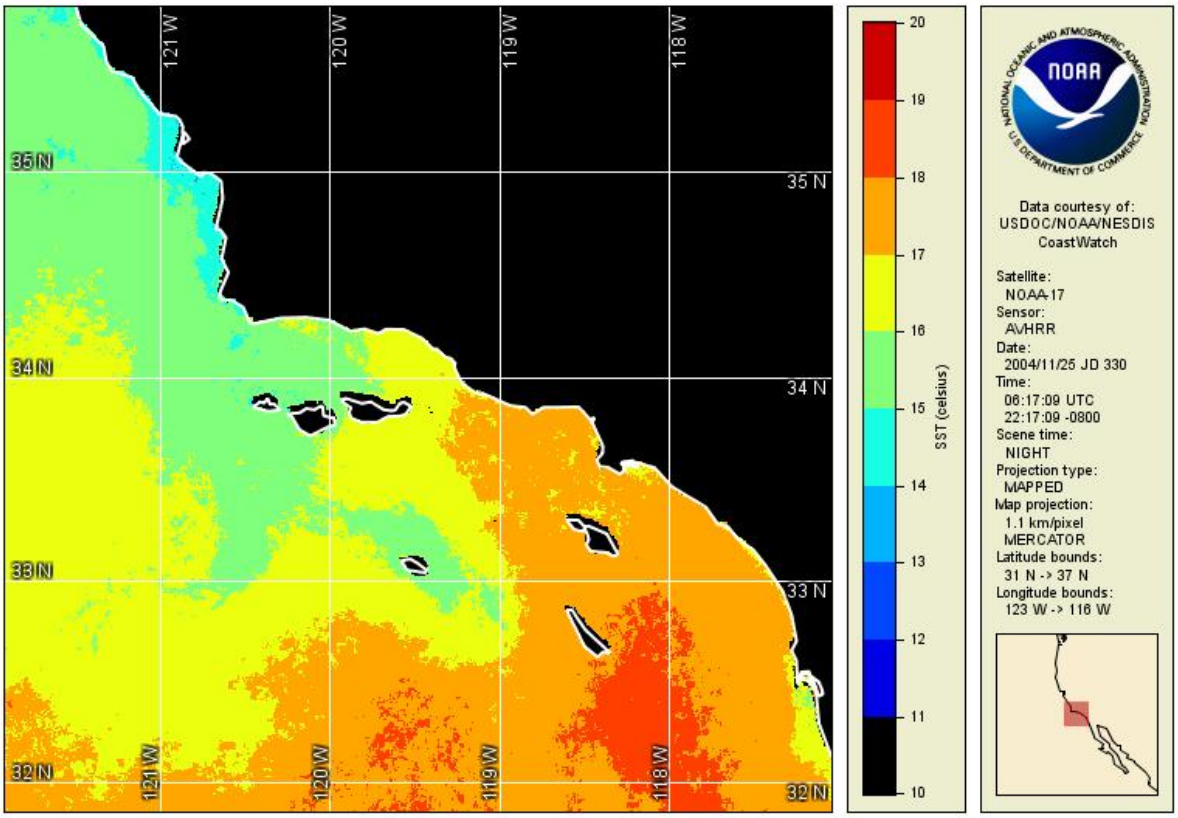

Figure 3–4. Monthly SST composite, Southern California region November 2004.

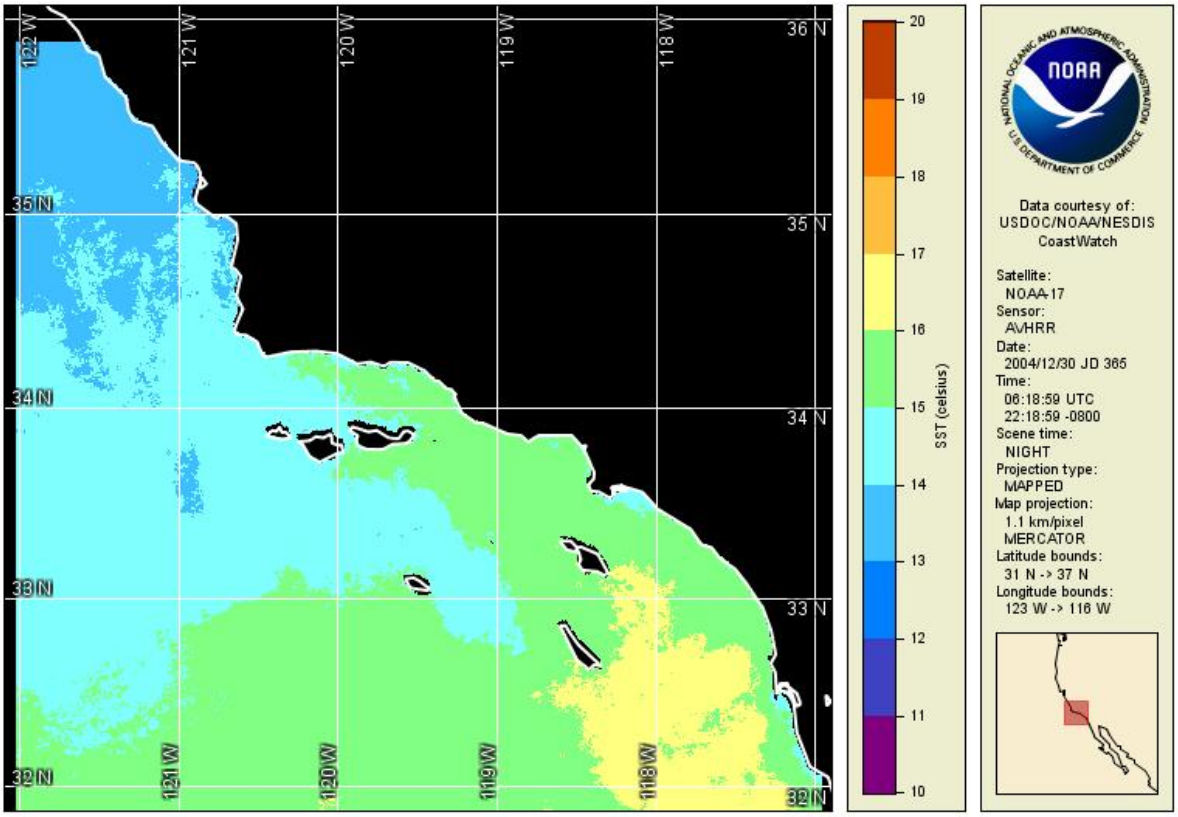

Figure 3–5. Monthly SST composite, Southern California region December 2004.

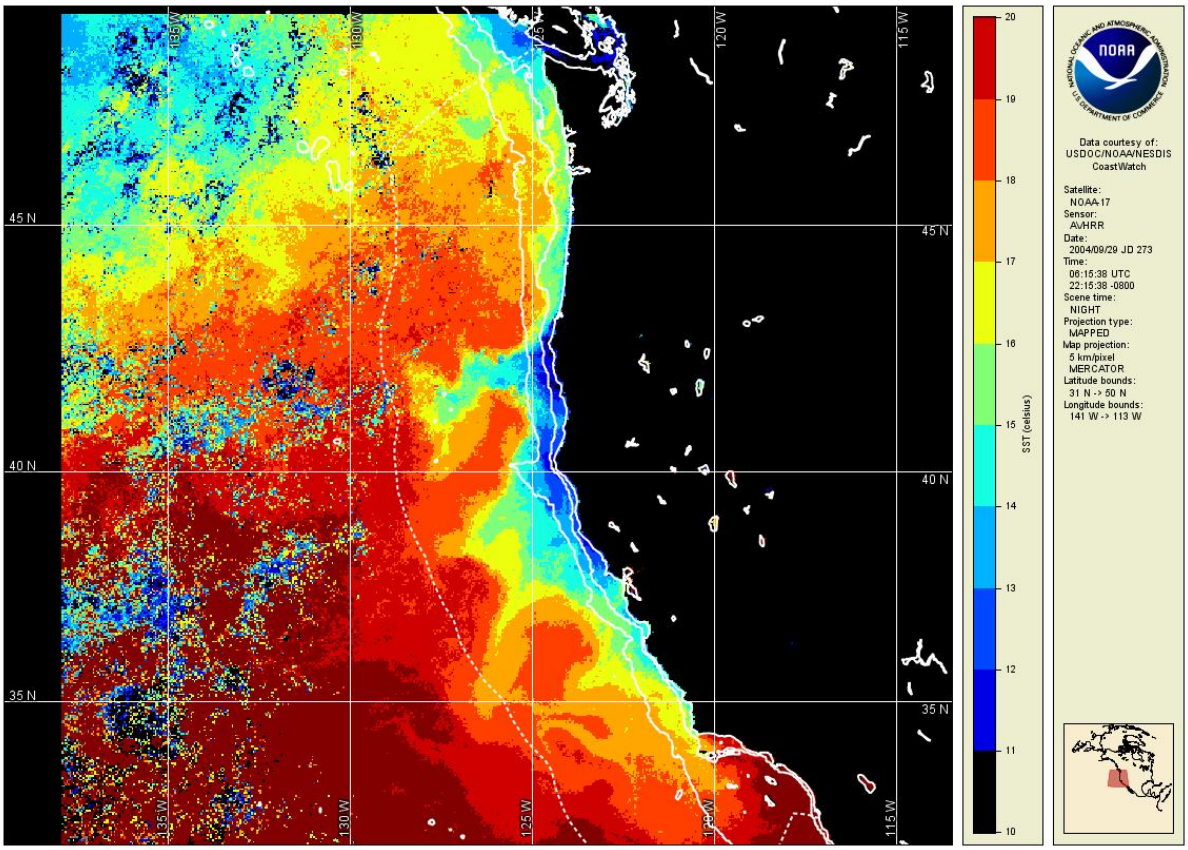

Figure 3–6. Monthly SST composite, West Coast region September 2004.

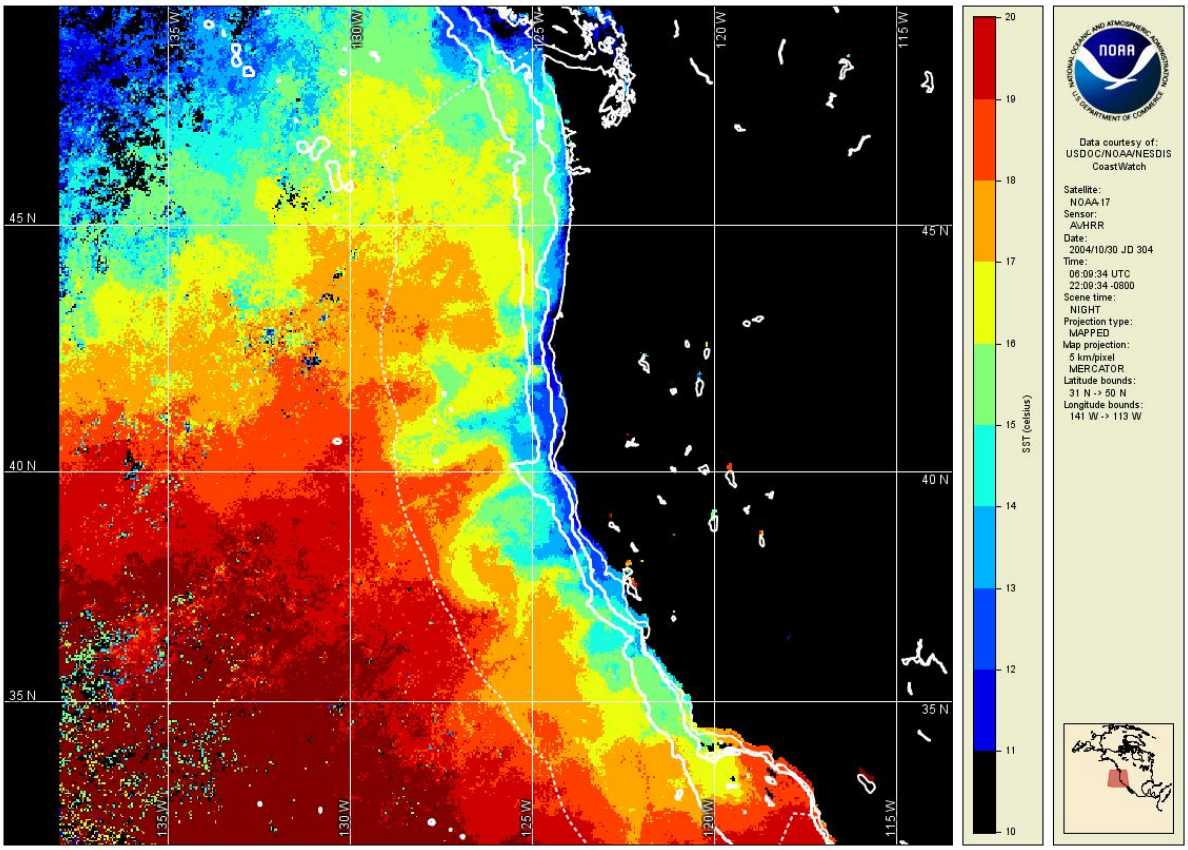

Figure 3–7. Monthly SST composite, West Coast region October 2004.

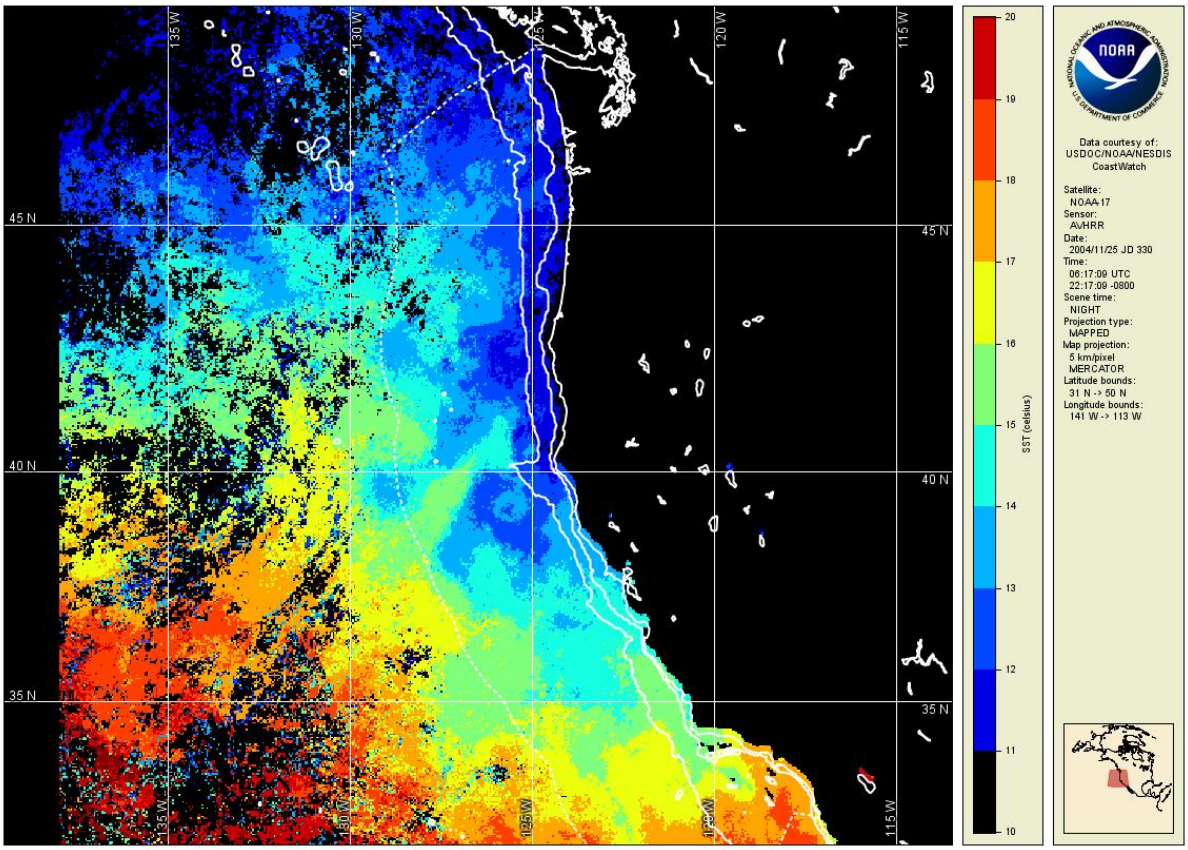

Figure 3–8. Monthly SST composite, West Coast region November 2004.

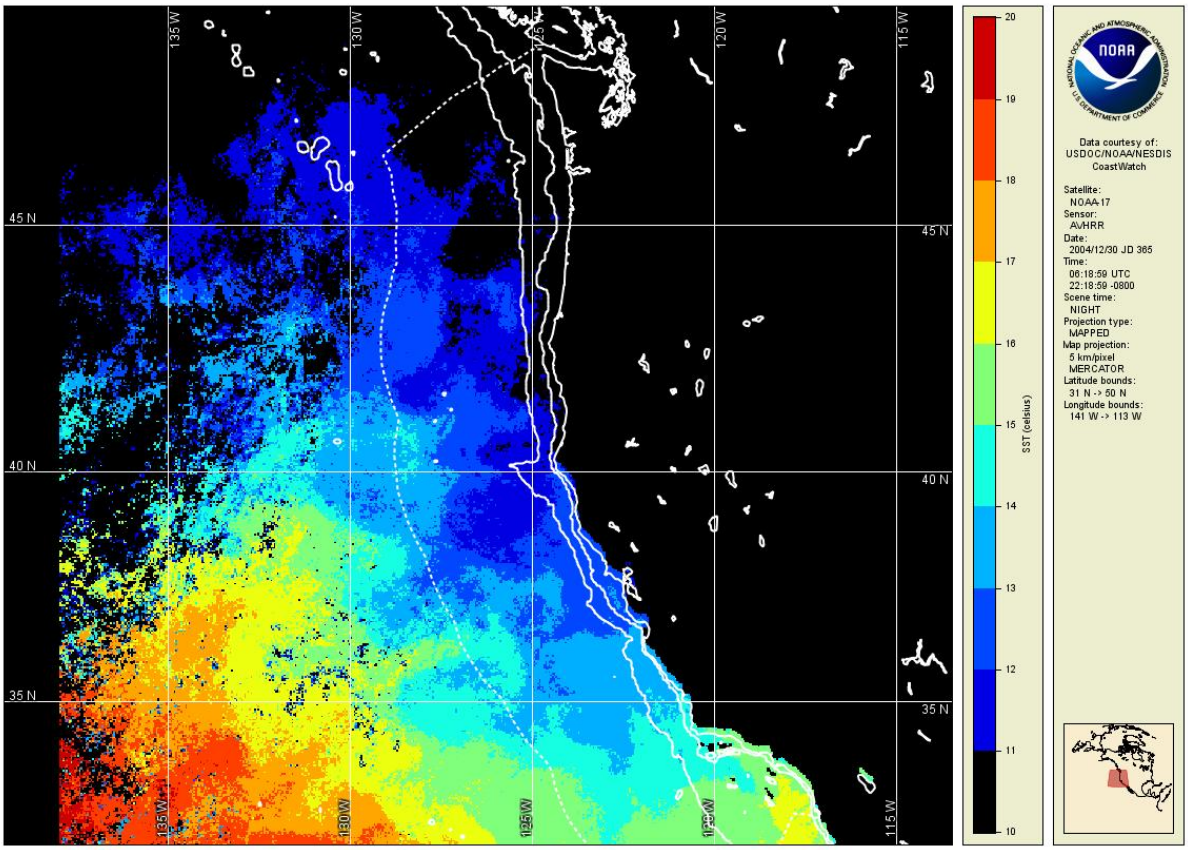

Figure 3–9. Monthly SST composite, West Coast region December 2004.

3.3 Finfish

This section describes the baseline conditions of the finfish species likely to be caught in the longline EFP that is the subject of this EA. The baseline conditions include the range of fisheries contributing mortality of the stocks, reviews fishery catches on a stock basis, and summarizes what is currently known about stock status.

3.3.1 Baseline Description of Past, Present, or Future Fisheries in the Proposed Action Area

The target species for the proposed action, the broadbill swordfish, as well as several of the major non-target finfish species such as blue and shortfin mako sharks, are included as HMS management unit species (Table 3–1) under the HMS FMP (PFMC 2003, Ch. 3 Pg.4). The HMS FMP further designates a complex of fish species as "prohibited species" meaning that they cannot be retained, or can be retained only under specified conditions, by persons fishing for management unit species (PFMC 2003, Ch.3-Pg.6). These FMP categories are used to organize the discussion of the current condition of finfish stocks that may be affected by the longline EFP.

The review of fisheries below has two purposes. First, the review provides a summary of actions contributing to cumulative effects of the proposed action. Second, because pelagic longline fishing has never been permitted within the EEZ waters adjacent to California, there are no longline fishery dependent records to draw upon to estimate the effects of the proposed action. For that reason, catch rates in similar fisheries in adjacent areas or, in the case of the California/Oregon Swordfish/Thresher Shark Drift Gillnet (DGN) fishery, a different gear type targeting swordfish within the action area, are reviewed to help inform the analysis of the effects of the alternatives in chapter 4. The HMS FMP provides a detailed description of the baseline environment for all HMS fisheries and the reader is referred to that document for further insight (PFMC 2003).

There are numerous foreign fisheries that operate throughout the Pacific Ocean using, among other gears, pelagic longline, pole-and-line, purse seine, gillnet, and troll gears. By comparison, U.S. West Coast-based fisheries generally harvest a small fraction of the total Pan-Pacific harvest of HMS. The U.S. North Pacific albacore troll fleet is one of two significant U.S. fisheries in this regard landing an estimated 21 percent of the harvest of North Pacific albacore stocks with Japanese fleets landing an estimated 73 percent (Childers and Aalbers 2006).

The U.S. swordfish fishery is the other fishery of significance landing approximately 43 percent of the North Pacific swordfish landings (north of 5° S latitude), based on 2000–02 data compiled by the IATTC (Hinton*, et al.* 2004). The DGN fishery contributes roughly 19 percent of the U.S. catch component based on Pacific Fishery Information Network (PacFIN) records for the same time period (HMSMT 2005).

Major Pacific fishing areas for swordfish include the waters off Japan, the North Pacific Transition Zone north of Hawaii, the west coasts of the U.S., Mexico, Ecuador, Peru, Chile, and off Australia and New Zealand. Much of the Pacific catch is taken incidentally in longline fisheries targeting tunas. Japan, Taiwan and the United States account for about 70 percent of current reported production, with Mexico, Ecuador, and Chile providing the remainder. In the Eastern Pacific, swordfish are primarily harvested using longlines, drift nets and hand-held harpoons (HMSMT 2005).

The HMS FMP requires that all commercial and recreational charter fishing vessel operators maintain and submit to NMFS logbook records of catch and effort statistics, including bycatch. These measures, together with existing data collection and reporting requirements (e.g., observer records), are intended to

provide a comprehensive standardized bycatch reporting system. However, HMS logbook bycatch records suffer from under-reporting and non-reporting biases, a common shortcoming in regards to accuracy of bycatch estimates from most fishery logbook programs. When available, estimates of bycatch reported in HMS logbooks are presented, but the limitations of the data should be kept in mind.

Pelagic longline fishing has never been permitted within the California or Washington EEZs and as such there are no longline fishery dependent records to draw upon for describing the potential baseline condition within the proposed action area (U.S. West Coast EEZ off California, Oregon, and Washington). The state of Oregon approved and offered permits for a pelagic longline fishery beginning in 1995, and up until the time of the HMS FMP implemented longline prohibition in 2004, no participants have applied for the permit (Cyreis Schmitt, Oregon Dept. of Fish and Wildlife, personal communication, March 9, 2007). There is, however, an existing U.S. domestic pelagic shallow-set longline (SSLL) fishery, based in Hawaii that will allow some comparisons to be drawn for the proposed action. The suite of potential species and magnitude of interactions will differ to some degree, given the more temperate and coastal areas that will be targeted under the proposed action.

Description of past and present longline fisheries taking place outside the U.S. West Coast EEZ are presented followed by a description of pertinent non-longline fisheries that interact and harvest HMS species. Given the lack of longline fishing history inside the EEZ, the U.S. domestic DGN fishery operating primarily off the coast of California provides the closest approximation to the spatial and temporal scope for the proposed EFP action area. Observer records from the DGN fishery provide some indication of the potential suite of target, non-target, and prohibited finfish species that may interact with the SSLL longline gear. Given the similarity in gear and techniques, the California- and Hawaii-based SSLL fishery provides the best, albeit tenuous approximation given the disparate fishing areas, of the potential CPUE for the target, non-target, and prohibited finfish species that may be taken under the proposed action. Observer records from the California-Hawaii SSLL fishery are used to compute CPUE estimates as a proxy for the expected take under the proposed action.

Table 3–1 HMS FMP Management Unit Species.

Common Name	Scientific Name
Striped marlin	*Tetrapturus audax*
Swordfish	*Xiphias gladius*
Common thresher shark	*Alopias vulpinus*
Pelagic thresher shark	*A. pelagicus*
Bigeye thresher shark	*A. superciliosus*
Shortfin mako shark	*Isurus oxyrinchus*
Blue shark	*Prionace glauca*
North Pacific albacore	*Thunnus alalunga*
Yellowfin tuna	*T. albacares*
Bigeye tuna	*T. obesus*
Skipjack tuna	*Katsuwonus pelamis*
Northern bluefin tuna	*T. thynnus*
Dorado	*Coryphaena hippurus*

3.3.1.1 Longline Fisheries

Southern California Experimental Drift Longline Fishery for Sharks, 1988-1991

A small scale experimental drift longline fishery for sharks, ranging from 6–10 vessels per year, was conducted in 1988–1991 within the EEZ off the coast of California. The target species for this fishery

were shortfin mako and blue sharks with gear consisting of heavy gauge steel leaders and short steel cable mainlines (~5 miles in length), to maximize retention. Target fishing depth was estimated to be 10–20 m with daytime soak times averaging about five hours. The bycatch records from this experimental fishery indicate a low rate of interaction with non-target species which would be somewhat expected given the heavy gear and probable avoidance by visually perceptive pelagic predators such as marlins and tunas. Due to concerns with the incidental take of striped marlin, approximately 19 percent of all fishing operations were monitored by California Department of Fish and Game (CDFG) observers (O'Brien and Sunada, 1994) and no striped marlin were observed taken. Landings data based on CDFG landing receipts for the target sharks are presented in Table 3–2.

Table 3–2 Shortfin Mako Shark and Blue Shark Landings (pounds) for the Experimental Drift Longline Fishery for Sharks, 1988–1991.

	1988 (10 vessels with 609,026 hook effort)	1989 (10 vessels with 377,382 hook effort)	1990 (6 vessels with 461,524 hook effort)	1991 (8 vessels with 157,720 hook effort)
Shortfin mako shark	269,604	177,928	174,215	110,513
Blue shark	2,462	10,818	42,818	0
Total	**272,066**	**188,746**	**217,033**	**110,513**

The observed catch was similar among years with blue sharks comprising 62 percent of the total catch, shortfin mako sharks 29 percent, and pelagic stingrays nearly 9 percent. Observers noted that 52 percent and 88 percent of the blue sharks released in 1988 and 1989 were in good condition and likely to survive. The marked survival increase was attributed to the use of long-handled hook removal pliers beginning in 1989. Three sea lions were caught and released alive (no condition status noted).

Table 3–3. Number and Percentage of Total Catch for Species Captured during the Experimental Drift Longline Fishery for Sharks Gear, 1988 and 1989.

Species	1988		1989	
	No.	%	No.	%
Blue shark	1,900	62.1	1,320	62.0
Shortfin mako shark	883	28.9	610	28.7
Pelagic stingray	265	8.7	194	9.1
Ocean sunfish	1	---	2	0.1
California sea lion	3	0.1	2	0.1
Hammerhead shark	2	0.1	0	0
Finescale triggerfish	1	---	0	0
Giant Sea bass	1	---	0	0
Pacific mackerel	2	0.1	0	0

California-based Deep-set Tuna Longline Fishery, 2005–Present

A single West Coast-based pelagic longline vessel has been operating out of Southern California ports for the past several years. This vessel primarily targets tuna using deep-set longline gear with a percentage of swordfish and other HMS taken incidentally. At the present time, any longline fishing by West Coast-based vessels must take place on the high seas outside of the U.S. EEZ. Increased participation in this fishery is not expected. Even if participation were to increase, the maximum number of vessels fishing would be small given, among other things, the high operational costs for fishing outside the EEZ coupled

with potential protected species interactions and the need for a high rate of observer coverage. NMFS SWR observer records, based on six observed trips and 73 sets of effort, demonstrate that tuna catches made up 94 percent by number of the total catch with swordfish comprising 0.2 percent and thresher shark 0.3 percent.

California and Hawaii-based Shallow-set Longline Swordfish Fishery, 1994–present

The target species of the Hawaii-based SSLL fishery are the broadbill swordfish and tunas (*Thunnus spp*.) along with a host of other marine species captured incidentally in this fishery. The NMFS Pacific Islands Fishery Science Center (PIFSC) provides logbook summaries for all longline vessels, including shallow-set and deep-set vessels landing product in Hawaii.[3] For the time period of January 2005 through December 2005, a total of 124 longline vessels landed HMS, based on logbook records submitted to the PIFSC. These vessels completed 1,549 trips with 18,191 recorded sets. A total of 24,350 swordfish by number were harvested of which 21,665 were kept. The thresher shark catch totaled 3,611 of which only 382 were recorded as kept.

Observer catch estimates for target, non-target, and prohibited finfish species are presented below and are based in part on observer records compiled for the SSLL fishery that has operated since 1994 out of Hawaii (February 1994–December 2001, April 2004-April 2006) and for a limited time out of California (October 2001–February 2004). The area of fishing operations for the Hawaii-based boats occurred between 16.9°N and 44.7°N latitude and 127.3°W to 179.7°E longitude. The area of fishing operations for the California-based boats occurred between 28°N and 43°N latitude and 165°W to 135°W longitude.

[3] Data source: http://www.pifsc.noaa.gov/fmsd/reports/hlreports/2005.pdf

Table 3–4. Total observed catch in numbers of animals and catch-per-unit-effort in number of animals per 1,000 hooks of effort for California-based and Hawaii-based shallow-set longline fishery.

	Total Observed Catch for CA-based SSLL	CPUE (No. per 1,000 hooks)	Total Observed Catch for HI-based SSLL	CPUE (No. per 1,000 hooks)
Swordfish	7512	21.530	56995	16.651
Albacore tuna	460	1.318	11108	3.245
Bigeye tuna	223	0.639	6085	1.778
Yellowfin tuna	18	0.052	1575	0.460
Pacific Bluefin tuna	11	0.032	60	0.018
Skipjack tuna	10	0.029	249	0.073
Unid. tunas and mackerels	5	0.014	107	0.031
Blue shark	5575	15.978	53947	15.761
Shortfin mako shark	249	0.714	2313	0.676
Unid mako sharks	33	0.095	123	0.036
Bigeye thresher shark	8	0.023	116	0.034
Pelagic thresher shark	0	0.000	6	0.002
Unid thresher sharks	0	0.000	23	0.007
Oceanic White-tip shark	0	0.000	559	0.163
Unid sharks	998	2.860	471	0.138
Striped marlin	12	0.034	2747	0.803
Blue Marlin	4	0.011	633	0.185
Black Marlin	1	0.003	7	0.002
Shortbill spearfish	0	0.000	435	0.127
Unid billfishes	12	0.034	66	0.019
Pelagic stingray	125	0.358	2259	0.660
Remora	21	0.060	4397	1.285
Longnose Lancetfish	235	0.674	4509	1.317
Snake mackerel	29	0.083	1632	0.477
Escolar	194	0.556	4472	1.307
Dorado	65	0.186	18793	5.490
Oilfish	86	0.246	935	0.273
Wahoo	7	0.020	412	0.120
Sickle Pomfret	0	0.000	365	0.107
Pacific Pomfret	30	0.086	58	0.017
Common Mola	51	0.146	157	0.046
Opah	36	0.103	232	0.068
Unid. fish	34	0.097	288	0.084

For the period February 1994 to January 2004, the SSLL fishery utilized pelagic longline gear consisting of, among other things, size 9/0 J-hooks with a mixture of squid, mackerel, and other bait types. For the period January 2004 to the present, new regulatory measures were put in place as bycatch mitigation measures in April 2004 (FR 17329) and the SSLL fishery utilized gear consisting of, among other things, large 18/0 circle hooks and mackerel-type bait. These gear differences should be kept in mind when considering the interaction and catch rate estimates presented for the species that may be taken in the proposed action.

Table 3–5. Total observed catch and CPUE for SSLL vessels using circle hooks and mackerel bait (after February, 2004) and those vessels using non-circle hooks and mixed baits (prior to February, 2004).

	Total Observed Catch for circle hook SSLL trips	Circle hook CPUE (No. per 1,000 hooks)	Total Observed Catch for non-circle hook SSLL trips	Non-circle hook CPUE (No. per 1,000 hooks)
Swordfish	36595	17.156	20167	15.637
Albacore	2255	1.057	8651	6.708
Bigeye tuna	3342	1.567	2741	2.125
Yellowfin tuna	348	0.163	1227	0.951
Pacific Bluefin	1	0.000	59	0.046
Skipjack tuna	140	0.066	107	0.083
Tunas and mackerels	32	0.015	75	0.058
Blue shark	26965	12.641	26532	20.572
Shortfin mako shark	1867	0.875	399	0.309
Unid mako sharks	115	0.054	7	0.005
Unid sharks		0.000	705	0.547
Bigeye thresher shark	52	0.024	64	0.050
Pelagic thresher shark	3	0.001	3	0.002
Unid thresher sharks	12	0.006	10	0.008
Oceanic White-tip shark	352	0.165	207	0.160
Striped marlin	1810	0.849	936	0.726
Blue Marlin	389	0.182	244	0.189
Black Marlin	1	0.000	8	0.006
Shortbill spearfish	245	0.115	190	0.147
Unid billfishes	38	0.018	28	0.022
Pelagic stingray	202	0.095	2035	1.578
Remora	920	0.431	3474	2.694
Longnose Lancetfish	2702	1.267	1786	1.385
Snake mackerel	685	0.321	946	0.733
Unid. fish	49	0.023	3	0.002
Escolar	3539	1.659	913	0.708
Dorado	7467	3.501	11319	8.776
Oilfish	488	0.229	443	0.343
Wahoo	159	0.075	253	0.196
Sickle Pomfret	285	0.134	76	0.059
Pacific Pomfret	0	0.000	58	0.045
Common Mola	21	0.010	134	0.104
Opah	176	0.083	51	0.040

Distant Water Foreign Longline Fisheries

Currently, Japan, Korea, and Taiwan, and to a lesser extent China, operate large, specialized, industrial longline fisheries for catching tunas and billfish, including swordfish throughout the Pacific Ocean. The HMS FMP/FEIS (PFMC 2003) provides an in-depth description of the areas fished and gear specifications for these fisheries. Catch and effort data for these fisheries, including logbook and some limited observer data, is maintained by the Regional Fisheries Management Organizations (RFMO) operating in the Pacific Ocean, the IATTC (www.iattc.org) and the Western Central Pacific Fisheries Commission (www.wcpfc.org). The majority of the catch and effort from these fisheries is significantly displaced from the proposed action area for the EFP and for the most part quantifiable bycatch information is not available for review.

3.3.1.2 Non-longline Fisheries

California/Oregon Swordfish/Thresher Shark Drift Gillnet (DGN) Fishery

Detailed descriptions of the DGN fishery can be found in the HMS FMP (PFMC 2003, Ch. 2 Pg. 13–Ch. 2 Pg. 17), in the Environmental Assessment for the Implementation of the Reasonable and Prudent Alternative on the Issuance of the Marine Mammal Permit under section 101(a)(5)(e) of the MMPA for the California/Oregon DGN, and in the Biological Opinion on the Authorization to Take Listed Marine Mammals Incidental to Commercial Fishing Operations.[4]

Currently, the DGN fishery is one of six West Coast HMS fisheries managed by the Pacific Council through the HMS FMP, with many of the existing state regulations and laws pertaining to the fishery adopted into the Plan. Historically, the California DGN fleet has operated within EEZ waters adjacent to the state to about 150 nmi offshore, ranging from the U.S.–Mexico border in the south to northward of the Columbia River (Figure 3–3), and as far north as the Columbia River during El Niño years.

Since 2001, an annual August 15–November 15 time/area closure (Pacific Leatherback Conservation Area) has been applied to the DGN fishery. This seasonal closure extends from the waters off of Monterey, California to the mid-Oregon coast and westward beyond the Exclusive Economic Zone (EEZ) to 129° West longitude (Figure 3–10). NMFS established the Pacific Leatherback Conservation Area because of the projected incidental take of leatherback sea turtles (*Dermochelys coriacea*), listed as endangered under the ESA. As a result of the closure, the majority of the current DGN fishing effort is concentrated in the Southern California Bight (Figure 2–1).

[4] Available at: http://swr.nmfs.noaa.gov/psd/codgftac.htm

Figure 3–10. The Pacific leatherback conservation area closed to DGN vessels, August 15 to November 15.

There are three general fishing areas targeted by the DGN fishery along the California coast, which are segregated by latitude and occupy areas of similar bottom depths. The southern area is centered off San Diego and is characterized by relatively shallow water in depths of less than 1,000 fathoms. This area is within the SCB and fairly close to the coast. The central area off of San Francisco is in deep waters in depths of 1,500–2,000 fathoms, with the northern area off the California/Oregon border in moderate depths of 1,600 fathoms. Fishing activity is highly dependent on seasonal oceanographic conditions that create temperature fronts that concentrate feed for swordfish. Because of the seasonal migratory pattern of swordfish and seasonal fishing restrictions, about 90 percent of the fishing effort occurs August 15 to December 31.

The DGN fishery typically begins in late May and continues through the end of January, although 90 percent of the fishing effort typically occurs from mid-August to the end of December. Effort in the fishery is initially concentrated in the southern portion of the fishing grounds, expanding to its full range by October before retreating back to the south because of the dissipation of oceanographic water temperature breaks caused by storm systems moving down from the north. However, the majority of fishing effort is concentrated south of Pt. Conception due to the turtle closure limitations. Some limited effort does take place to the south and west of the closure, in international waters off of Mexico and the U.S. EEZs, and north of the closure (Figure 3–10).

The highest catch of target swordfish occurs 15–150 km off the California coast. Fishing effort within 15 km of the coast or near the Channel Islands usually targets pelagic sharks. In higher latitudes, swordfish

catch and effort tend to be further offshore based on logbook and observer data. There are various time and area restrictions in place that limit the geographic extent of the fishery in addition to the leatherback time/area closure. These include State and Federal marine sanctuary boundaries and near-shore coastal zone restrictions. The near-shore restrictions address catches of species of concern, such as thresher sharks and gray whales, and mitigate recreational fishing industry concerns of excessive marlin bycatch in the DGN fishery.

The California DGN fishery is closed within 200 nmi of the coastline from February 1–April 30, inclusive, and drift gillnets are not permitted to take swordfish and shark within 75 nmi of the California coastline from May 1–August 14 between the westerly extension of Oregon-California boundary and the western extension of the U.S.–Mexico boundary. From August 15–January 31, swordfish can be taken within 75 nmi, pursuant to area restrictions specified in the CDFG Code and respective of any Federal protected species closures in place.

Table 3–6. Annual number of vessels, limited entry permits, and landings (round mt) for swordfish and common thresher shark in the DGN fishery (source: HMSMT 2005).

Year	Vessels (number)	Permits (number)	Swordfish Landings (mt)	Common Thresher Shark Landings (mt)
1981	118	-	270	917
1982	166	-	208	650
1983	193	-	242	421
1984	214	226	286	915
1985	228	229	197	1,095
1986	204	251	78	451
1987	185	218	6	393
1988	154	207	1	393
1989	144	189	-	460
1990	134	183	-	335
1991	114	165	51	569
1992	119	149	60	285
1993	123	117	162	245
1994	138	162	760	272
1995	117	185	682	207
1996	111	167	708	241
1997	108	120	655	249
1998	98	148	847	281
1999	84	136	585	152
2000	78	127	631	155
2001	69	114	351	273
2002	50	106	298	216
2003	43	99	198	241
2004	40	96	175	66
2005	42	90	182	155

Table 3–7. Catch rates in number of animals-per-100 sets for the target and major non-target species observed in the DGN fishery (North and South of Pt. Conception).

Data source: NMFS SWR observer records 1990–2005.

	Catch in numbers per 100 sets			
	All Years[a] North PC	All Years South PC	2001-2004[b] North PC	2001-2004 South PC
Bonito, Pacific	0.45	16.9	0	34.2
Fish, Unidentified	7.2	5.2	0	1
Hake, Pacific	7.9	0.69	1	0.3
Louvar	14.2	7	41.8	12.8
Mackerel, Bullet	1.8	66.1	0	4.5
Mackerel, Pacific	59.6	82.7	23.5	47.5
Marlin, Blue	0.04	1.1	0	1
Marlin, Striped	0.59	8.2	0	5.9
Mola, Common	453.8	664.3	878.6	745.6
Opah	36.7	64.9	30.6	61.8
Pomfret Pacific	15.2	1	39.8	1.4
Remora	2.5	0.9	0	0.8
Shark, Bigeye Thresher	7.1	6.1	0	6
Shark, Blue	461.4	176.6	312.2	129.5
Sharks, Common Thresher	53.1	84.5	63.8	73.6
Shark, Pelagic Thresher	0	1.8	0	0
Shark, Shortfin Mako	42.6	121	18.4	149.6
Stingray, Pelagic	1.5	6.3	0	6.5
Swordfish	292	142.5	298.9	156
Tuna, Albacore	487.6	49.5	1189.8	60.4
Tuna, Bigeye	0.3	0.3	0	0
Tuna, Bluefin	83.7	29.2	235.7	26.8
Tuna, Skipjack	121.8	122	27.6	149.4
Tuna, Yellowfin	1.2	10	0	19.4
Yellowtail	0.04	1.6	0	2.3

[a] For all years (1990-2005), the observed sets south of Pt. Conception equal 4,344 and north of Pt. Conception equal 2,862.
[b] For the time series 2001-2004, the observed sets south of Pt. Conception equal 1,121 and north of Pt. Conception equal 98.

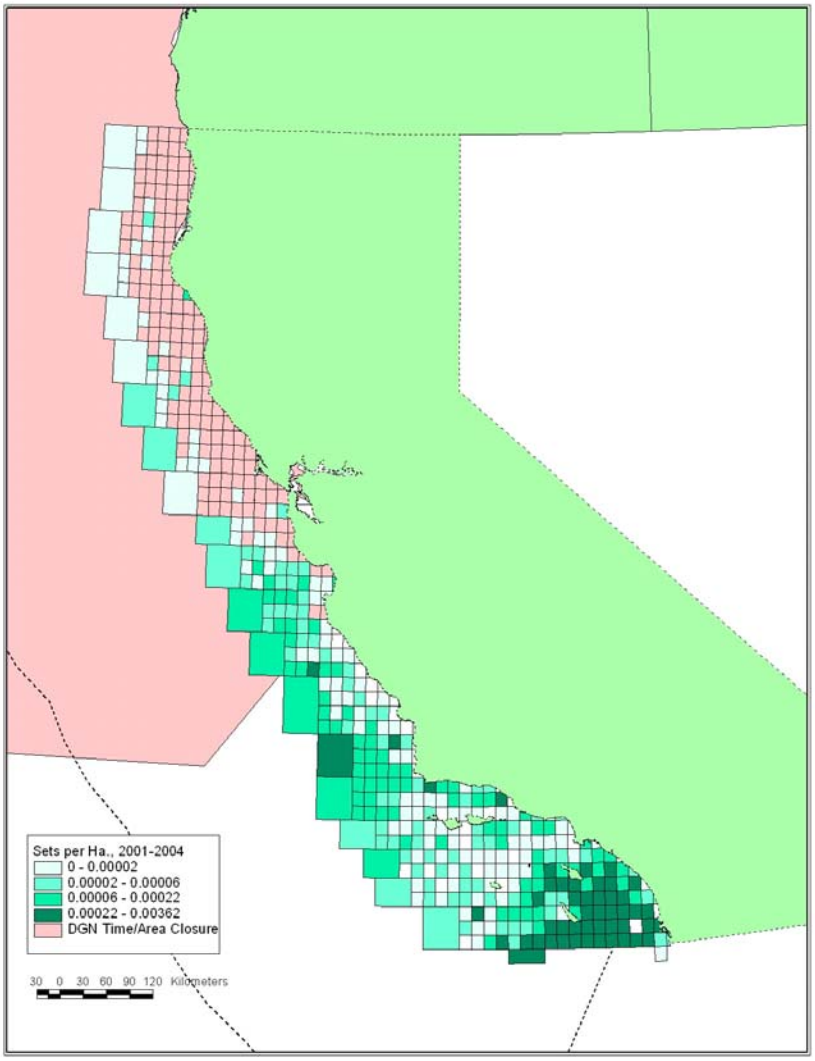

Figure 3–11. Spatial distribution of average annual DGN fishing effort (sets) for the years 2001–2004.

Source: CDFG fishing logbooks standardized by fishing blocks (sets/hectare). NOTE: The logbook data presented this figure shows only California fishing location information; however, there was some limited fishing effort north of California in Oregon and Washington during this time period (~7 percent of total sets).

West Coast harpoon fishery

The California harpoon fishery dates back to the early 1900s. The harpoon fishery used to account for the bulk of swordfish landings into California but was supplanted by the DGN fishery in the 1980s. Participation in the harpoon fishery peaked in 1978 with 309 vessels landing over 11,000 mt before being largely displaced by the more efficient DGN fishery (Leet, *et al.* 2001). Since that time, the harpoon fleet has declined substantially with 24 vessels landing 74 mt of swordfish in 2005. Fishing effort is concentrated in the coastal waters off San Diego and Orange Counties with peak landings in August (HMSMT 2006). This fishery is highly dependent on suitable environmental conditions to be able to locate and harpoon swordfish on the surface, and participation is not expected to change. Given the selective gear used in this fishery, bycatch is practically non-existent.

However, the Pacific Fisheries Information Network (PacFIN) landing records for harpoon-permitted vessels are confounded by gear code conflicts as many harpoon vessels carry DGN gear as part of a multiple fishery operation. The assumption is that landings are overestimated due to the gear code bias (A. Coan, NMFS, personal communication, Nov. 3, 2007). Harpoon landing and logbook records were analyzed for the time period 1969–1993 (Coan, *et al*. 1998). Noting the recognized shortcomings in logbook data estimates (e.g., reporting biases and gear code conflicts), a small amount of "other sharks" are reported as taken in the harpoon fishery, including mako sharks. In addition to the 74 mt of swordfish, PacFIN landings for harpoon gear in 2005 reported no thresher shark landed and a very small amount of mako shark landed (1,278 lbs.).

West Coast HMS recreational fisheries

Recreational anglers in California take many of the same HMS species that are caught in the SSLL and DGN fisheries. Fishing occurs in the EEZ waters of the U.S. as well as Mexico aboard commercial party fishing vessels (CPFV) and private boats. Fishery statistics are compiled by the Recreational Fisheries Information Network (RecFIN) and from CPFV logbooks required by State regulations and/or per HMS FMP regulations. Some limited observer data exists for HMS bycatch on recreational charter boat trips but the sample size is very small and was unavailable for review at the time of this assessment.

West Coast HMS CPFV fleet

Recreational anglers in California harvest swordfish primarily from private fishing boats with the occasional catch on CPFVs. In 2004, approximately two swordfish were caught and kept by recreational fishermen on board CPFVs fishing in the U.S. EEZ whereas in 2005 there was no catch reported for swordfish.[5]

With the exception of sharks, most HMS and non-target finfish are caught by anglers fishing from CPFVs based in Southern California and fishing primarily in the Mexican EEZ. In 2005, CPFV anglers fishing in Mexican waters landed 82,603 albacore, 4,949 bluefin, and 3,496 skipjack tuna based on CPFV logbook records. A total of 40 mako sharks and 14 unidentified marlin were also landed. In 2005, CPFV anglers fishing in the U.S. EEZ off California landed 15,625 albacore, 722 bluefin, and 2,212 skipjack tuna based on CPFV logbook records. A total of 121 mako sharks, 26 blue sharks, and four striped marlin were also landed.

West Coast HMS private boat fleet

For private boaters fishing in the U.S. EEZ, Title 14 of the CDFG Code limits the take of thresher sharks to two per day, but sport anglers may possess more than this limit depending on the length of the fishing trip. Fishing occurs in the EEZ waters of the U.S., primarily off the Southern California coast, as well as in Mexico. A typical fishing season for HMS species begins in the spring and continues to late fall depending on the oceanographic conditions present in a given year. Private anglers are not required to keep a daily fishing log on their vessels so catch estimates are based on California Recreational Fisheries Survey interviews of anglers returning to port. Generally, it is recognized that catch and effort estimates for the private anglers are underestimated due to the lack of sampler access to private marinas where many private vessels are berthed. In 2004, recreational anglers fishing from private boats in the U.S. EEZ caught approximately 4,000 thresher sharks, while in 2005 the catch dropped to 216.

Catch estimates for private boats are for vessels fishing exclusively in the U.S. EEZ. Many private vessels fish in the EEZ of Mexico but the number and catch by these vessels is unknown. In 2005, private boat anglers fishing in the U.S. EEZ off California landed approximately 5,000 albacore, 85 bluefin, and four

[5] Data source: California Commercial Fisheries Information System, CPFV logbook data.

skipjack tuna.[6] A total of 14,000 mako sharks and 15 blue sharks were caught with over 50 percent of the mako sharks released alive.

The average private boat recreational catch (in numbers) of common thresher for the period 2001–2004 is approximately 2,500 sharks (HMSMT 2005). The average weight for thresher shark captured in the recreational fishery was estimated to be 68 kg (C. Sepulveda, Pflegler Institute of Environmental Research, personal communication, Nov. 3. 2006). Therefore, the estimated take of thresher shark by the recreational fishery would equal approximately 170 mt (2,500 sharks x 68 kg./shark). A growing catch-and-release ethic has been practiced amongst private boat anglers and an unknown number of sharks are released alive back to the water. Estimates of post-release mortality are not known and additional research and monitoring efforts are needed.

The average recreational catch (numbers) of shortfin mako shark for the period 2001–04 is approximately 4,250 sharks (HMSMT 2005). Of this total, it is estimated that roughly half were released alive with an unknown survival rate. For the purposes of this EA, a conservative catch-and-release mortality estimate of 20 percent was applied to derive a total estimated take in the recreational fishery. For the time period 2001–2004, an average of 2,250 mako sharks per year were released alive (RecFIN data, HMSMT 2005). Applying a 20 percent mortality factor results in an estimate of take equal to 450 animals. The average weight for mako shark captured in the recreational fishery during the 2001–2004 time period was estimated to be approximately 20 kgs (C. Sepulveda, Pflegler Institute of Environmental Research, personal communication, Nov. 3, 2006). The estimated tonnage of mako shark taken by the California recreational fishery will therefore be reported as the sum of the landed tonnage (2,250 animals x 20 kgs. = 45 mt) and the estimate of mortality in the released catch (450 animals x 20 kgs. = 9 mt) for a total of 54 mt.

Blue sharks are targeted by private boat anglers using light tackle and captured incidentally by private anglers fishing for other HMS sharks. Most of the recreational shark trips are based out of Southern California and catch small blue sharks that average ~7 pounds. Since blue shark meat quickly ammoniates when killed, most if not all are caught and released with high survivorship assumed (C. Sepulveda, Pflegler Institute of Environmental Research, personal communication, Nov. 3, 2006).

California small mesh set net fishery

The small mesh set net fishery utilizes monofilament gillnets designed to capture halibut and Pacific angel shark. Incidental catches include thresher and mako sharks and a host of benthic marine organisms. Vessels used in the fishery are generally 25–40-ft in length, which is suited for inshore coastal operations. Fishing effort is concentrated off Santa Barbara and Ventura counties and around the northern Channel Islands, especially Santa Cruz and Santa Rosa Islands. A decline in landings occurred in 1991 when a voter initiative was passed banning the use of gill and trammel nets within three miles of the Southern California mainland coast and within one mile around the Channel Islands. Many gillnetters switched to other fisheries and a few dropped out entirely or retired (Leet*, et al.* 2001). In 1990, a total of 144 vessels landed angel shark and by 1994, the number was reduced 50 percent to 72. These boats landed 23 thousand pounds, a decline of 91 percent from the catch in 1990. For the period 2001–2004, an average of 76 vessels participated in the fishery averaging 4,782 days of combined effort. Logbook records of swordfish and thresher shark record 3,343 thresher shark caught (669/year) and 13 swordfish (4.3/year). Logbook records show two basking sharks and 16 great white sharks captured.

Logbook records of non-target catch for that time period are presented below in Table 3–8.

[6] RecFIN estimates of fewer than 1,000 fish are reported as less than 1,000 in the HMS SAFE documents due to the extrapolation uncertainty with the estimates (e.g., high percent error).

Table 3–8. Small mesh set gillnet logbook records for non-target finfish catch, 2001–2005.

Species	Total No. Reported	Avg. Reported/Year
Mako shark	1520	304
Blue shark	12 (2003 data only)	
Unid. shark	542	108
Albacore tuna	99 (98 in 2001, 1 in 2002)	
Bluefin tuna	35	9
Pacific mackerel	1058	353
Unid. Mackerel	3997	799
Louvar	9	3
Opah	20	4.5
pomfret	4 (2001 data only)	
Common mola	2 (2003 data only)	

During the 2005-2006 fishing season, NMFS observers monitored four set gillnet trips totaling 12 sets of effort. The catch of non-target HMS species included 10 common thresher sharks (all kept), 24 pacific mackerel (all discarded dead), one yellowtail (kept), and one bonito (kept).

California small mesh drift gillnet fishery

This fishery primarily targets white seabass, California barracuda, and yellowtail. Incidental catches include thresher, mako and blue sharks, and albacore, bluefin, and skipjack tuna. Except for a few directed tuna trips, which are now banned under the HMS FMP regulations, thresher and mako sharks make-up the majority of the incidental catch.

With the implementation of the HMS FMP, the small mesh drift gillnet and set gillnet fleets are not permitted to land swordfish as they did prior to the FMP. They are, however, permitted to land other HMS, with the restriction of ten (10) fish per landing of each non-swordfish HMS, including thresher sharks.

U.S. tuna purse seine fishery

There are two components to this fishery sector: large vessels (> 400 short tons carrying capacity) and small vessels (equal to or less than 400 short ton (st) carrying capacity). The large vessels usually fish outside U.S. waters and deliver their catch to foreign ports or transship to processors outside the mainland United States. The fleet of large vessels based on the West Coast and fishing in the Eastern Pacific has been greatly reduced over the past 20+ years with a single U.S. flagged vessel participating in the EPO fishery in 2005 (A. Routt, NMFS, personal communication, February 14, 2007). This vessel did not fish in the U.S. EEZ and bycatch data were not available for review.

The small vessel tuna purse seine fleet, based primarily in Southern California ports, is a multi-fishery fleet reliant primarily on coastal pelagic species (sardines, mackerel, and squid) and shifts to tuna when they are seasonally available. There are approximately 65 small purse seiners with limited entry permits under the Pacific Council's Pelagics FMP.[7] The coastal pelagic species fishery is under limited entry pursuant to the Council's FMP, although vessels could enter the seine fishery to target tunas as there is currently no limited entry program for purse seine vessels operating under the HMS FMP. A few vessels also may be able to arrange to catch bluefin for transfer to Mexican vessels for "grow out" facilities that have been established off Baja California. The ability of this market to handle large quantities is

[7] http://www.pcouncil.org/cps/cpsback.html

unknown. Thus significant growth in the U.S. purse seine fishery is not expected and declines seem more likely.

The landings of HMS in the small vessel tuna purse seine fishery have been declining for many years, and the recent closure of the last cannery that processed whole fish in California suggests that this trend will continue. Large effort shifts into the purse seine fishery for HMS are not anticipated. A total of 10 HMS permitted tuna purse seine vessels operated in 2005 landing 283 mt of yellowfin tuna, 522 mt of skipjack tuna, and 201 mt of bluefin tuna to Southern California ports (HMSMT 2006). Logbook data for this fishery has not been collected nor analyzed prior to the implementation of the HMS FMP; therefore, bycatch records from this reporting source are non-existent.

An HMS observer pilot program was instituted by NMFS in July 2004 for the small vessel purse seine fleet (coastal pelagic species (CPS) and tuna). The objective of the pilot program is to gather preliminary bycatch data and to derive an estimate of an appropriate future percent coverage, if warranted, for these fisheries. Prior to this pilot, anecdotal accounts indicate bycatch levels in both fisheries were relatively low. For the period July 2004–January 2006, NMFS observers monitored nine tuna purse seine targeted trips providing 15 sets of observed effort. A total of four blue sharks (one released alive, three discarded dead), and one common mola (released alive), were noted as catch of major non-target finfish species. For the period July 2004–January 2006, a total of 107 CPS trips carried NMFS observers with 228 sets of effort monitored. A total of two blue sharks (released alive), one common mola (released alive), three unidentified sharks (one released alive, two discarded dead), and one unidentified thresher shark (released alive) were noted for bycatch species that are also taken by the DGN fishery.

The proposed purse seine closure would apply to the U.S. tuna purse seine fleet, which consists of five to ten small vessels (carrying capacity below 400 short tons (363 mt)) and one to two large vessels (carrying capacity 400 short tons (363 mt) or greater). The large vessels usually fish outside U.S. waters and deliver their catch to foreign ports or transship to processors outside the mainland United States. The large vessels are categorized as large business entities (revenues in excess of $4 million per year). A large purse seine vessel typically generates 4,000–5,000 mt of tuna valued at between $4 and $5 million per year. The closure should not significantly affect the operations of the one to two large vessels because they are capable of fishing in other areas that would remain open. Also, the one to two large purse seine vessels do conduct fishing operations in other areas. The small vessels are categorized as small business entities (revenues below $4 million per year). These vessels fish out of California in the EEZ most of the year for small pelagic fish (Pacific sardine, Pacific mackerel) and for market squid in summer. Some small vessels harvest tuna seasonally when they are available. The proposed time/area closure will have no effect on small vessels because the small vessels do not have the endurance or markets to fish that far south for tunas on a regular basis.

HMS albacore troll and baitboat fleet

U.S. troll and baitboat vessels have fished for albacore in the North Pacific since the early 1900's using artificial lures with barbless hooks. A total of approximately 64,000 mt of albacore were harvested throughout the North Pacific in 2005, which is below the average annual catch of approximately 75,000 mt since 1952 (Childers and Aalbers 2006).[8] Japanese fisheries have traditionally caught the greatest amount of albacore within the North Pacific and account for approximately 73 percent of the total albacore landed by all fisheries (since 1952). The U.S. albacore fisheries annually catch approximately 21

[8] Electronic copies of summary reports from 1995 to 2005 are available on the World Wide Web at http://swfsc.nmfs.noaa.gov/frd/HMS/Large%20Pelagics/Albacore/albie01.htm.

percent of the total North Pacific albacore catch. An estimated 652 U.S. troll vessels fished in the 2005 North Pacific albacore fishery logging 25,252 days of fishing effort and landing 9,122 mt of albacore.

In recent years, the North Pacific albacore troll season started as early as mid-April in areas northwest of Midway Atoll. In July and August, fishing effort expands to the east, towards the west coast of North America (160° W longitude to 120° W longitude), extending from Southern California to Vancouver Island (32° N latitude to 55° N latitude). Fishing can continue into November if weather permits and sufficient amounts of albacore remain available to troll gear.

The HMS FMP requires all U.S. fishing vessels targeting albacore in the Pacific to submit copies of their daily fishing logbook to NMFS at the conclusion of each trip. Review of albacore troll logbook records for the time period 2001–2005, reveals minor amounts of HMS non-target species reported with 126 non-target catch records (Table 3–9) in comparison to an average yearly landing of target albacore of 1,711,805 fish. Most of the skipjack and other more tropical HMS species were caught by the offshore vessels while in transit from Samoa or Hawaii to the North Pacific fishing grounds (S. Aalbers, NMFS, personal communication, Nov. 5, 2006). The logbook reporting rate was 39 percent for the years 2001–2004 (i.e., prior to the implementation of the HMS FMP mandatory reporting requirement).

Table 3–9. Non-target finfish catch reported in albacore troll logbooks for the period 2001-2005.

Species	# Reported	# Kept	# Released
Bluefin tuna	26	21	5
Blue Shark	21		21
Mako Shark	10	4	6
White Shark	1		1
Skipjack tuna	1421	555	866
Bigeye tuna	6	6	0
Swordfish	2	2	0
Pomfret	9	9	0

NMFS recently instituted an albacore troll pilot observer program for the west coast and for the period January 2005–May 2006; seven trips and 69 days of fishing effort were observed by on-board government fisheries observers. The catch of major non-target finfish included two blue shark (one released alive, one unknown), one dorado (kept), three skipjack (all kept), and 18 unknown fish (most likely target albacore known as "poppers," which are fish that hit the jigs and are hooked but "pop off" prior to being landed).

Trawl and pot fisheries and other non-HMS fisheries

The HMS FMP final rule authorizes incidental commercial landings of HMS, within limits, for non-HMS gear such as bottom longline, trawl, pot gear, small mesh drift gillnet, set/trammel gillnets, and others.

For bottom longline (set line) fishery, landings are restricted to three HMS sharks, or 20 percent of total landings by weight of HMS sharks, whichever is greater. For trawl, pot gear, and other non-HMS gear, a maximum of 1 percent of total weight per landing for all HMS shark species combined is allowed (i.e., blue shark, shortfin mako shark, and bigeye, pelagic, and common thresher sharks) or two HMS sharks, whichever is greater.

The amount of HMS bycatch is assumed to be negligible in ocean salmon and groundfish fisheries based on anecdotal accounts and a cursory review of available observer records by target trip type. There have been some mixed landings of HMS and groundfish by commercial trawl vessels as well as HMS in commercial salmon troll fisheries, but evidence indicates these were probably mixed target trips. There is

also evidence that most significant landings of HMS in the salmon troll fishery are also mixed target trips. These seem to occur when albacore are close in and available to the salmon troll fleet. There have also been accounts of recreational salmon fishermen incidentally catching albacore, but these are rare events (J. DeVore, Pacific Fishery Management Council, personal communication, Nov. 15, 2006).

Illegal, unreported, and unregulated (IUU) fishing fleets

Despite the ban on high-seas driftnet fishing in the north Pacific Ocean in the early 1990s, fishing effort by IUU foreign fishing vessels continues to occur in the high seas zones throughout the Pacific Ocean. Anecdotal evidence, including photographs submitted by U.S. fishermen showing albacore tuna with net scars, demonstrate that albacore and possibly other HMS species are probably interacting with net gear deployed by IUU vessels. For most of these fishing fleets, little or no data exists regarding fishing effort or catch of marine species, including HMS. Without such information, it is impossible to assess the impacts of these fisheries on the major bycatch species included in this EA.

Fluctuations in the Ocean Environment

Large-scale environmental fluctuations are characteristic of all oceanic ecosystems and have significant effect on the distribution, movement, and habitat of all HMS-related species. Significant sources of inter-annual physical and biological variation are El Niño and La Niña events in the Pacific. Regime shifts (e.g., in the North Pacific) have also been identified as having impacts on both the physical and biological systems, with concurrent impact on the distribution of oceanic species. There is no evidence to suggest that populations of Eastern Pacific HMS are immune to these shifts. In fact, emerging evidence suggests that these environmental and climatological perturbations may have greater influence on the relative abundance of HMS (especially tuna) and related species (PFMC 2003).

While changes in the ocean environment affect HMS, implementation of the EFP is not expected to create a resource conservation concern for the major finfish target and non-target species projected to be taken as part of the EFP. The condition of the stocks and the major finfish bycatch species will be monitored continuously, and necessary actions will be taken to promote conservation and management through Pacific Council and NMFS oversight.

Current and Future Regulatory Regimes

There are a variety of evolving national and international legal instruments in force for the conservation and management of HMS. To a great extent these regulatory regimes are representative of species-directed fishery management policies which, more recently, are being questioned as effective at preventing undesirable changes in the marine ecosystem structure and function. General principles for oceanic ecosystem management tend to be theoretical at this juncture. The extent to which they can be implemented is unclear. Regardless, members of the IATTC and the newly established Western and Central Pacific Fisheries Management Commission are involved in implementation of a new international conservation arrangement for HMS in the Pacific. These arrangements will be intended to conserve the targeted species (mainly tuna) and related species, but if they fail, there could be adverse impacts on U.S. West Coast fisheries. At this point, there are no apparent conflicts between international management measures and the domestic measures proposed in this SSLL EFP.

The States of Washington, Oregon, and California have managed HMS fisheries in the past, continue to do so at the present time, and it is expected that these states will play a role in management of these fisheries in the future. NMFS anticipates that most of these regulations will continue to remain in effect and will be consistent with the goals and objectives of the EFP. In some cases, the FMP defers to the states' management programs, for example in the setting of recreational bag limits, licensing, and

reporting provisions. California has the most extensive set of HMS regulations on the West Coast due to the diversity of HMS fisheries based there.

The Western Pacific and North Pacific Fishery Management Councils have a management responsibility for U.S. HMS fisheries in other areas of the Pacific. Actions by these councils would impact HMS stocks and fisheries on the West Coast. There is a need to ensure coordination among the councils to achieve comprehensive management of HMS.

3.3.2 Current Stock Status of Target and Non-target Species

The HMS FMP (PFMC 2003, Ch.3, p.13) provides an overview of stock status for HMS management unit species up to the 2002 fishing season. The 2005 HMS Stock Assessment and Fishery Evaluation Report (SAFE) provides an updated status of the HMS management unit species, including target swordfish (HMSMT 2005, Ch. 5, p.103). Given the highly migratory nature of many of the HMS FMP management unit species, effective management can only be achieved with coordinated cooperation in the international arena. HMS stock assessments are periodically carried out by scientists from Pacific-based regional fisheries management organizations such as the IATTC and by the International Scientific Committee (ISC) for Tuna and Tuna-like Species in the North Pacific.

Stock status refers to the condition or health of the species (or stock) in the management unit. Status is usually determined by estimating the abundance (or biomass or yield) of the stock throughout its range and comparing the estimate of abundance with an adopted acceptable level of abundance (reference point). The HMS FMP (PFMC 2003, Pg. ES-5), as required by the MSA, establishes a level of biomass (or proxy) below which a stock is defined as being in an "overfished" condition and a level of fishing mortality above which "overfishing" is occurring. If overfishing is occurring, fishing levels must be reduced. Stocks that are overfished must be rebuilt to certain biomass levels within a certain time period. As required by the MSA, HMS stocks are to be managed to achieve optimum yield (OY). The HMS FMP (PFMC 2003, Ch 3, Pg. 9-32) provides a detailed description of overfishing criteria and default control rules.

3.3.2.1 Target Species: Swordfish (Xiphias gladius)

Swordfish occur throughout the Pacific Ocean between about 50° N latitude and 50° S latitude. They are caught mostly by the longline fisheries of Far East and Western Hemisphere nations. Lesser amounts are caught by gillnet and harpoon fisheries and are caught infrequently by recreational fishermen. The stock structure of swordfish is not well known in the Pacific. There are indications that there is only a limited exchange of swordfish between the EPO and the central and western Pacific Ocean. Hinton (2003) concluded that there are northern and southern stocks of swordfish in the EPO, with the boundary between the stock distributions occurring at 5° S latitude, and there may at times be some mixing of stocks from the central Pacific with the northeastern stock. The northeastern stock appears to be centered off California and Baja California, Mexico, recognizing that there may be movement of a northwestern Pacific stock of swordfish into the EPO at various times.

The lack of contrast in the standardized catch and effort series in the northern and southern regions of the EPO suggests that the fisheries that have been taking swordfish in these regions have not been of a magnitude sufficient to cause significant responses in the populations. In addition, catches in the region have been fairly stable since 1989, averaging about 3,700 mt in the northern region and 8,400 mt in the southern region annually. Based on these considerations, it appears that swordfish are not overfished in the northern and southern regions of the EPO (Hinton, *et al.* 2004). Swordfish stocks have not been

declared overfished or undergoing overfishing nor are there currently quotas or harvest guidelines in place under the HMS FMP.

Recent ISC analyses of swordfish stocks in the North Pacific (north of 10° N latitude and west of 130° W longitude), based on CPUE indices from Japanese longline vessels, show declining trends (ISC, 2004b). These trends are mainly driven by declines in the northwest portion of the study area (north of 10° N latitude and west of 170° E longitude) and their proximate cause is not known at present (e.g., changes in stock abundance, environmental variability, and/or fishing practices).

3.3.2.2 Current Stock Status for Major Non-Target Species Catch

Overview

For the purposes of this EA, non-target catch includes incidental catch retained for personal use and/or sale, and catch that is discarded, whether it's dead or alive. These discards, also referred to as bycatch, include both economic discards (e.g., blue sharks) and/or regulatory discards (e.g., protected species). Although the MSA defines bycatch, in terms of practical use, the definitions for terms such as bycatch, discards, and incidental catch are not standardized for the most part across fisheries. For the purpose of this EA, NMFS will use the umbrella term "non-target catch" to avoid confusion.

The stewardship responsibilities of NMFS to lead and coordinate the nation's collaborative effort to monitor and reduce the bycatch of living marine resources are identified in the MSA, the ESA, the MMPA, the Migratory Bird Treaty Act, and in international agreements. As part of its efforts to meet these responsibilities, NMFS reported on the scope and complexity of bycatch in the United States and approaches to addressing bycatch problems. In early 2003, NMFS developed a National Bycatch Strategy to monitor and mitigate bycatch within the Nation's fisheries. As part of that strategy, a National Working Group on Bycatch was appointed to formulate procedures for monitoring bycatch, in particular, to provide information that could be used to develop standardized bycatch reporting methodologies (NMFS 2004).

Major versus Minor Non-Target Finfish Species

For the purposes of this EA, the assessment of catch rates and impacts are reported and analyzed for those species that were captured in quantities greater than 0.05 animals per 1,000 hooks observed and/or likely to be encountered in the proposed action area (i.e., some of the tropical species like oceanic whitetip sharks, lancet fish, snake mackerels, blue and black marlins, and wahoo are not included). Species referred to as major non-target species include, among others, blue, mako, and thresher sharks, escolar, pelagic stingrays, dorado (mahi-mahi), striped marlin, pomfrets, remoras, and tunas (Tables 3–5, 3–6). The species captured in quantities less than 0.05 animals per 1,000 hooks observed did not, for the most part, involve species for which there are pressing resource conservation concerns, given their infrequent capture in the SSLL fishery. These are referred to as minor non-target species. This tabulation is based on SSLL fishery observer records from 1994-2006, which include the baseline period under review here. Several minor non-target finfish are included for review under the major non-target category due to their status as HMS management unit species or their likelihood of being captured in the proposed action area based on DGN observer records (e.g. striped marlin, common thresher shark, common mola and dorado (mahi-mahi).

Status of Major Non-target Tunas

Five commercially important tuna species, albacore, yellowfin, bigeye, skipjack, and bluefin tuna, are taken as non-target tuna catch in the SSLL fishery operating outside of the U.S. EEZ. With the exception

of albacore, the tropical tunas are not considered a major non-target catch but are reviewed here given their economic importance and relevance to domestic and international fisheries and resource management.

North Pacific albacore (*Thunnus alalunga*) (Stocker 2005)

Stock status of North Pacific albacore is reviewed at one- to two-year intervals by the North Pacific Albacore Working Group of the ISC (formerly, the North Pacific Albacore Workshop) with participating members from the United States, Mexico, Canada, Japan, and Taiwan. The latest assessment was conducted in December 2004. Estimated stock biomass decreased from about 360,000 mt in 1975 to about 270,000 mt in the late 1980s. Stock biomass then increased to a peak of roughly 460,000 mt by the early 2000s and has remained at that level to date, likely due, in large part, to improved recruitment. The point estimate of the 2004 stock biomass was roughly 429,000 mt ranging from 329,000 to 563,000 mt. Spawning stock biomass had experienced slight fluctuations since the late 1970s but generally has remained relatively stable at roughly 90,000 mt over the last two decades. Since 1990, the population has been in a high productivity phase whereas in the late 1970s and throughout the 1980s it was experiencing low productivity. The estimated fishing mortality in 2004 was high relative to commonly used reference points, and may be cause for concern regarding the current stock status of North Pacific albacore.

Since the mid-1970s, the U.S. component of the overall pan-Pacific Ocean catch is estimated at roughly 15 percent. Albacore troll boats account for nearly all the West Coast catch. Currently there are no quotas or harvest guidelines established for north Pacific albacore catch under the HMS FMP. The next formal assessment is scheduled for November/December 2006 with the report expected to be available during spring 2007.

Pacific bluefin (*Thunnus thynnus* orientalis) (ISC 2006)

Stock status of Pacific bluefin is reviewed at one- to two- year intervals by the Bluefin Working Group of the ISC. The latest assessment was conducted in January 2006, but the results were not sufficient to determine stock status. Nevertheless, results from the multiple models provided some common conclusions: (1) biomass has local peaks in the late 1970s and late 1990s, with a decline after the second peak; (2) recruitment in recent decades has varied considerably, and the 2001 year class appears to be strong; and (3) there is no evidence of recruitment failure in recent years (ISC 2006). The latest assessment, consistent with the 2004 assessment, demonstrates that current fishing mortality rates likely exceed F_{max}. Noting the uncertainty in the assessments, the ISC Plenary recommended that bluefin tuna fishing mortality not be increased above recent levels as a precautionary measure.

North Pacific bluefin probably constitute a single north Pacific-wide stock with trans-Pacific migratory patterns. Most of the Pacific-wide catch occurs in the Western Pacific. The U.S. West Coast catch is taken primarily by purse-seiners operating off Southern California and Baja California, Mexico, mainly between spring and fall and within 100 mi of shore. In the Eastern Pacific, bluefin taken are nearly always immature (ages 0–2) (reference?). Catch by U.S. West Coast fisheries constitutes 2–3 percent of the Pacific-wide catch.

Skipjack *(Katsuwonus pelamis)* (Maunder and Harley 2004, as in 2005 SAFE)

Stock status of skipjack tuna in the eastern Pacific is assessed every 1–2 years by the IATTC. The latest assessment was conducted in 2004. The assessment was considered preliminary because of uncertainties about stock structure, the vulnerabilities of all age classes, and how well fishery catch/effort data tracks abundance. The analysis indicated that a group of relatively strong cohorts entered the fishery in 2002–2003 (but not as strong as those of 1998) and that these cohorts increased the biomass and catches during

2003. There is an indication the most recent recruitments are average, which may lead to lower biomass and catches. Unfortunately, it was not possible to estimate the status of the stock relative to AMSY (average maximum sustainable yield), a commonly used reference point for management, because of uncertainties in estimates of natural mortality and growth.

In 2006, a full assessment was not conducted, however an analysis of skipjack CPUE was performed which was consistent with the previous assessment (Maunder and Hoyle 2006). Thus the IATTC concluded that there was not a conservation concern for skipjack in the Eastern Pacific and did not recommend that management was necessary.

Skipjack tuna are taken throughout the Pacific, primarily by purse-seiners, but also by baitboat fishers. In the Eastern Pacific, there are two major fisheries, one off Central and South America, and one off North America in the waters off Baja California, Mexico, the Revillagigedos Islands, and near Clipperton Island. The U.S. West Coast catch constitutes less than one percent of the total Eastern Pacific catch.

Yellowfin (*Thunnus albacares*) (From IATTC 2006)

Stock status of yellowfin tuna in the Eastern Pacific is assessed every 1–2 years by the IATTC. The latest assessment was conducted in 2006 and is based on the assumption that there is a single stock of yellowfin tuna in the EPO, although it is likely that there is a continuous stock throughout the Pacific Ocean. Based in part on the most recent stock assessment results NMFS has determined that EPO yellowfin tuna stocks are subject to overfishing. Fishing is concentrated in the east and the west making separate consideration of the EPO stock relevant for management purposes.

The 2006 base case assessment, which does not include a stock-recruitment relationship, indicates that the spawning stock size has declined from a high point in 2001 to about the level corresponding to the average maximum sustainable yield (AMSY). The fishing mortality rate in the most recent years for which there are good estimates, 2003-2004, is near to that corresponding to the AMSY.

There was an increase in recruitment and stock size after 1985 which has for 20 years been attributed to an environmental change that led to greater spawning biomasses, rather than to dependence of recruitment on spawning stock size. Nevertheless, it is possible that this interpretation is wrong and that the increase after 1985 was related to a stock-recruit relationship with steepness significantly less than one. If that were the case, the stock would currently be overfished, and the fishing mortality would need to be reduced by about 40 percent to bring it to the level corresponding to the AMSY.

Regardless of the recruitment, the total catch and stock size could be increased if the average size of the yellowfin in the catch were increased. In the EPO, the longline fishery catches the largest fish, but takes less than five percent of the total catch. The purse-seine fishery takes yellowfin of a wide range of sizes, depending on set type. Increasing the proportion of the catch made by longlines or by purse-seine sets on tunas associated with dolphins would increase the sustainable yields and the biomass. Thus, the IATTC recommended that the period during which purse-seining is allowed (46 weeks) should be reduced accordingly. Catch of yellowfin tuna by U.S. West Coast fisheries constitutes less than one percent of the Eastern Pacific-wide catch.

Bigeye (*T. obesus*) (From IATTC 2006)

Stock status of bigeye tuna in the Eastern Pacific is assessed every 1–2 years by the IATTC. The latest assessment was conducted in 2006 and is based on the assumption that there is a single stock of bigeye tuna in the EPO. Based in part on the most recent stock assessment results, NMFS has determined that BET tuna stocks are subject to overfishing.

The stock assessment results are generally similar to those of previous assessments, except that the previously-reported decline has been interrupted by above-average recruitment in 2001 and 2002. The stock is currently below the AMSY level, but if recruitment is maintained at the levels estimated for the last 30 years, it is expected to increase to the level corresponding to the AMSY in 2007, and subsequently decline. The base case assessment, which assumes no stock-recruitment relationship, estimates that the fishing mortality rate corresponding to the AMSY is 68 percent of the fishing mortality rate during 2003-2004.

The estimated AMSY is 106,000 mt, and with the recent mix of purse-seine and longline fishing, 46,000 mt would be taken by the purse-seine fishery and 60,000 mt by the longline fishery

The IATTC recommends that further measures are necessary to allow the stock to be maintained at or above the AMSY level. The AMSY has been significantly reduced by purse-seine catches of small bigeye, and measures that encourage purse-seine vessels to avoid catching bigeye while fishing for skipjack would be beneficial. The fishing effort should be reduced by 32 percent relative to that of 2003-2004. To offset the increase in the carrying capacity of the purse-seine fleet since 2004, the total reduction for purse-seine vessels should be 38 percent. In addition, they recommend that longline catch limits be reduced to 94 percent of those currently in place. Catch of bigeye tuna by U.S. West Coast fisheries constitutes less than one percent of the Eastern Pacific-wide catch.

Status of Major Non-Target Sharks

As with the rationale presented for delineating between major and minor non-target tuna catch, a similar approach is applied here for the shark species taken in the SSLL fishery. The focus of the analysis will be on the major non-target shark species, namely blue sharks and shortfin mako sharks. For all sharks in the management unit, the HMS FMP establishes that OY be set at 75 percent of MSY, because these species have low productivities and are vulnerable to overfishing. Status of the common thresher shark will be included in this section even though this species is considered a minor non-target species; stocks of the common thresher shark and shortfin mako shark are being managed using precautionary harvest guidelines under the HMS FMP. Basic population dynamic parameters for these shark species are poorly known, and they are considered vulnerable given their life history characteristics (slow growth, late maturing, and low fecundity). A harvest guideline is a numerical harvest level that is a general objective and is not a quota. A quota is a specified numerical harvest objective, the attainment of which triggers the closure of the fishery or fisheries for that species. If a harvest guideline is reached, NMFS initiates review of the species' status according to provisions in the HMS FMP and in consideration of Council recommendations. Annual estimates for catch levels of common thresher shark and shortfin mako shark have been at about the level of the harvest guidelines for the time period 2001-2005.

Blue shark *(Prionace glauca)* (Kleiber, *et al.* 2001)

Blue sharks are found world-wide in temperate and tropical pelagic waters but have been known to frequent inshore areas around oceanic islands and locations where the continental shelf is narrow. In the Eastern Pacific, blue sharks range from the Gulf of Alaska down to Chile, migrating to higher latitudes during the summer and lower latitudes during the winter.

Within the U.S. West Coast EEZ, blue sharks are entangled in pelagic drift gillnet gear, but rarely taken by other commercial HMS gears. On the high-seas, blue sharks are caught with longline gear in the Hawaii-based SSLL fishery and the California-based SSLL fishery prior to its closure. In addition, blue sharks are caught in the deeper set tuna longline fisheries. Most commercially-caught blue sharks are considered undesirable bycatch, since the meat quickly ammoniates, reducing marketability. As with

several other shark species, the fins of blue sharks are sold to Asian markets for use in shark-fin soup. However, since implementation of the U.S. Shark Finning Prohibition Act which prohibits landing shark fins without accompanying carcasses, blue sharks are rarely landed or marketed when taken in U.S. commercial fisheries. Recreationally, blue sharks are considered a sport fish and larger individuals provide a challenge for fishermen using light tackle. Because most of the recreational shark trips are based out of Southern California, and the average blue shark size is small (seven lbs), blue sharks are often caught and released in this fishery. The blue shark is currently listed as "near threatened" by The World Conservation Union (IUCN).

For the North Pacific blue shark population, a range of examples of what might be considered "plausible" Maximum Sustainable Yield (MSY) were calculated in 2001 (Kleiber*, et al.* 2001). The data on which the analysis were based consisted of catch, effort, and size composition data collected during the period 1971–1998 from commercial fisheries operating in the North Pacific west of 130° W longitude, primarily the Japan and Hawaii-based pelagic longline fisheries, which catch significant numbers of blue sharks. The results indicated that the blue shark stock, under the fishing regime present at that time in the North Pacific, appeared to be in no danger of collapse. An updated analysis covering the same spatial area and which included data through 2003 was recently completed and produced results similar to the previous assessment, namely that blue sharks in the North Pacific are not suffering overfishing nor approaching an overfished state (Sibert, *et al.* 2006).

Shortfin mako shark *(Isurus oxyrinchus)* (from PFMC 2003)

The shortfin mako shark occurs throughout the tropical and temperate Pacific but is not managed internationally. The mako is widely distributed in pelagic waters, and the population fished off the West Coast is likely part of a stock that extends considerably to the south and west. Although makos are most frequently found above the mixed layer, they have been recorded down to depths of 740 m. Tagging and fishery catch data show makos prefer water temperatures between 17–20° C, and it has been hypothesized this species migrates seasonally from the coast of California along the Baja peninsula following favorable seasonal water conditions (Cailliet and Bedford 1983). This movement pattern has been supported by tag and release studies. West Coast commercial fisheries take mainly juveniles, with an average dressed weight of 34 lb. (Leet*, et al.* 2001). Shortfin mako constitutes an important incidental catch whose market quality and ex-vessel value make it an important component of the landed catch of the DGN fishery (Cailliet and Bedford 1983; Holts and Sosa-Nishizaki 1998).

Shortfin mako is an important component of California's ocean recreational fishery. The majority are caught by anglers fishing with rod-and-reel gear from private vessels in the Southern California Bight from June through October, with a peak in August. Historically, makos have been esteemed as a prized game fish along the East Coast of the United States. During the early 1980s, they increased in prominence as a popular game fish, and annual catch estimates peaked in 1987 at 22,000 fish. Since 2001, annual catch estimates have ranged from 2,000–6,000 fish, with a percentage of sharks successfully released by Southern California fishermen favoring catch-and-release versus harvest (C. Sepulveda, Pflegler Institute of Environmental Research, personal communication, Nov. 6, 2006).

Because basic population dynamic parameters for this species of shark are unknown, it is being managed under the HMS FMP with a precautionary harvest guideline of 150 mt. Clear effects of exploitation have not been shown, and the local stock tentatively is assumed to not be experiencing overfished. The IUCN currently lists the shortfin mako as "Near Threatened" due to a lack of evidence that population levels have been sufficiently depleted to warrant a "Vulnerable" status.

Common thresher shark (*Alopias vulpinus*)

The common thresher shark is a pelagic species inhabiting both coastal and oceanic waters throughout the tropical and temperate Pacific. Most West Coast commercial landings of common thresher are presently taken in the DGN fishery, but some are also caught by set nets and the small-mesh drift nets. Adults are predominantly taken in the DGN fishery while the inshore net fisheries land predominantly juveniles. Although temporal and regional closures have resulted in the take of fewer adults than in previous years, the common thresher remains an important component of the DGN fishery. Common thresher populations off Baja California are thought to be of the same population as those fished off the U.S. West Coast (Hanan*, et al.* 1993). Common thresher sharks are not commonly taken in the shallow set longline fisheries outside the U.S. EEZ, however, they have occasionally been caught during fishery independent longline surveys and in a small scale longline fishery for mako sharks which operated within the U.S. EEZ from 1988-91 (O'Brien and Sunada 1994) demonstrating that they are vulnerable to longline gear.

Common thresher sharks are harvested in California's recreational fishery, but are a relatively minor component of the overall total catch. Private boaters catch thresher sharks as they migrate from Baja California, Mexico, to Oregon and Washington in the spring and early summer months. From 1982–2004, private boaters caught on average 2,000 fish annually. Since 2001, annual catch estimates have ranged from 2,000–4,000 fish (Table 3–2). However, some uncertainty exists with these catch estimates due to a low number of sampler contacts with fishers.

Thresher sharks are often hooked on the upper lobe of the caudal fin, which is used to stun prey. Catch-and-release mortality is assumed higher for sharks hooked and fought in this fashion (C. Sepulveda, Pflegler Institute of Environmental Research, personal communication, Nov. 6, 2006). The estimates of fishing mortality or recreational landings for the common thresher shark in California are considered underestimated and additional monitoring is needed. Similarly, little is known about the take of common thresher sharks in fisheries off Mexico because shark landings are not routinely reported by species, and the pelagic thresher shark is also common off Mexico.

Status: The thresher shark is considered a "data deficient" species by IUCN worldwide. However because of population depletion by the U.S. west coast drift gillnet fishery in the 1980s, the California population is considered "near-threatened" (Goldman 2005). .

With state-imposed time and area restrictions in place for the DGN fishery since 1990, the population appears to be in recovery; however, because this stock is also harvested by the adjacent Mexican fishery, total annual landings are not well understood for this species. A regional harvest guideline of 340 mt is in place under the HMS FMP. Average annual commercial catch levels for the common thresher shark during the time period 2001–2005 averaged 254 mt.

Status of Major Non-Target Billfish

Striped marlin

Stock status of striped marlin (*Tetrapturus audax*) in the Eastern Pacific is assessed regularly by the IATTC. The latest assessment was conducted in 2003. The Marlin Working Group of the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC) also has conducted preliminary analyses of North Pacific striped marlin population status, with their first comprehensive assessment expected in March 2007. The stock structure of striped marlin in the Pacific Ocean is not well known. An analysis of trends in catches per unit of effort in several sub areas suggest that the fish in the EPO constitute a single stock thus that is an assumption of the IATTC assessments.

Striped marlin occur throughout the Pacific Ocean between about 45° N and 45° S latitudes. They are caught mostly by the longline fisheries of the Far East and Western Hemisphere nations. Lesser amounts are caught by recreational, gillnet, and other fisheries. The HMS FMP prohibits commercial take of striped marlin, however there is a small seasonal recreational fishery for striped marlin in the Southern California Bight in the late summer months. Similarly, in Mexico, commercial take of striped marlin is prohibited within 50 mi of the coast to provide opportunities for recreational anglers.

Standardized catch rates were obtained from a general linear model and from a statistical habitat-based standardization method. Analyses of stock status made using two production models, taking into account the time period when billfish were targeted by longline fishing in the EPO, were considered the most plausible. A Pella-Tomlinson model yielded estimates of the AMSY in the range of 3,700–4,100 t, with a current biomass being about 47 percent of the unfished biomass. The current biomass is estimated to be greater than the biomass that would produce the AMSY. An analysis, using the Deriso-Schnute delay-difference model, yielded estimates of AMSY in the range of 8,700–9,200 t, with the current biomass greater than that needed to produce the AMSY and about 70 percent of the size of the unexploited biomass.

A preliminary analysis of the status of a hypothesized stock of striped marlin spanning the north Pacific was conducted by the ISC in 2005. The results of all assessment models indicated that biomass has been reduced. For models that provided estimates of current biomass relative to starting biomass, the results indicated the population has declined to 10–45 percent of the initial biomass. In contrast, "splitting" the abundance series in the mid 1970s, and assuming that this represented a change in targeting, indicated a more optimistic view (current biomass above biomass at AMSY). While the results of these analyses are considered provisional, the ISC recommended that fishing mortality for striped marlin in the north Pacific not be permitted to exceed current levels.

The results of the EPO and North Pacific assessments of stocks are consistent. The stock of striped marlin in the EPO is probably in good condition, at or above the AMSY level.

The catches and standardized fishing effort for striped marlin decreased in the EPO from 1990–1991 through 1998, and this decline has continued, with the annual catches during 2000–2003 between about 2,000–2,100 t, well below estimated AMSY. This may result in a continued increase in the biomass of the stock in the EPO.

Status of Major Non-target Finfish

Dorado (*Coryphaena hippurus*)

Dorado are predominantly a warm water tropical species that are seasonally abundant in the SCB most likely from populations reproducing off Baja California, Mexico. Catch estimates from international fisheries are poorly documented due in part to the artisinal fishing nature of this fishery and due to the lack of bycatch monitoring programs. West coast fishermen access the northern range of the species and there are no HMS FMP harvest guidelines recommended at this time (NMFS 2003). The total landings for all of the U.S. Pacific coast commercial fisheries in 2003 and 2004 were 6 and 1 round mt respectively. This species is more important in the recreational fishery with an average of 912 fish caught annually along the Pacific coast (PFMC 2006).

Dorado are fast-growing and highly productive species with a short life span of 2-4 years and the ability to rebound relatively quickly from exploitation. Females mature at 4-7 months and spawning can occur all year long in the tropics. The high adult mortality rates may limit the resiliency of this species (NMFS

2003). Dorado from the eastern Pacific Ocean feed during both day and night and dominant prey species vary by location (Olson and Galvan-Magana 2002).

Pelagic stingray (*Pteroplatytrygon (Dasyatis) violacea*)

The pelagic stingray is found worldwide in latitudes spanning tropical to temperate waters. This species is small reaching a maximum size of 80 cm (disc width) and sexual maturity occurs at an average 37.5 cm in males and an average of 50 cm in females. There is evidence suggesting that the eastern Pacific population migrates to the warmer waters off Central America during the winter. Females give birth in the warmer waters before migrating to higher coastal latitudes such as along the Southern California Bight. This species is commonly found within the top 100 m in deep, blue water zones and are often caught as bycatch in longline and drift gillnet fisheries targeting HMS (Mollet 2002).

Escolar (*Lepidocybium flavobrunneum*)

The black escolar occurs throughout the world's oceans and are distributed between 40º N and 40º S latitudes. Biological information is lacking for the Pacific populations. Daily catch and fishing effort data was used to determine escolar population structure for the southwestern Atlantic Ocean (SAO). In the SAO black escolar is taken as incidental catch when longlining for tuna and swordfish. It was found that the intra-annual catch patterns for the black escolar were similar to those of the target species. This suggests that escolar have similar trophic and reproductive behavior as tuna and swordfish. Highly productive oceanic fronts that are developed in winter and spring attract pelagic species that feed on squid and anchovy. Catches are lower in the summer when presumably escolar are migrating to lower latitudes to reproduce (Milessi and Defeo 2002). In California escolar were the third highest species caught in the pelagic longline fishery with 132 total fish along with 504 swordfish and 459 blue sharks in 2001-2002. Catches of escolar declined slightly throughout 2002-2004 (PFMC 2006).

Common mola (*Mola mola*)

Common mola, also known as ocean sunfish, are a seasonally common inhabitant of southern Californian waters. Presently, very little is known about the habitat preferences or behavior of ocean sunfish but prevailing thought is that molas associate with frontal and stratified water masses rather than in cooler, mixed water (Cartamil and Lowe 2004; Sims and Southall 2002). Key aspects of their biology are largely unknown, such as annual movements and the mode and location of breeding. With respect to mola migrations into the Southern California Bight, peak abundance occurs off of Catalina Island in late September and early October, coinciding with peak water temperatures (D. Cartamil, personal communication, 2006).

Research in the Atlantic suggests that the larger part of their lives may be spent in deep water, although they are thought to undertake seasonal inshore migrations (Fraser-Bruner 1951; Lee 1986). This is especially important in some regions, like the Mediterranean, where molas can constitute 70–95 percent by number of driftnet catches (Silvani, *et al.* 1999). Mola catches in the DGN fishery for the years 2001–2004 make up 30–44 percent of the total catches by number, north and south of Pt. Conception respectively. There is scant information available on the population dynamics for this species.

Pacific pomfret *(Brama japonica)*

The Pacific pomfret is an oceanic species distributed from Southern California to the Gulf of Alaska, Aleutian Islands, and to the Pacific Coast of Japan. The southern limit to their distribution appears to be about 20° N latitude where surface water temperatures exceed 70° F. They are pelagic and found in near-

surface waters to depths of 50 fathoms. Distribution (north-south as well as vertical) seems to be strongly controlled by temperature; they are usually found in water temperatures between 50°–66° F (McCrae, 1994). Squid, fish and crustaceans are the most common food items. Sharks and some species of whales may be the major predators of Pacific pomfret. Maximum size is about 62 cm with most fish caught n the 30–50 cm length range and estimated to be 4–6 years old. Large fish are generally found farther north than smaller fish that stay in the more southerly waters during the summer and not migrating north. Pomfret have been a large component of the bycatch in the Asian drift gill net fisheries for flying squid and gill net and purse-seine fisheries for salmon in Alaska. The estimated catch of Pacific pomfret in the squid fisheries in 1990 and 1991 was 1,329 million and 82 million fish, respectively (McCrae, 1994). There is no recreational fishery for pomfret.

3.3.3 Status of Prohibited Species

Any HMS stocks managed under the HMS FMP for which quotas have been achieved and the fishery closed are deemed prohibited species. In addition, Table 3–10 lists the prohibited non-HMS species designated under the HMS FMP. In general, prohibited species must be released immediately if caught, unless other provisions for their disposition are established, including for scientific study.

Table 3–10. HMS FMP Prohibited Species.

Common Name	Scientific Name
Great white shark	*Carcharodon carcharias*
Basking shark	*Cetorhinus maximus*
Megamouth shark	*Megachasma pelagio*
Pacific halibut	*Hippoglossus stenolepis*
Pink salmon	*Onchorhynchus gorbuscha*
Chinook salmon	*O. tshawytscha*
Chum salmon	*O. keta*
Sockeye salmon	*O. nerka*
Coho salmon	*O. kisutch*

3.3.3.1 Salmon

The Chinook (king) and coho (silver) salmon are the main salmon species taken in west coast ocean fisheries, mainly with troll gear. Sockeye, chum, and steelhead are rarely caught in these fisheries. Distribution of the prohibited salmon species range from Japan to the Bering Sea and south to San Diego, California, although most occur north of Santa Cruz, California. In recent years, because of the critically low population sizes of some salmon stocks and threats to their continued existence, certain stocks in California and Oregon have been listed as endangered or threatened species under the ESA. **There have been no recorded interactions of listed or non-listed salmon stocks with the SSLL fishery or the DGN fishery.** The proposed action should also not have any interactions.

3.3.3.2 Great White Shark

The great white shark is an oceanic and coastal inhabitant ranging in the eastern Pacific from the Gulf of Alaska to the Gulf of California, although it appears to prefer temperate waters (Eschmeyer*, et al.* 1983). As a large, true apex predator, this species is relatively rare. This shark commonly patrols small coastal archipelagos inhabited by pinnipeds (seal, sea lions, and walruses); offshore reefs, bank, and shoals; and rocky headlands where deepwater lies close to shore. Its low productivity and accessibility in certain

localized areas make it especially vulnerable. Overall population estimates for this species are unknown and even regional and localized estimates are questionable.

Adult great whites sighted off Northern California most likely originate from Southern California. The northward migration may be triggered by a shift in dietary preference toward seals and sea lions as the sharks grow large (Klimley 1994). Large males and females tend to be captured along the northern coast, while juveniles as well as large females are generally found to the south. This species has been prohibited by the State of California since 1995, where it may not be taken except for scientific and educational purposes under permit. The HMS FMP adopts the state measures across the board. At present, the great white shark is listed as "vulnerable" by the IUCN throughout its range, and is now protected in some regions.

In 2004, the Convention on International Trade in Endangered Species (CITES) placed this shark on its Appendix II list, which demands tighter regulations and requires a series of permits that will control the trade in white shark products.

There have been three recorded interactions with the DGN fishery (NMFS Southwest Region (SWR) Observer Program records, one in December 1996 and two in September 1997). Two were retained as incidental catch and one was discarded dead. **There has been one recorded interaction of a great white shark in the Hawaii-based SSLL fishery based on observer records. The animal was captured on February 10, 1997 and was retained for sale.** The proposed SSLL EFP may potentially have a higher degree of interaction with great white sharks given the larger number of animals that have been observed in the proposed action area. As a prohibited species under the HMS FMP, any great white shark captured during the EFP will need to be immediately released.

3.3.3.3 Basking Shark

The basking shark is a coastal pelagic species inhabiting the eastern Pacific from the Gulf of Alaska to the Gulf of California. The basking shark is typically seen swimming slowly at the surface, mouth agape in open water near shore. This species is known to enter bays and estuaries as well as venturing offshore. Basking sharks are often seen traveling in pairs and in larger schools of up to 100 or more. Basking sharks are highly migratory. Sightings of groups of individuals of the same size and sex suggest that there is pronounced sexual and population segregation in migrating basking sharks.

In the past, basking sharks were hunted worldwide for their oil, meat, fins, and vitamin-rich livers. Today, most fishing has ceased except in China and Japan. The fins are sold as the base ingredient for shark fin soup. A small fishery took place off Monterey Bay during the period from 1924–1950s for fish meal and liver oil; it is still taken as bycatch in the area. Basking sharks occur in greatest numbers during the autumn and winter months off California, but may shift to northern latitudes in spring and summer along the coasts of Washington and British Columbia. The harvest of this species has not been allowed by California since 2000, and the HMS FMP adopted the same state measures. It is thought to be the least productive of shark species. The basking shark is also currently categorized as "vulnerable" throughout its range and "endangered" in the Northeast Atlantic Ocean and North Pacific Ocean regions by the IUCN. There have been two recorded captures of basking shark in the DGN fishery (December 1993, May 2002); one was released alive and one was released assumed dead. **There has been one recorded interaction of a basking shark in the Hawaii-based SSLL fishery based on observer records. The shark was captured December 3, 2003 and was discarded dead.**

3.3.3.4 Megamouth Shark

The megamouth shark is a very unique animal that lives in the upper part of the water column in open ocean areas. There have been only a few sightings of megamouth, including a specimen that was tagged and followed for two days, allowing insight into its habitat preference and behavior. The shark remained at a depth of 15 m during the night, then dove to 150 m at dawn and returned to shallow waters at dusk. The megamouth is presumed to be a vertical migrator on a diel cycle, spending the daytime in deep waters and ascending to midwater depths at night. This vertical migration may be a response to the movements of the small animals on which it feeds. The krill that make up part of megamouth's diet are known to migrate from deep waters to the surface.

The HMS FMP provides protection as a prohibited species because of extreme rarity and uniqueness. Due to the lack of information concerning distribution and population status, the megamouth is considered "data deficient" by the IUCN.

Incidentally-caught specimens that would not survive if released are made available to recognized scientific and educational organizations for research or display purposes. Four specimens of this rare species have been taken in the DGN fishery; all but one was released alive (November 1984, October 1990, October 1999, and October 2001). (A review of world-wide megamouth captures, including the four DGN interactions, can be found at Florida Museum of Natural History 2006). **There have been no recorded interactions of megamouth sharks in the SSLL fishery based on observer records.**

3.3.3.5 Pacific Halibut

Pacific halibut occur from the Sea of Japan to the Bering Sea and south to Santa Rosa Island, Southern California. Pacific halibut is an important commercial and sport species in the Pacific Northwest, and fished commercially by longline, set gillnet and recreational hook-and-line fisheries. **There have been no recorded interactions of Pacific halibut in the SSLL fishery.**

3.4 Protected Species

The West Coast EEZ nearly encompasses the California current and as described above hosts a wide array of species including marine mammals, sea turtles, threatened and endangered fish species, and sea birds. These animals are protected under the MMPA (all marine mammals), the ESA (if listed as threatened or endangered), and the MBTA (within 3 nautical miles of the coast). This section will address effects on marine mammals and sea turtles. Sea birds are addressed in Section 3.5. As described above in section 3.3.3.1, no ESA listed salmon are expected to be affected by the proposed action. Similarly, no listed species of steelhead, white abalone or green sturgeon are likely to be affected. A full description of all marine mammal species likely to occur in the proposed action area can be found in the U.S. Pacific Marine Mammal Stock Assessments (SARs): 2005 (Carretta, *et al.* 2006) and the Alaska Marine Mammal SARs: 2005 (Angliss and Outlaw 2006). A comprehensive review of the status of leatherback sea turtles can be found in the Biological Opinion for the DGN EFP (NMFS 2006c) and a review of all sea turtles in the area can be found in the HMS FMP Biological Opinion (NMFS 2004c).

This section provides information about the current environmental baseline for protected species in two ways. First, an exposure analysis is presented, utilizing historic data from the DGN fishery and observer data from longline fisheries in various parts of the U.S. along with information on the biology and distribution of the various species within the proposed action area. Because there has been no longline fishery within the West Coast EEZ and therefore no direct data from which to project likely impacts on protected species, the exposures analysis serves to screen for those protected species most likely to be affected by the proposed action. Second, other past, present, and reasonably foreseeable actions are

reviewed in order to provide information about the cumulative effects of the proposed action; these cumulative effects are considered in the summary evaluation in section 4.4.

3.4.1 Marine Mammals

All marine mammals that may be found in the action area are listed below. A description of all marine mammals that may be found within the proposed action area can be found in the Pacific SARs (Carretta, *et al.* 2006); the Alaska SARs (Angliss and Outlaw, 2006); and the draft Environmental Assessment prepared for the 2006 DGN EFP (NMFS and PFMC 2006). All marine mammals are protected under the MMPA and managed under that statute on a stock basis.

Cetaceans
Dall's porpoise (*Phocoenoides dalli*) – CA/OR/WA stock
Harbor porpoise (*Phocoena phocoena*) - Morro Bay stock, Monterey Bay stock, San Francisco-Russian River stock, Northern CA/Southern OR stock, OR/WA stock.
Pacific white-sided dolphin (*Lagenorhynchus obliquidens*) – CA/OR/WA stock, northern and southern stocks
Risso's dolphin (*Grampus griseus*) – CA/OR/WA stock
Bottlenose dolphin offshore stock (*Tursiops truncatus*) – CA/OR/WA stock
Short-beaked (*Delphinus delphis)* – CA/OR/WA stock
Long-beaked common dolphins (*Delphinus capensis*) – CA stock
Northern right whale dolphin (*Lissodelphis borealis*) – CA/OR/WA stock
Striped dolphin (*Stenella coeruleoalba*) – CA/OR/WA stock
Short-finned pilot whale (*Globicephala macrorhynchus*) – CA/OR/WA stock
Sperm whale (*Physeter macrocephalus*) – CA/OR/WA stock
Dwarf sperm whale (*Kogia sima*) - CA/OR/WA stock
Pygmy sperm whale (*Kogia breviceps*) - CA/OR/WA stock
Killer whale (*Orcinus orca*) – Eastern north Pacific offshore stock, Eastern North Pacific southern resident stock
Mesoplodont beaked whales (*Mesoplodon* spp.) - CA/OR/WA stock
Hubbs' beaked whales
Gingko-toothed whale
Stejneger's beaked whales
Blainville's beaked whales
Pygmy beaked whale or lesser beaked whale
Perrin's beaked whale
Due to the difficulties involved with identifying different species, as well as the rarity of these species, the SAR for these species designated all Mesoplodont beaked whales as one stock in the EEZ waters off the coasts of CA/OR/WA
Cuvier's beaked whale (*Ziphius cavirostris*) - CA/OR/WA stock
Baird's beaked whale (*Berardius bairdii*) – CA/OR/WA stock
Blue whale (*Balaenoptera musculus)* – Eastern North Pacific stock
Fin whale (*Balaenoptera physalus*) - CA/OR/WA stock
Gray whale (*Eschrichtius robustus*) - Eastern North Pacific
Humpback whale (*Megaptera novaeangliae*) - Eastern North Pacific stock
Minke whale (*Balaenoptera acutorostrata*) - CA/OR/WA stock
Northern right whale (*Eubalaena glacialis*) - North Pacific
Sei whale (*Balaenoptera borealis)* - Eastern North Pacific stock

Pinnipeds
Steller sea lions (*Eumetopias jubatus)* – Eastern U.S. stock

California sea lion (*Zalophus californianus*) – U.S. stock
Guadalupe fur seal (*Arctocephalus townsendi*) – only one extant population
Harbor seal (*Phoca vitulina richardsi*) – CA stock, OR and WA stock
Northern elephant seal (*Mirounga angustirostris*) – CA breeding stock
Northern fur seal: (*Callorhinus ursinus*) – San Miguel Island stock

Some marine mammals within the area are also listed under the ESA (Table 3–11). ESA-listed marine mammals under NMFS's jurisdiction are listed below. Under the ESA, marine mammals are generally listed based upon the global population, not by stocks (as under the MMPA), although some distinct population segments (DPS) are listed (e.g., the Eastern North Pacific (ENP) resident killer whale DPS).

Table 3–11. Threatened or endangered under the ESA, under NMFS's jurisdiction, and occurring in the waters off California, Oregon, and Washington.

Marine Mammals	Status
Blue whale *(Balaenoptera musculus)*	Endangered
Fin whale *(Balaenoptera physalus)*	Endangered
Humpback whale (*Megaptera novaeangliae*)	Endangered
Sei whale (*Balaenoptera borealis*)	Endangered
Sperm whale (*Physeter macrocephalus*)	Endangered
Steller sea lion - eastern distinct population segment (DPS) (*Eumetopias jubatus*)	Threatened
Killer whales - southern resident DPS (*Orcinus orca*)	Endangered
Northern Right Whale (*Eubalaena glacialis*)	Endangered
Guadalupe fur seal (*Arctocephalus townsendi*)	Threatened

3.4.1.1 Marine Mammal Species Most Likely to be Affected by the Action

In order to determine which species are most likely to be affected by the proposed EFP fishery the following data were reviewed: observer records from the DGN fishery, the California based SSLL and DSLL fisheries (both prosecuted outside the EEZ, thus outside the action area), the Hawaii SSLL and DSLL fisheries, and other U.S. longline fisheries for which observer information was available and applicable to this analysis. The Hawaii SSLL fishery is the only fishery that currently utilizes gear (e.g., circle hooks and mackerel bait) similar to the proposed action (Atlantic longliners use circle hooks with mackerel or squid bait). In addition, patterns of distribution and abundance of various species within the proposed action area were reviewed. When considered together, these data provide the basis of an exposure analysis to determine which marine mammals are most likely to be exposed to the longline fishery and affected by its prosecution as proposed in the alternatives.

As previously described, there has not been a longline fishery in the West Coast EEZ so there are no observer records or logbooks from which to draw conclusions on which marine mammals may be affected by the proposed action. However, within the proposed time and area, a DGN fishery has occurred and observer records dating back to 1990 are available. These records were reviewed as a first step in understanding marine mammal exposure to the proposed fishery. In both the historic DGN and proposed longline fishery, gear is set at night and allowed to soak overnight and both gears are fished to target primarily swordfish. The two fisheries overlap temporally, with most DGN activity occurring from September 1 though December 31, the same time period as the proposed longline EFP fishery.

There are however, two key differences between the two fisheries that should be considered. First, fishing under the longline EFP would occur at least 30 miles offshore of the West Coast in waters north of Point Conception and west of the SCB south of Point Conception and includes the EEZ off California, Oregon, and Washington. It should be noted that this area does not precisely match the area of historic

DGN effort, some of which occurred within 30 nm of shore and generally did not occur in waters off Washington State (see Carretta, *et al.* (2005) for a map of the distribution of DGN effort from 1996 to 2002). Second, the DGN observer records likely do not reflect likely takes in the proposed longline EFP.

Gillnet gear has been identified as a major source of anthropogenic mortality for marine mammals species globally (Perrin, *et al.* 1994). The cause of entanglements in gillnets is usually attributed to marine mammals being unable to detect the net and becoming entangled. This is supported by the substantial decline of marine mammal entanglements in the DGN fishery during field testing of pingers (Barlow and Cameron 2003) and following the implementation of the Pacific Offshore Cetacean Take Reduction Plan (POCTRP) (NMFS observer data) which includes a requirement that acoustic pingers be attached to DGN nets (62 FR 51805). By contrast, marine mammal takes in longlines are generally attributed to depredation by odontocetes, either feeding on the bait or fish caught on the hooks although entanglements are also possible (Gilman, *et al.* 2006a). Entanglements of large baleen whales have been recorded in the Hawaii based SSLL fishery although they are not common (Forney 2004). A direct comparison of gillnet and longline marine mammal CPUEs could not be made for this EA as no comparable fishery records could be found of gillnets and longline occurring in the same area, time, and target species. Although a review of the observer records from California, Hawaii, and the Atlantic suggest that marine mammal entanglements of most species are generally quite low in longline fisheries.

Table 3–12. Marine mammals observed taken in the DGN fishery.

Species	Number observed taken
Beaked Whale, Baird's	1
Beaked Whale, Cuviers	21
Beaked Whale, Hubbs'	5
Beaked Whale, Mesoplodont	2
Beaked Whale, Stejneger's	1
Beaked Whale, Unidentified	3
Dolphin, Bottlenose	3
Dolphin, Long-Beaked Common	14
Dolphin, Northern Right Whale	65
Dolphin, Pacific White-sided	28
Dolphin, Risso's	33
Dolphin, Short-Beaked Common	327
Dolphin, Striped	1
Dolphin, Unidentified Common	21
Porpoise Dall's	22
Sea Lion, California	153
Sea Lion, Steller	2
Seal, Northern Elephant	112
Whale, Fin	1
Whale, Gray	3
Whale, Humpback	3
Whale, Killer	1
Whale, Minke	3
Whale, Pygmy Sperm	2
Whale, Short-finned Pilot	12
Whale, Sperm	8

While the DGN and SSLL gears likely have different CPUEs and may result in different probabilities of marine mammal takes, the DGN data present a useful starting point from which to identify species that may be exposed to longline gear fished under the proposed EFP. Table 3–12 provides the number of

marine mammals observed taken in 7,221 sets from 1990-2005 (NMFS observer data). Species in italics are also listed on the ESA.

In the EFP proposal received by the Council, the applicant suggested utilizing CPUEs developed from the DGN records and applying that rate to 56 sets (assuming that effort could be standardized and that one set of a DGN gear would equal one set of a shallow-set longline gear). While this approach must be viewed with caution due to the differences between the DGN fishery and the proposed longline fishery, it does suggest a low probability that most marine mammal species will be taken in the longline EFP fishery. As can be seen in Table 3–12, takes of some species are very rare (e.g., one fin whale observed taken in 16 years). Quantifying likelihoods of takes based upon such rare events is difficult and may not allow for reasonable projections of future takes, particularly in instances where so little is known about the nature of the interaction and the cause for entanglements. For this reason and the difficulty in using the DGN fishery as a proxy for likely takes under the longline EFP, a review of the biology and known distribution of various marine mammals was conducted along with a review of other SSLL fisheries to provide a more qualitative probability of exposure and effects to marine mammal species.

ESA-listed Marine Mammals

Several species of large baleen whales, blue, fin, and humpback whales, spend the summer and fall feeding the in waters off California within the EEZ which places them in the area of the proposed action. Feeding aggregations have been observed in the summer and fall in central California and the waters around the Channel Islands (Carretta *et al*. 2006). A number of listed whales migrate through the action area in the fall (including humpbacks that spend their summers feeding off Oregon, Washington, and British Columbia, Canada). One ESA listed baleen whale, sei whales, are not expected to be affected by the action as this species has rarely been observed in the west coast EEZ and tend to be more commonly found in tropical waters. For the species that utilize the action area for feeding and as a migratory corridor, exposure to and entanglement in longline gear is possible. Because there is no direct information on interactions between ESA whales and a longline fishery within the EEZ, other sources of information were used to evaluate the likelihood of interaction with these species.

The first source of information is the historic DGN fishery observer records. As noted in Table 3–12 , over the course of 16 years and 20 percent observer coverage, very few ESA listed baleen whales were observed entangled in DGN gear; three humpbacks, one fin, and no blue whales were observed entangled in DGN gear, suggesting the interactions between fishing gear and these whales are rare. For humpback and fin whales, utilizing the applicant's method of using the CPUEs developed for the DGN fishery and applying them to the potential SSLL EFP effort yield projected incidental take rates much lower than one (two and three orders of magnitude less than one) suggesting an extremely low likelihood of interactions. Also, all observed takes of humpback and fin whales occurred within the SCB, which is not a part of the proposed action area. When considering the DGN observer data it must be remembered that it is possible that these large species (up to 100 foot long blue whales) may have interacted with gear, but were able to "burst" through the gear before becoming entangled. In order to further consider the assumption that the likelihood of interaction with ESA listed baleen whales is low, observer data from the California-based SSLL outside the EEZ was reviewed and indicated that none of these species were observed taken during that fishery. This data may not directly reflect the likelihood of interactions with these listed species, since it does not include the nearshore migratory corridors or summer feeding areas utilized during the summer and fall by listed whales.

In order to assess likelihood of interactions within a similar environment (i.e., baleen whale feeding area and migratory corridor), information from the Atlantic HMS observed program was reviewed. In twelve years of observing the Atlantic HMS fishery (at approximately five percent annually) there are no records of entanglements between ESA listed whales commonly found in the area (e.g., sei, blue, humpback, fin)

and the commercial pelagic longline fishery along the Atlantic coast (NMFS 2004d). There was one account of an unidentified large whale entangled in gear during the Northeast Distant (NED) experiments testing modified longline gear (circle hooks) and methods. While the animal could not be positively identified, it was likely a listed species based upon the known distribution of whale species in the NED. The animal was released unharmed without any trailing gear (NMFS 2004d). In the Hawaii SSLL fishery, only one humpback whale has been observed entangled in gear (in 2006) during 2,631 observed sets (2,150,681 hooks) since 2004 (Hawaii observer program). The whale entangled in 2006 was released alive, although final assessment of its condition (i.e., seriously injured or not) has not been made (Chris Yates, PIRO, personal communication, February 21, 2007). In the SSLL fishery from 1994-2002, there were no observed takes of ESA listed baleen whales (Forney 2004). Based upon the rarity of observed interaction between DGN gear and large baleen whales and the rarity of entanglements and no record of a serious injury in longline fisheries in the Pacific and the Atlantic, it is not likely that the fishing that would occur under the EFP would affect ESA listed baleen whales, blue, fin, or humpback whales.

Sperm whales are listed as endangered and are found throughout the California Current off the U.S. west coast, reaching peak abundances off of California from April to mid-June and the end of August through mid-November (Rice 1974 in Carretta *et al*. 2006) demonstrating seasonal movements but not a clear migration like most large baleen whales. There have been eight observed takes of sperm whales in the 16 years of DGN fishery observer program. Most of the takes occurred within two relatively limited area around 36° N latitude and 122° W longitude (south and west of Monterey Canyon) to around 32° N latitude and 120° W longitude (southwest of the Channel Islands and near Cortes Bank). As above, utilizing a CPUE from the DGN fishery and applying it to the anticipated 56 sets results in an extremely low projected rate of take, suggesting that the likelihood of sperm whales interacting with longline gear operating in similar spatial and temporal distributions as the historic DGN is extremely low. Sperm whales are more commonly seen in Hawaii than the West Coast EEZ therefore a review of the Hawaii based SSLL was done. There have been no observed entanglements in the SSLL fishery as it has been operating since 2004 and only one observed take between 1994–2002 and the animal was not seriously injured (Forney 2004). Sperm whales have been observed interacting with longline fisheries in Alaska, feeding on black cod, sablefish, and halibut that have been caught on longlines and one entanglement has been observed in the Alaska longline fisheries between 1999–2003 (Angliss and Outlaw 2006). Sperm whales feed primarily on large and medium-sized squids, although the list of documented food items is fairly long and diverse. Prey items include other cephalopods, such as octopuses, and medium- and large-sized demersal fishes, such as rays, sharks, and many teleosts (Berzin 1972; Clarke 1977, 1980; Rice 1989). The diet of large males in some areas, especially in high northern latitudes, is dominated by fish (Rice 1989) which may explain the depredation events (removing fish off hooks) observed in the Alaska longline fisheries. Sperm whales may begin a pattern of depredation on longlines within the EEZ; however, such behavior has not been observed in Hawaii and given the very limited scope of the proposed fishery, is not likely to occur in 2007. If the fishery were to expand, additional analysis of potential of depredation may be necessary, but given the anticipated effort in the longline EFP fishery, it is unlikely that sperm whales would be affected by the action.

Steller sea lions may be exposed to the longline fishery although this is considered unlikely. Incidents of observed entanglements in DGN are extremely rare, only two observed entanglements in 16 years of observations. Because Steller sea lions are found only along the West Coast, observer records from fisheries in Alaska were reviewed to further assess likelihood of entanglements of Steller sea lions. Longline fisheries are much more widespread, with much higher levels of effort, in the waters off Alaska, where the endangered stock of Western Steller sea lions are found. In the Alaska fisheries, one Steller sea lion has been observed incidentally taken and killed in the Alaska sablefish longline fishery which results in an estimated annual mortality of 1.37 (Angliss and Outlaw 2006). Steller sea lion rookeries are located at Año Nuevo and South Farallon Island, both of which are inshore of the proposed action area and therefore there is not expected to be a direct or indirect effect of the fishery on the rookeries. Also,

activity on the rookeries (i.e., pupping, nursing, and breeding) occurs from January through May, thus there is no temporal overlap between rookery activities and the proposed action, although it is not impossible that animals moving to rookeries may interact with the proposed fishery. Based upon the rarity of interactions between Steller sea lions and DGN gear and observer records from Alaska and the timing and location of breeding in California waters, Steller sea lions are not expected to be affected by the proposed action.

One stock of killer whales is listed as endangered, the ENP southern residents. These animals have been observed feeding primarily on salmon and are thought to be fish eaters (as opposed to transients that prey primarily on marine mammals and other non-fish species). The ENP southern residents have been observed five times in central California, generally near Monterey Bay from December through February (ref). There have been no sightings of this population in the action area during the months of September through December, although during this time sightings of this stock within inland waters of Washington State are common. In Alaska, killer whales have been observed predating on longline fisheries in the Bering Sea and Gulf of Alaska (Sigler *et al.* 2003). Recent genetics studies indicate that resident killer whales predate on longlines targeting cod and flatfish (which may be part of their normal diet) while transient predate on fisheries targeting pollock (usually trawls) (Angliss and Outlaw 2006). The most recent data indicates one observed mortality of a resident killer whale in the cod longline fishery in 2003 (Angliss and Outlaw 2006). In the historic DGN fishery, there was one observed take of a transient killer whale. Swordfish, the target species of the proposed fishery, are unlikely to be a prey species for the endangered killer whale population since they feed primarily on salmon (NMFS 2006b). Due to the rarity of this population in the area, rare occurrence of killer whale takes in the DGN observer records, and the low likelihood that this population would depredate on swordfish or tuna, the likelihood of interaction in the proposed EFP fishery is very low to non-existent.

Northern right whales and Guadalupe fur seals may be in the proposed action area, but it would be very unlikely based upon observer records from the DGN fishery (no recorded entanglements for either of these species) and also aerial and ship based surveys conducted throughout the area (Carretta *et al*. 2006). Therefore, it is not anticipated that the proposed action would affect either of these ESA listed species.

Non-ESA-listed Marine Mammals

Only three gray whales have been observed taken in the DGN fishery. Unlike some of the other large whale species, large aggregations of feeding gray whales are not likely to occur within the primary action area of the proposed action (i.e., off the California coast). The majority of the gray whale stock moves into the waters off Oregon, Washington, British Columbia, Canada, and especially Alaska to feed throughout the summer. The timing of the proposed action coincides with the annual migration of gray whales from northern waters to the waters Baja California, Mexico throughout the fall. When migrating, gray whales will generally stay relatively close to shore and are therefore not likely to be within the proposed action area. Based upon the available information it is very unlikely that gray whales would be affected by the proposed action.

As noted above, one population of killer whales is listed as endangered; however, another population, the ENP transients, may be found in the action area. Based upon the extremely low observed level of takes in the DGN fishery (one in 16 years) it is very unlikely that the longline fishery would entangle a transient killer whale. Also transients off the U.S. west coast are thought to feed primarily on marine mammals and are unlikely to depredate bait or target species, swordfish, off a longline, further limiting the likelihood of exposure.

Short-finned pilot whales are a species of concern in terms of bycatch within West Coast fisheries since the stock's PBR is very low—1.2—and at this time the five year average annual mortality is one (based

upon one observed dead short-finned pilot whale caught in a DGN fishery in 2003 (NMFS observer program)). Short-finned pilot whales are usually found in tropical and warm-temperate waters. Although once commonly seen off southern California, surveys conducted since the strong 1982–1983 El Niño suggest that their abundance has declined since the 1980's (Carretta et al 2006). The abundance of short-finned pilot whales appears to be variable and related to oceanographic conditions (e.g., El Niño or periods of unusually warm water off the coast) (Forney 1997 in Carretta *et al.* 2006). The target SST identified by the applicant is 15°–18°C (60°–65°F), which is likely colder than the preferred temperatures of short-finned pilot whales, thus limiting likelihood of exposure to the gear. Short-finned pilot whales have been observed taken in the DGN fishery. Only one short-finned pilot whale has been observed taken and killed in the DGN since the implementation of the Cetacean Offshore Take Reduction Plan (TRP); the take occurred south of Point Conception in 2003. Prior to that, from 1990 through September 1997, 11 short-finned pilot whales had been observed taken and killed in the DGN fishery, all north of Point Conception. Eight of the short-finned pilot whales were observed taken in 1993, with multiple animals (two and four) taken in single hauls. Observed takes also occurred in 1992 and 1997, with single animals taken in each net. The years 1992, 1993, and 1997 were all identified as El Niño years or part of a prolonged warm-water period (from 1991 to 1993) (Pacific Marine Environmental Laboratory 2006). Short-finned pilot whales are a tropical and warm water species and their range appears to be primarily restricted to the waters south of Point Conception during normal or cold water ocean conditions (K. Forney, NMFS SWFSC, 2006, personal communication.). During warm water or El Niño periods, short-finned pilot whales appear to more commonly move north of Point Conception. Short-finned pilot whales are known to be capable of diving to deep depths presumably in search of squid, their primary prey. It is not known precisely how warmer water conditions may affect their offshore distribution or where in the water column they feed.

Short-finned pilot whales have been observed taken in the Atlantic pelagic longline fishery and NMFS recently completed a draft take reduction plan for the long-finned and short-finned pilot whale, and Risso's dolphins (NMFS 2006a). The nature of the interactions in the Atlantic is unclear; fishermen suggest that depredation on swordfish and tuna is occurring, although squid (the bait commonly used in longlines in the Atlantic) is a more typical prey item (NMFS 2006a). Squid bait would not be used in the proposed SSLL EFP fishery. Short-finned pilot whales have been observed taken in the Hawaii SSLL fishery; one take in 1996 (line wrapped around the caudle peduncle—the animal was dead when retrieved), one take in 2000 (the animal was seriously injured after being hooked in the mouth and ingesting a hook) (Forney 2004). These two observed takes occurred during an observer program operating from 1994-2002 in which 1,308 shallow longline sets targeting swordfish were observed. The level of take may be related to the abundance of short-finned pilot whales in the water around Hawaii; the current minimum population estimate in that region is 5,986. By comparison, the minimum population estimate for the West Coast EEZ is 149 animals (Carretta, *et al.* 2006). Based upon the low abundance of short-finned pilot whales in the U.S. west coast EEZ, their occurrence in water generally warmer than those targeted by the applicant, and the rarity of entanglements on Hawaii longlines (where the stock is much more abundant), and the use of mackerel bait, rather than squid bait (a prey species of the short-finned pilot whale) it is considered unlikely that short-fined pilot whales would be affected by the proposed action.

Species of beaked whales have been observed taken in the historic DGN fishery and could possible be taken in the proposed longline fishery. Baird's, Hubb's, Mesoplodont, and Stejneger's have all been observed entangled in the DGN fishing gear at low numbers, ranging from one to five for the entire 16 years of the observer program. The Cuvier's beaked whales have been observed taken at a higher rate, 21 individuals over 16 years. Cuvier's beaked whales are the most widely distributed of all of the beaked whales and like other beaked whales, are generally found in deep offshore, tropical to cool temperate waters of the world. They seem to prefer slope waters with a steep depth gradient. The reason for the high level of takes is not known, although all of the takes occurred from 1992 to 1995, there have been no

observed takes since 1995. There have been no reports of beaked whales interacting with the California based shallow-set longline fishery outside the EEZ and these species have not observed in the Hawaii based SSLL fishery (although one Blainville beaked whale was observed killed in the deep-set tuna fishery (Forney 2004)). Based upon the lack of observed recent interactions between the DGN fishery and beaked whales, lacked of observed takes in the Hawaii based SSLL fishery and the tendency of beaked whales to forage and travel at depths greater than the proposed SSLL gear, it is unlikely that beaked whales would be affected by the proposed action.

For other marine mammal species, the level of observed takes in the DGN fishery was used to estimate the species most likely to occur in the same area and time as the proposed action. If the CPUEs developed from the DGN records are used and applied to 56 sets (assuming that effort could be standardized and that one set of a DGN would equal one set of a shallow-set longline), the resulting rates of takes suggest that most marine mammal species are unlikely to be taken in the longline EFP fishery. Using this quantitative approach, a very low number of short-beaked common dolphins, northern elephant seals, and California sea lions may be taken, likely due to their abundance in the area (the minimum population estimates for these three stocks are 305,694, 60,547, and 138,881 animals respectively) (Carretta *et al.* 2006). Risso's dolphins and northern right whale dolphins may also be observed taken at low levels. Risso's dolphins have been observed taken at low levels in the SSLL fishery in Hawaii and there was one observed take in the California based shallow-set longline fishery (NMFS observer program). Five California sea lions were observed taken in the 1988-1989 experimental drift longline fishery for shark off California (see Table 3–3) although the condition of the animals (alive, injured, killed) was not recorded. A short-beaked common dolphins was observed taken in the Hawaii-based SSLL fishery between 1994 and 2002, although it was not seriously injured (Forney 2004). A very low number of northern right whale dolphins and northern elephant seals may be taken in longline EFP based upon take rates in the DGN fishery, although there is no record of these species being taken in California-based longline fisheries in the past.

Although not observed taken in the historic DGN fishery or the California-based SSLL outside the EEZ, it is possible that a small number of harbor seals may be taken during fishing under the EFP. Like California sea lions, harbor seals are known of take fish off fishing gear (depredation) and have been observed interacting with the salmon troll fishery off the contiguous U.S. West coast (Carretta *et al.* 2006). Harbor seals have also been observed taken in two Alaska longline fisheries, the Bering Sea/Aleutian Islands longline fishery and the Gulf of Alaska groundfish longline fishery. Two stocks of harbor seals could interact with the proposed SSLL fishery, the California stock and the Oregon/Washington coastal stock. Based upon the low level of effort anticipated in the proposed EFP fishery, takes of harbor seals are unlikely, but can not be entirely discounted.

The analysis provided within this section has been based largely upon observer data from the DGN fishery that has occurred in the waters off California primarily with low levels of effort off of Oregon and Washington. In Washington, DGN gear has been banned since 1990. Observer information from an experimental thresher shark DGN within the EEZ off of Washington State was reviewed to provide some insight, albeit limited, into the possible effects of a longline fishery with those waters (WDF&W 1988; WDF&W 1989). As with the swordfish DGN data, application of CPUEs from a gillnet fishery to a longline fishery is problematic. However, what was most striking about the data from Washington was the estimated marine mammal CPUEs, which were generally an order of magnitude larger than the swordfish DGN CPUEs. (A discussion on sea turtles CPUEs in the Washington experimental fishery is provided in section 3.4.2.1.) In addition, species not observed taken in the swordfish DGN fishery, were observed taken in the Washington State fishery, including harbor porpoise and harbor seals. If SSLL sets are made in the waters off Washington, anticipated effects on marine mammals may be different than those presented in this analysis.

The following provides a very brief review of the marine mammals considered most likely to be affected by the proposed action.

Short-beaked common dolphin (*Delphinus delphis*) – CA/OR/WA stock

Short-beaked common dolphins are the most abundant cetacean off California, with abundance varying both seasonally and between years. They are distinguished in color from the long-beaked common dolphin by having a white abdominal area with a darker eye patch that is continuous with a dark stripe that extends forward and joins the blackness of the lips. Their preferred prey is small schooling fish and they often hunt at night in the deep scattering layer of vertically migrating prey (Reeves*, et al.* 2002). In more temperate waters of the higher latitudes, these dolphins tend to calf in the late spring and early summer and gestation lasts approximately 10–11 months, with a 10-month lactation period (Reeves*, et al.* 2002). Surveys show wide distribution from the coast out to at least 300 nm from shore. The best abundance estimates for the short-beaked stock is 449,846 (Coefficient of Variance (CV)=0.25) animals, with a minimum population estimate of 365,617 animals and an estimated PBR of 3,656 animals per year. The estimated mean annual take (serious injury and mortality) for short-beaked common dolphins in U.S. commercial fisheries is 93 (CV=0.23) animals, based on information from 1997–2001. This stock is not classified as strategic under the MMPA (Carretta*, et al.* 2005).

California sea lion (*Zalophus californianus*) – U.S. Stock

California sea lions are perhaps the most familiar pinnipeds in the North Pacific Ocean. Adult females and juveniles are slender-bodied, whereas adult males are robust at the shoulder, chest, and neck, and slender at the hind end. The snout is long, straight, and narrow. They have broad foreflippers with hair on the upper surface and short hindflippers with short claws. Adult males have a pronounced forehead and are mostly dark brown to black, with areas of light tan on their face. Females and juveniles are lighter in color than males (Reeves*, et al.* 2002). California sea lions have a diverse diet, feeding on northern anchovy, market squid, sardines, Pacific and jack mackerel, and rockfish (Reeves*, et al.* 2002). Population estimates are made from pup counts and the proportion of pups in the population, since not all age classes of sea lions are ashore at the same time. California sea lions breed at the Channel Islands, off southern California, at islands along the northern Pacific coast of Baja California, and on the east coast of Baja California in the middle and southern Gulf of California (Reeves*, et al.* 1992). After the breeding season, large numbers, particularly males, migrate north along the Pacific coast. The U.S. stock of California sea lions population ranges between the U.S./Mexico border and extends northward into Canada. The population abundance estimate for this stock is between 237,000–244,000 animals, with a minimum population estimate of 138,881. The PBR for this stock is calculated to be 8,333 animals per year. Estimated mean annual take in commercial fisheries is 1,476 animals, based on data from 1997–2001. Takes have been documented during those years in the CA/OR drift gillnet fishery, the California set gillnet fishery for halibut and angel shark, the CA/OR/WA groundfish trawl fishery, the WA/OR salmon net pen fishery, and the salmon pen fishery operating out of British Colombia. Other threats to this stock include shooting, entrainment in power plants, marine debris, and boat collisions. The stock is not classified as strategic under the MMPA (Carretta*, et al.* 2005).

Risso's dolphin (*Grampus griseus*) – California/Oregon/Washington Stock

Risso's dolphins are found world-wide in tropical and warm-temperate waters. From seasonal distribution patterns seen from aerial and boat surveys, it is thought that Risso's dolphins move northward into Oregon and Washington during the late spring and summer, while they are found generally off California during the cold water months (Carretta*, et al.* 2005). They have a distinctive, beakless head shape and body that is noticeably more robust in the front half than in the back, a blunt snout, and prominent appendages, with long pointed flippers and a tall, slender, and falcate dorsal fin. Adults have

extensive linear scarring concentrated on the back and sides, which makes many adults appear almost completely white except for the dark dorsal fin and flippers (Leatherwood*, et al.* 1983; Reeves*, et al.* 2002). Risso's dolphins travel in groups of on average 25 individuals and feed most often on squid, primarily at night (Reeves*, et al.* 2002). Risso's dolphins in CA/OR/WA waters are considered one stock in the SARs. The best estimate of population abundance for this stock is 16,066 (CV=0.28), with a minimum population estimate of 12,748 animals. PBR for this stock is estimated to be 115 animals per year. The mean annual serious injury and mortality in commercial fisheries for this stock is estimated to be 3.6 (CV=0.63) animals, based on data from 1997–2001. This stock is not considered a strategic stock under the MMPA (Carretta*, et al.* 2005).

Northern right-whale dolphin (*Lissodelphis borealis*) - California/Oregon/Washington Stock

Northern right-whale dolphins are generally seen in shelf and slope, cool temperate waters, ranging on the west coast of North America from the Gulf of Alaska and the state of Washington, south to Baja California (Reeves*, et al.* 2002), depending on prey availability. They are distinguished by their slim, graceful body and the absence of a dorsal fin or any trace of a dorsal ridge. They are primarily black, but with a striking white lanceolate pattern of varying extent on the ventral surface. The melon slopes gently forward into a small distinct beak (Leatherwood*, et al.* 1983). They travel in schools of several hundred to thousands of animals and often associate with Pacific white-sided dolphins. Primary prey species include small fish, including lanternfish and squid. Peak calving occurs in the summer months, and the gestation period is a little over a year, with a calving interval of at least two years (Reeves*, et al.* 2002). The SARs designated northern right-whale dolphin found in the waters of California/Oregon/Washington as one stock. The estimated population abundance for this stock is 20,362 (CV=0.26) animals, with a minimum population estimate of 16,417 animals. Based on this minimum population, the estimated PBR is 164 animals per year. The mean annual serious injury and mortality of northern right whale dolphins in U.S. commercial fisheries is estimated to be 23 animals, based on data from 1997–2001. This is not classified as a strategic stock under the MMPA (Carretta*, et al.* 2005).

Northern elephant seal (*Mirounga angustirostris*) –California Breeding Stock

The northern elephant seal is the largest phocid in the northern hemisphere. They have a robust torso that tapers to narrow hips with short foreflippers, with slightly longer outer digits and long broad claws. Males begin to develop an elongated fleshy nose (proboscis) at about puberty, which they inflate during the winter breeding season to resonate sound when threatening other males. Adult males can be about three to four times the mass of adult females. Adult females and juveniles are mostly lighter to chocolate brown, whereas males are uniformly dark brown except for their chest, which are heavily calloused and scarred and thus appear white and light brown (Reeves*, et al.* 2002; Reeves*, et al.* 1992). The California breeding population of northern elephant seals is considered one stock in the SARs, separate from the breeding population in Baja California, Mexico. Generally, northern elephant seals breed and pup from December to March. Males then forage further north in Alaskan waters, while females forage off Oregon and Washington waters, typically south of 45º N latitude. Adults return to land to molt between March and August, with males beginning their molt later than females. Northern elephant seals eat mesopelagic fish and squid, though some may forage on the sea bottom and continental shelf for skates, rays, sharks, and rockfish (Reeves*, et al.* 2002). The best estimate of population abundance for the California breeding stock is 101,000 from 2001, with a minimum population estimate of 60,547 animals. PBR for this stock is calculated to be 2,513 animals per year. Threats to this stock include mortality and injury in fishing gear (greater than 86 mean annual takes per year, based on data from 1996–2000). Takes have been documented in the California/Oregon DGN fishery, the California set gillnet fishery for halibut and angel shark, and the California/Oregon/Washington groundfish trawl fishery. Other threats include boat collisions, collisions with automobiles, shootings, and entanglement in marine debris. The stock is not considered a strategic stock under the MMPA (Carretta*, et al.* 2005).

Harbor seal (*Phoca vitulina richardsi*) – California Stock

Harbor seals range widely in coastal areas of the North Pacific and North Atlantic. Five subspecies are recognized, based on geographic distribution. Two stocks of harbor seals are found off the U.S. West Coast EEZ and defined in the SARs: the California stock and the Oregon and Washington outer coast stock. Both stocks inhabit nearshore coastal and estuarine waters and although they do not migrate extensively, they have been documented traveling 300–500 km on extended foraging trips or to find suitable breeding areas. There are approximately 400–600 harbor seal haul-out sites in California, and include both the mainland and offshore islands. The harbor seal is a medium-sized phocid; however, harbor seals in Alaska and the Western Pacific are larger than those in the Atlantic. The head is robust and the snout is broad and long. The flippers are relatively short with sturdy claws on the foreflippers. There are two basic color patterns in harbor seals, white or light gray to silver with dark spots, or black or dark gray to brown with white rings. Harbor seals eat a varied diet, consisting of fish, octopus, and squid (Reeves, *et al.* 2002; Reeves, *et al.* 1992). The best estimate of abundance is 34,233 harbor seals in California based on recent harbor seal counts (May–July 2004) and a revised correction factor. Given a minimum population estimate of 31,600 animals in the California stock, the PBR for this stock is 1,896 harbor seals per year (Carretta, *et al.* 2006). Estimated mean annual take in commercial fisheries is 388 animals, based on data from 1998–2003. The best estimate of abundance is 24,732 (CV=0.12) animals for the Oregon/Washington coast stock of harbor seals. Given a minimum population estimate of 22,380 harbor seals, the PBR for the Oregon/Washington stock is 1,343 animals (Carretta, *et al.* 2005). Estimated mean annual take in commercial fisheries is greater than 14.6 animals, based on data from 1997–2001. Both stocks are not classified as strategic under the MMPA (Carretta, *et al.* 2005).

3.4.1.2 Other Actions Contributing to the Baseline Condition of Marine Mammals

Most of the marine mammal stocks identified as most likely to interact with the longline EFP fishery range along the west coast of the contiguous United States and Baja California, Mexico. The following text provides an overview of cumulative effects in primarily U.S. waters on marine mammals that may, although are unlikely, to interact with the longline EFP fishery. As described above, a number of ESA listed marine mammals may be in the area of the proposed longline EFP fishery, these are: blue, sei, fin, humpback, northern right, and southern resident killer and sperm whales and Guadalupe fur seals and Steller sea lions. Based upon the low level of effort (sets and hooks) under the proposed longline EFP, interactions are very unlikely to occur and authorization of take of these ESA listed species under section 101(a)(5)(E) of the MMPA is not necessary. A very low number of short-beaked common dolphins, northern elephant seals, California sea lions, Risso's dolphins, and northern right whale dolphins may be taken during longline operations carried out under the EFP. The following is a general description of cumulative effects for marine mammal species found within the U.S. west coast EEZ.

All marine mammals in the North Pacific are vulnerable to a variety of threats detailed in the following section.

Fishery interactions with marine mammals are regulated under the MMPA. The following fisheries have been classified as either a Category I or II fishery in the MMPA 2005 List of Fisheries (71 FR 247, January 4, 2006), based on the level of serious injury or mortality of marine mammals that occurs incidental to the fishery.

- Category I fisheries: CA angel shark/halibut and other species set gillnet (>3.5 inch mesh); CA/OR thresher shark/swordfish drift gillnet (≥14 inch mesh)
- Category II fisheries: CA yellowtail, barracuda, white seabass and tuna drift gillnet fishery (mesh size >3.5 inches and <14 inches); CA anchovy, mackerel, tuna purse seine; CA squid purse seine;

CA pelagic longline (this includes the deep-set longline fishery); OR swordfish floating longline; OR blue shark floating longline.

All of these fisheries have had some level of interaction with marine mammals, either documented from on-going observer programs or historic observer data. A more thorough description of the fisheries and impacts on marine mammal stocks can be found in the most recently published U.S. Pacific Marine Mammal Stock Assessment Report: 2005 (Carretta *et al.* 2006) and the Alaska Marine Mammal Stock Assessment, 2005 (Angliss and Outlaw 2006). Currently, the proposed SSLL fishery under the EFP is not listed on the LOF because there are no records of documented marine mammal take as this is a new fishery and there are no observer records or logbooks to draw from in categorizing the fishery.

Marine mammals may also be affected by a variety of past and current anthropogenic and non-anthropogenic threats. Historically, the primary anthropogenic effects have been from direct harvest of marine mammals. All large marine mammal species, baleen whales and some odontocetes, have been captured in whaling operations. In the past, commercial whaling occurred at higher levels than at the present time, although some species continue to be subject to directed hunting, including fin whales, sperm whales, gray whales, minke whales, and beaked whales (although not necessarily the stocks exposed to the DGN fishery). Commercial whaling is closely monitored by the International Whaling Commission to ensure sustainable level of harvest, although illegal whaling is known to occur and recently pressure has been put on the IWC to relax the 20 year whaling moratorium.

Threats to marine mammals include entanglement in discarded fishing gear, ship strikes, lethal removal by fisheries (gunshots), exposure to toxins (including PCBs, DDT, and heavy metals), pollution, loss of habitat or prey, and underwater sound. These effects are difficult to quantify, but may be reflected in stock trends.

Within the proposed action area, a number of fisheries have been observed and incidents of marine mammal takes have been recorded. These include the California angel shark/halibut and other species set gillnet (>3.5 inch mesh); California/Oregon thresher shark/swordfish DGN (14 inch mesh); the California yellowtail, barracuda, white seabass DGN fishery (mesh size >3.5 inches and <14 inches); California anchovy, mackerel, tuna purse seine; California squid purse seine. Some of the marine mammal species that may be affected by the proposed action have limited distribution (primarily the waters off California, Oregon, and Washington), although some are distributed throughout the waters off Mexico and others are highly migratory (particularly baleen whales) and thus their range extends as far as Alaska to the north and Central America to the south. For the most part, fishery effects outside U.S. waters are largely unknown. See the Pacific SARs (Carretta *et al.* 2006); Alaska SARs (Angliss and Outlaw 2006); and the draft Negligible Impacts Determination (NMFS 2006d), for more information on threats to marine mammals.

3.4.2 Sea Turtles

Four species of marine turtles may be found in the area of the proposed action, they are listed along with their status in Table 3–13

Table 3–13. Sea turtles within the proposed action area

Sea turtles	Status
Leatherback turtle (*Dermochelys coriacea*)	Endangered
Loggerhead turtle (*Caretta caretta*)	Threatened
Olive ridley (*Lepidochelys olivacea*)	Endangered/threatened
Green turtle (*Chelonia mydas*)	Endangered/Threatened

3.4.2.1 Species of Sea Turtles Most Likely to be Affected by the Proposed Action

All four sea turtle species within the proposed action area have been observed taken in the DGN fishery (within the action area) and in longline fisheries throughout the Pacific, although leatherbacks and loggerheads are most commonly caught in shallow-set longline gear (NMFS, Hawaii observer program, NMFS observer program, Watson *et al.* 2005). Based upon observer records, leatherback sea turtles were the most commonly observed sea turtle entangled and killed in the DGN fishery and the CPUE of leatherbacks was substantially higher north of Point Conception than south of the point (Carretta 2005). This is likely due to the oceanographic differences between the two areas. Loggerheads are the second most commonly observed sea turtle species taken in the DGN fishery with all takes occurring south of Point Conception, usually within the SCB, and all during declared El Niño years. Table 3–14 provides the number of observed takes of sea turtles in the DGN fishery between 1990 and 2005 with 20 percent observer coverage.

Table 3–14. Number of observed takes of sea turtles in the DGN fishery, 1990-2005.

Species	Number Taken
Turtle, Green/Black	1
Turtle, Leatherback	23
Turtle, Loggerhead	15*
Turtle, Olive Ridley	1

*All but one of the takes occurred during El Niño years.

Leatherback Sea Turtles

Of all the sea turtle species within the action area, the leatherbacks are the most likely to be affected by the proposed action. As noted above, there is a much higher leatherback CPUE north of Point Conception than south and this is consistent with the biology and emerging information about the distribution and foraging patterns of Pacific leatherbacks. Aerial surveys conducted during the late summer and fall months reveal that leatherbacks forage off central California, generally at the end of the summer, when upwelling relaxes and sea surface temperatures increase. Leatherbacks were most often spotted off Point Reyes, south of Pt. Arena, in the Gulf of the Farallon, and in Monterey Bay. These areas are upwelling "shadows," regions where larval fish, crabs, and jellyfish are retained in the upper water column during relaxation of upwelling. Researchers estimated an average of 170 leatherbacks (95 percent CI = 130–222) were present between the coast and roughly the 50 fm isobath off California. Abundance over the study period was variable between years, ranging from an estimated 20 leatherbacks (1995) to 366 leatherbacks (1990) (Benson *et al.* 2003).

Initially, genetic analyses of stranded leatherbacks found along the West Coast determined that the turtles had originated from Western Pacific nesting beaches. Furthermore, genetic analysis of samples from leatherback turtles taken off California and Oregon by the DGN fishery and in the northern Pacific, taken by the California-based longline fishery, revealed that all originated from western Pacific nesting beaches (i.e., Indonesia/Solomon Islands/Malaysia; P. Dutton, NMFS, personal communication, December, 2003).

In the last five years, researchers have discovered two important migratory corridors of leatherback turtles originating from Western Pacific nesting beaches. Observations of tracked leatherbacks captured and tagged off the West Coast have revealed an important migratory corridor from central California, to the south of the Hawaiian Islands, leading to Western Pacific nesting beaches. Researchers have also begun to track female leatherbacks tagged on Western Pacific nesting beaches, both from Jamursba-Medi and War-mon, Papua, and from the Morobe coast of Papua New Guinea. Most of the females that have been tagged in Jamursba-Medi, Papua, which primarily nest during the late spring and summer, have been tracked heading on an easterly pathway, towards the West Coast or heading north toward foraging areas off the Philippines and Japan. In addition, one female that was captured in central California in 2005 still had a tracking device that had been attached to her on Jamursba-Medi, confirming this trans-Pacific migration (P. Dutton, NMFS, personal communication, 2005). Research and tagging of leatherbacks is part of ongoing work by the SWC.

For a full description of the status of leatherback sea turtles and all sea turtle species that may be found in the proposed action area, see the draft EA written for the DGN EFP (NMFS and PFMC 2006) or the 2006 biological opinion written for the DGN EFP (NMFS 2006c). The following is a very brief review of the basis status of leatherbacks in the Pacific.

Based on published estimates of nesting female abundance, leatherback populations are declining at all major Pacific basin nesting beaches, particularly in the last two decades (NMFS and USFWS 1998b; Spotila*, et al.* 1996; Spotila*, et al.* 2000). Declines in nesting populations have been documented through systematic beach counts or surveys in Malaysia (Rantau Abang, Terengganu), Mexico, and Costa Rica. In other leatherback nesting areas, such as Papua New Guinea, Indonesia, and the Solomon Islands, there have been no systematic consistent nesting surveys, so it is difficult to assess the status and trends of leatherback turtles at these beaches. In all areas where leatherback nesting has been documented, however, current nesting populations are reported by scientists, government officials, and local observers to be well below abundance levels of several decades ago. The collapse of these nesting populations was most likely precipitated by a tremendous overharvest of eggs coupled with incidental mortality from fishing (Eckert 1997; Sarti*, et al.* 1996).

In both the eastern Pacific and Western Pacific, leatherbacks are threatened by poaching of eggs, killing of nesting females, human encroachment on nesting beaches, incidental capture in fishing gear, beach erosion, and egg predation by animals. In May 2004, researchers, managers, and tribal community members with extensive knowledge of local leatherback nesting beach populations and activities in Papua (Indonesia), Papua New Guinea, the Solomon Islands, and Vanuatu assembled in Honolulu, Hawaii, to identify nesting beach sites, and share abundance information based on monitoring and research, as well as anecdotal reports. Dutton, *et al.* in press estimates that there are between 2,000 and 5,000 nesting females in the Western Pacific. Although information on trends in abundance is not available, making it difficult to assess the health of the population.

Determining the likelihood of leatherback take is difficult due to a lack of observer records from fisheries utilizing the methods proposed in this action. In the Hawaii based SSLL, where gear and bait modifications to reduce sea turtle bycatch have been implemented, CPUEs of leatherbacks were highly variable over the past three years reflective of the dynamic nature of interactions between sea turtles and fishing gear. Also, it is not clear if CPUEs from Hawaii may be applicable to the West Coast EEZ given the differences in fishery effort and leatherback behavior in the two areas. However, if the leatherback CPUE used in the 2004 biological opinion for the Hawaii pelagics FMP (NMFS 2004c) is applied to the level of effort proposed in the SSLL EFP, the anticipated rate of take is very low. Based upon the distribution of leatherbacks within the proposed action area and record of observed takes in the Hawai-

based SSLL, it is possible that a small number of leatherbacks may be taken as a result of fishing under the SSLL EFP.

As explained above in section 3.4.1.1, the exposure analysis provided here has relied primarily upon observer records from the DGN fishery operating primarily off the coast of California, with limited effort off the coast of Oregon and a ban on DGN gear in waters off of Washington State. Records from the experimental thresher sharks DGN in the EEZ off Washington were examined for rates of impacts on sea turtles. While no sea turtles were observed in 1986 and 1987, the first two years of the experiment, logbook entries indicate one leatherback taken in 1986. Perhaps most striking is the level of observed leatherback takes in 1988; 13 leatherbacks taken in 68 observed sets, yielding a CPUE of 191.2 leatherbacks per 1,000 sets (the estimated leatherback CPUE, north of Point Conception, is 7.7 turtles per 1,000 sets). The reason for the high CPUE can not be explained with the limited data available at the time of this writing, but high densities of leatherbacks are suspected to exist around the mouth of the Columbia River (between Washington and Oregon). As described in section 3.2.1.1 for marine mammals, if SSLL sets are made in the waters off Washington, anticipated effects on sea turtles, particularly leatherbacks, may be different than those presented in this analysis.

Loggerhead Sea Turtles

In order to determine whether or not loggerhead sea turtles may be affected by the proposed action observer records were reviewed along with an extensive review of the literature on loggerhead distribution within the north Pacific. Loggerhead sea turtles have not been observed incidentally taken in the DGN fishery north of Point Conception. All but one observed takes of loggerheads occurred during years in which an El Niño had been declared and all but two occurred with the SCB, as described in the proposed action, there will be no SSLL fishing in the SCB under this EFP. The observed takes in the DGN fishery are likely related to oceanographic conditions and its effects on the distribution of loggerheads. The waters off Baja, California, Mexico, have been identified as a key feeding area for juvenile and sub-adult loggerheads where they feed on their primary prey, red crab, which are found in high concentrations in coastal warm waters off Baja. Observer records from the DGN fishery strongly suggest that juvenile loggerheads only move into the waters off California during El Niño years and are generally found within the SCB, where SSLL fishing will not occur under the proposed action. However, to better understand the distribution of loggerheads throughout the Pacific and particularly differences in the likelihood of exposure in the proposed SSLL fishery and the Hawaii-based SSLL fishery, a review of the recent literature was done.

Recently, satellite tracking of loggerheads has provided insights into their behavior and distribution in the Pacific. Loggerheads exhibit shallow dive patterns with >90 percent of their dives within the top 40 m of water (Polovina *et al*. 2004), which is similar to the hook depth range of the proposed fishing gear (hook depths of 40–45 meters below the water's surface). Genetic analysis of loggerheads that may be exposed to the longline gear indicate that they are likely to be from nesting beaches in Japan (95 percent) and Australia (five percent) and forage off Baja California (Bowen *et al.* 1995) and the Central North Pacific. Satellite tracking of loggerheads indicates that they occupy a wide range of SST from 15–25° C while in the Central North Pacific, although tracks of turtles within narrowly defined temperature bounds were also observed (Polovina *et al.* 2004). The published temperature range is within the stated preferred water temperature for fishing under the proposed action. However, based upon recent satellite tracking and ongoing studies it does not appear that the waters of the West Coast EEZ are utilized by loggerheads. Satellite tracking indicates that loggerheads tagged and released from north Pacific fisheries and from Japan travel in the North Pacific Transition Zone (NPTZ) and the Kuroshio Extension Current perhaps spending years as juveniles feeding in these large Pacific currents (Polovina *et al.* 2004, Polovina *et al.* 2006). Satellite tracks of juvenile loggerheads in the NPTZ end at approximately 130° W longitude (Polovina *et al*. 2004) which is the eastern boundary of the Sub-Arctic and Sub-Tropical gyre in which the

NPTZ is found, This area is east of the proposed action area and one the western edge of the California Current. It has been speculated when the gyre meets the south moving California Current, objects in the gyre, including juvenile loggerheads, are moved into the waters off Baja (Nichols *et al*. 2000). After spending years in the nearshore environment feeding, loggerheads head back across the Pacific to nesting beaches in Japan and Australia. Limited satellite tracking of loggerheads tagged in Baja indicate a due east movement that suggests that they may be utilizing the Sub-tropical front at 25°– 30° N latitude (Nichols *et al*. 2000).

Due to a lack of satellite tags of loggerheads east of 130° W longitude, a review of observer records from the California based SSLL fishery outside the EEZ and stranding records were reviewed for indications of loggerheads in the proposed action area. The California based SSLL was observed for three years and loggerhead takes observed, with high concentrations between 140°–150° W longitude. However, there were no observed takes at or east of 130° W longitude (NMFS observer program). To further assess the likelihood of interactions between the proposed action and loggerheads, observer records were reviewed for loggerhead strandings. The majority of strandings occurred in counties bordering the SCB (e.g., Los Angeles, Orange, and San Diego counties). Less than five strandings were recorded north of the SCB. This is consistent with oceanographic differences between the two areas, with warmer waters to the south of Point Conception and colder waters to the north. The available data suggests that while loggerheads may be occasionally found in waters north of Point Conception and outside the SCB, it is considered quite rare based upon fishery observer records, stranding records observer records, along with the preferred temperature range identified for the species. Taken together this information strongly suggests that loggerheads are unlikely to be found in the proposed action and are unlikely to be affected by the proposed action.

Green Sea Turtles and Olive Ridley Sea Turtles

There has been only one observed take of a green turtle and one observed take of an olive ridley in the DGN fishery since 1990. Generally, both greens and olive ridleys are found in warm waters, greater than 18° C, which is warmer than the targeted SST identified by the applicant. Further, the only observed takes of these species both occurred in southern California during a period of increased upwellings in central and southern California which likely attracted these species and others into the area to feed. The only observed takes of a fin whale and minke whale also occurred in the same area in November 1999. Take of these two sea turtles species is extremely low, particularly in the areas of the proposed action, outside the SCB, where SSTs are generally lower than the preferred temperatures for greens and olive ridleys. It is unlikely that greens or olive ridleys will be affected by the proposed action.

3.4.2.2 Other Actions Contributing to the Baseline Condition of Sea Turtles

Anthropogenic and non-anthropogenic effects on leatherback sea turtles include poaching of eggs, killing of females at nesting beaches, human encroachment on nesting beaches, incidental capture in fishing gear, beach erosion and microclimate-related impacts at nesting sites (e.g., loss of trees due to deforestation and sub-optimal incubation conditions for eggs in nests), and egg predation by animals, and low hatchling production. In the case of leatherbacks, a number of actions have occurred in recent years to provide better protection of females at nesting beaches, to protect eggs and hatchlings from poaching, and limit direct take of leatherbacks as food. Many of these efforts, particularly in the Western Pacific, have occurred over the past five to fifteen years (WPFMC 2006). Thus, the effects of these actions may not yet be observed in the population, since leatherback populations are tracked by counting nesting females and the age at sexual maturity averages 13 to 14 years old (Zug *et al*. 2002) .

Fishery Effects

Leatherback sea turtles are subject to take in U.S. based fisheries and international fisheries. The following U.S. fisheries are known to take leatherbacks: the Hawaii longline fishery, (shallow and deep set); the Hawaii handline, troll, pole and line fishery; and the West Coast DGN fishery. For each of these fisheries, section 7 consultations have been conducted and the cumulative anticipated takes under the current incidental take statements is 33 takes annually, of which there are projected to be 10 mortalities annually. In the Hawaii-based SSLL fishery, which has observer coverage at 100 percent, a turtle cap is imposed upon the fishery; if 16 leatherbacks are incidentally taken, of which two are expected to result in mortalities, the fishery must close. On March 20th, 2006, the Hawaii-based SSLL fishery was closed after reaching the loggerhead sea turtle cap of seventeen takes. Only one leatherback sea turtle was observed taken before the fishery closed. For all other fisheries, if the take of leatherbacks or other sea turtles in the fishery exceeds the incidental take statement, re-initiation of consultation is required and if necessary emergency rules can be implemented to close the fishery to protect ESA listed species.

A U.S. West Coast-based DSLL fishery has recently developed that may take leatherback, loggerhead, and olive ridley sea turtles. In an initiation package developed to begin section 7 consultation on this component of the HMS FMP, it was estimated that up to six vessels may participate in this fishery, setting approximately 800,000 hooks per year. This level of effort results in an estimated take of one leatherback in three years, one loggerhead in three years, and annually one green turtle and three olive ridley sea turtles. NMFS is in the process of conducting a section 7 consultation on this action to determine if these levels of take will result in jeopardy to these species.

In November 2006, the PFMC sent to NMFS an EFP application for a drift gillnet fishery to operate within the currently closed time and area for the 2007 season (August 15 through November 15 annually in the waters north of Point Conception). The EFP application includes limits on the number of participants and sets and would be managed under a sea turtle cap of two leatherback sea turtle takes (incidental entanglements). NMFS is in the process of evaluating this EFP application.

Very few international fisheries have observer programs; therefore, take of sea turtles in most fisheries is unknown. It is difficult to quantify effects since so little is known about the leatherback takes, including which populations, eastern Pacific or Western Pacific, these takes may be affecting. A complete review of fisheries that are known to take, or may take, leatherback sea turtles is provided in the NMFS 2004c biological opinion on the HMS FMP (NMFS 2004c). The Japanese tuna longline fishery and the coastal setnet and gillnet fisheries in Taiwan are known to incidentally take a low number of leatherbacks, they are cumulatively estimated to take less than 30 animals annually. The Eastern Tropical Pacific purse seine tuna fishery has a requirement of 100 percent observer coverage on large vessels, which make up 66 percent of the fleet. Observer records indicate that only one leatherback was observed taken in this fishery (J. Kondel, NMFS, SWR, personal communication, 2006).

One of the biggest fishery impact on Pacific sea turtles is from various tuna longline fisheries. It is difficult to quantify the impacts on leatherbacks of the foreign tuna longline fleet in the central and Western Pacific. Observer levels are very low, less than one percent, and there are no observers on Japanese, Korean, or Australian distant water fisheries (NMFS 2004c). From these low observer rates, it has been estimated that 2,182 sea turtles are taken, and 500–600 turtles killed, annually in the various tuna longline fisheries in the central and Western Pacific (NMFS 2004c). The species taken, in order of highest to lowest occurrence, are: olive ridley, green, leatherback, loggerhead, and hawksbill (NMFS 2004c).

Non-fishery Effects

As described above, a number of non-fishery anthropogenic actions may affect leatherbacks, these include: poaching of eggs, killing of females at nesting beaches, human encroachment on nesting beaches, incidental capture in fishing gear, beach erosion and microclimate-related impacts at nesting sites (e.g., loss of trees due to deforestation and sub-optimal incubation conditions for eggs in nests), and egg predation by animals, and low hatchling production. There are also natural phenomenons that may affect leatherbacks which are detailed in the following paragraphs.

The effects of climate on sea turtles are just beginning to be studied and are largely still speculative. Nonetheless, long-term changes in climate could have a profound effect of leatherbacks and other sea turtles. Changes in temperature (rising air temperatures) may affect nesting success; very high temperatures while eggs are incubating in the sand may kill the offspring. The sex of turtles is temperature dependent, that is, eggs incubated at higher temperatures produce more females while eggs incubated at lower temperatures result in more males. Increased air temperatures may result in a bias of the sex ratio of offspring, which over the long-term could lead to reduced fecundity (insufficient males to fertilize eggs). Thus, while the number of nesting females may be stable or increasing, the eggs may not be viable or the hatchling output may not produce a balanced sex ratio necessary for future successful reproduction.

The climate may also affect turtle nesting habitat. Long-term climate change (e.g., rising average temperatures) will likely result in rising sea levels due to loss of glaciers and snow caps coupled with thermal expansion of warming ocean water which may lead to the loss of usable beach habitat. (Baker*, et al.* 2006). Studies suggest that leatherbacks do not have the same high level of nesting site fidelity as hard shelled turtles, so they may be able to better adapt to the loss of habitat by seeking out new nesting areas. Similarly, short-term climate variability may cause in increase in storm or tidal activity that can inundate nesting sites, causing loss of habitat.

Oceanographic changes due to climate may also affect leatherback sea turtle prey availability, migration and nesting. Leatherbacks that may be exposed to the SSLL EFP are believed to travel across the Pacific for large concentrations of prey, particularly jellyfish. Short term variability in climate such as the El Nino Southern Oscillation (ENSO) may limit prey due to a reduction in upwellings brought by warm surface waters and limited or no wind. Over the longer term, climate models suggest a number of possible changes in oceanographic conditions, including the slowing down of the thermohaline circulation, higher precipitation storms, rising sea surface temperatures and rising sea levels (IPPC 2001). Also, as temperature patterns change in oceans, current foraging habitats may shift (McMahon and Hays 2006). It is believed that leatherbacks migrate along ocean currents and it is possible that currents may change along with other oceanographic features. There is already evidence to suggest that some sea turtles' re-migration periods are being affected by variations in SSTs (Chaloupka 2001; Solow*, et al.* 2002). Finally, loss of nesting habitat due to rising sea levels is an obvious concern (Baker*, et al.* 2006) that will likely need to be factored into recovery planning for the species.

Additional studies will be necessary to determine how climate may be affecting leatherbacks and the entire marine eco-system in the Pacific and elsewhere. The possible effects are included here to provide a very brief review of possible effects and areas of necessary additional study in the field.

Finally, the effects of the December 2004 tsunami have been reported in a report by the signatory states to the Indian Ocean and Southeast Asia Marine Turtle Memorandum of Understanding (IOSEA). The report's assessment of effects on leatherbacks in the region is briefly summarized here. The tsunami hit the northern coast of Indonesia, the country with perhaps the largest nesting populations of leatherbacks. However, the area hit was not a major nesting area. Low nesting densities have been observed in

Sumatra, but nesting does not occur in December. The tsunami did not hit the area where leatherbacks in Malaysia nest. A number of research and conservation centers in Thailand were lost (including the loss of two young volunteers). A small number of leatherbacks nest in the winter along the Indian Ocean in Thailand. Eggs from nests laid before and after the tsunami likely did not survive. Reports in the media shortly after the tsunami suggest that long-term there may be some benefit to sea turtles, as previously developed beaches have returned to conditions closer to pristine. New building regulations may prevent the development of these beaches, thus adding to usable nesting habitat, but at this point such suggestions are speculative. Research is planned by conservation groups in Thailand to assess the longer-term effects of the tsunami on nesting and foraging of sea turtles in the area. In India, all leatherback nests laid were likely lost to the tsunami (which occurred during the nesting season). Some of the most important nesting sites have been severely damaged, although new nest sites may develop due to the creation of new beaches. The longer term effects of the tsunami are at this point speculative, but loss of nesting habitat is a clear concern, along with loss of beach vegetation (vegetation helps prevent beach erosion and provide shade to nest sites). The effects of the tsunami on foraging habitats in all areas are not known, although loss of seagrass, mangroves, and coral reefs has been reported. Fortunately, the major leatherback nesting areas were not affected by the tsunami. Perhaps the greatest loss is within the research and conservation community, which lost not only members, but also facilities, data, and animals. Most organizations are currently trying to re-build their operations.

3.4.3 Other ESA-listed Species

There are other ESA-listed marine animals occurring in the West Coast EEZ. With respect to marine finfish that may occur in the pelagic environment where the proposed action will occur, these are various runs, or evolutionarily significant units (ESUs), of salmon and steelhead. As discussed in section 3.3.3.1, the likelihood that any salmon would be taken by SSLL gear is extremely remote. All other ESA-listed species that may be affected by the proposed action have been described in the preceding sections or in section 3.5.

3.5 Seabirds

Due to the nature of pelagic longline operations and the fishing area under consideration for the proposed action, the only seabirds potentially impacted by this proposed fishery are the black-footed albatross (BFAL, *Phoebastria nigripes*), the Laysan albatross (LAAL, *P. immutabilis*) and the short-tailed albatross (STAL, *P. albatrus*). The brown pelican (*Pelecanus occidentalis*) and Cassin's auklet (*Ptychoramphus aleuticus*) also occur in the proposed action area, but are not likely to be affected, as these species are not known to interact with pelagic longline fishing gear.

3.5.1 Fishing-related Sources of Mortality

3.5.1.1 Pelagic Longline Fishing in the U.S.

U.S.-based pelagic longline swordfish and tuna fisheries in the vicinity of the Hawaiian Islands have the potential to affect albatrosses. NMFS observer records from 1994–2000 (based on four percent observer coverage) estimate an average take of 1,380 BFAL and 1,163 LAAL per year. No takes of STAL in any U.S.-based pelagic longline fishery have been reported. The Hawaii-based swordfish longline fishery was closed by court order in 2001 due to concerns over incidental catch of sea turtles. Seabird incidental catch decreased significantly with the fishery closure. The swordfish fishery based in Hawaii was reopened on a limited basis in 2004, with requirements to conduct sets beginning no earlier than one hour after local sunset and ending deployment no later than one hour before local sunrise, use large 18/0 circle hooks, and carry 100 percent observer coverage. In addition, all swordfish-target sets are to use thawed

and blue-dyed bait. Observers have documented 10 BFAL and 71 LAAL captured in this fishery since it reopened in 2004, with 2,133,096 hooks observed.

The Hawaii-based tuna, or deep-set pelagic longline fishing vessels are not required to use any seabird deterrents when fishing south of 23° N latitude, generally south of the southernmost short-tailed albatross observations in Hawaii. When fishing north of 23°N latitude, these vessels are required to use a line-setting machine, minimum 45 g weights on branch lines, thawed and blue-dyed bait, and strategic offal discharge.

3.5.1.2 Trawl Fishing in the U.S.

U.S.-based trawl fisheries also have the potential to affect albatrosses. In some trawl fisheries, sonar equipment mounted on the trawl net transmits sonar data to the vessel via a "third wire" or "net sonde" cable. Seabirds attracted to offal and discards from trawl vessels may either strike the hard-to-see cable while in flight, or get caught and tangled in the cable while they sit on the water. USFWS is currently investigating the possibility of seabird collisions with U.S.-based trawl fishing gear, both with third wires and with warp cables (the larger diameter, more visible cables running to the trawl doors).

3.5.2 Non-fishing-related Sources of Mortality

USFWS lists current non-fishing threats to STAL as: catastrophic events at breeding colonies, climate change and oceanic regime shift, contaminants, air strikes, disease/parasitism, predation and other natural factors, invasive species, and other human activities (USFWS 2005). BFAL and LAAL experience many of the same threats as the STAL.

3.5.3 Current Status of Seabird Populations

Three species of albatross are known to occur within the region with STAL are listed as endangered. The BFAL is the most abundant albatross off the West Coast of Canada and the United States, ranging throughout the north Pacific between 20° N latitude and 58° N latitude, but more eastern in its at-sea distribution than the LAAL (Cousins and Cooper 2000). The estimated number of BFAL worldwide is approximately 290,000, of which 58,000 pairs (116,000 birds) bred in 2001–2002 (USFWS data 2002). The conservation status for BFAL under the World Conservation Union (IUCN) criteria for threatened species is "Vulnerable," due to an observed 20 percent or more population decrease over three generations (~45 years). While the LAAL is less common in the West Coast EEZ, it is the most abundant albatross Pacific-wide with an estimated 2,200,000 individuals (USFWS data 2002), with centers of concentration in the central and western Pacific (Cousins and Cooper 2000). Numbers of breeding LAAL have declined over the last five years in the two largest colonies of this species (USFWS data 2002). IUCN status for the LAAL is "Lower Risk-Least Concern." Both the BFAL and LAAL nest principally in the Hawaiian Islands, mate for life, and lay only one egg in a single season. The BFAL occurs off the West Coast primarily from spring through fall but can be found year round; breeding birds begin returning to the Hawaiian Island chain in October. During egg-laying, incubation, and early chick feeding, which lasts from December through March, these birds are generally more concentrated near the breeding islands, although some may still travel considerable distances. The LAAL also occurs uncommonly off the West Coast year round, primarily in summer during the non-breeding season.

The STAL has rarely been sighted off the West Coast of the United States or off Mexico in recent history, and has not been observed to interact with any West Coast HMS fishery. It is nonetheless highly endangered, has historically occupied West Coast EEZ waters, and will likely return to its former range as its population recovers (and may have already begun to do so). Of the 23 sightings of this species off the West Coast since 1947, 74 percent have been made in the last two decades (1983–2000) with 88 percent

occurring from August–January (Roberson 2000). This temperate and subarctic species breeds only on the western Pacific islands of Torishima and Minami-Kojima in Japan. The most recent estimate of its population includes 1,712 individuals on Toroshima and 340 individuals from Minami-Kojima (USFWS 2005). In summer (i.e., the nonbreeding season), individuals appear to disperse widely throughout the historical range of the north Pacific, with observed concentrations in the northern Gulf of Alaska, Aleutian Islands, and Bering Sea. Individuals have been recorded as far south as the Baja Peninsula and south to about 20° N latitude off the Pacific coast of Mexico (USFWS 2000). Its current distribution may also be complicated by identification problems. For the untrained observer, even though the STAL is the largest albatross and has an extremely large pink bill, during its various plumage stages it can be confused with BFAL and LAAL (Mitchell and Tristram 1997). The STAL is currently listed as Endangered throughout its range under the ESA, including U.S. waters (65 FR 46643, July 31, 2000).

3.6 Socioeconomic Environment

3.6.1 West Coast Highly Migratory Species Commercial Fisheries for Swordfish and Shark

Since there is currently no longline fishery within the West Coast EEZ, the discussion in this section focuses on other closely-related fisheries which target swordfish and either take place in the West Coast EEZ or land in West Coast ports. Where it is relevant, additional discussion is included on the Hawaii pelagic longline fishery for swordfish.

The socio-economic characteristics of the West Coast Highly Migratory Species commercial fisheries for swordfish and shark are described in sections 2.2.4–2.2.5 of the HMS FMP and Section 2.0 of the September 2006 HMS Stock Assessment and Fisheries Evaluation (SAFE) report which was prepared by NMFS. Historical measures of economic performance for these fisheries are provided in Section 4.1 of the 2006 HMS SAFE. Relevant portions of these descriptions are incorporated below as background on the socio-economic environment in which the EFP would operate.

Swordfish and shark are currently harvested commercially within the U.S. EEZ by two principle gear types, drift gillnet and harpoon. In addition, swordfish are occasionally caught by anglers in the private recreational and CPFV fleets. A California-based high seas longline fishery (with effort outside the U.S. EEZ) which is allowed to land its catch in California ports developed in the 1990s. Longline fishing effort is prohibited within the West Coast EEZ; the proposed EFP would provide an exemption to this prohibition to allow the sole applicant the opportunity to fish a limited number of sets within the West Coast EEZ.

California's commercial swordfish industry transformed from primarily a harpoon fishery to a DGN fishery in the late 1970s, and landings soared to a historical high of 286 mt by 1984. Initial development of the DGN fishery in the late 1970s was founded on catches of common thresher shark. The thresher shark fishery rapidly expanded, peaking at more than 900 mt in 1981. After 1981, swordfish became the primary target species for the fleet, because it commands a higher price-per-pound than thresher shark, resulting in a decline in reported thresher shark landings to lows of the late 1980s and early 1990s. However, common thresher is still a target species of the DGN fishery and is commonly landed with swordfish. Since 1990, annual landings and ex-vessel revenue for thresher shark have averaged 169 mt and $500,179, respectively. The number of DGN vessels landing swordfish declined from 228 in 1985 to 43 in 2004. Since 1984, annual landings and ex-vessel revenues have been declining in general, averaging 354 mt and $2.5 million, respectively.

A key question which this EFP would help address is that of whether longline fishing subject to gear restrictions and continuous monitoring represents an economically and environmentally superior

alternative to either DGN or harpoon gear for fishing within the West Coast EEZ. The Hawaii pelagic longline fishery achieved roughly an 89 percent reduction in marine turtle bycatch when use of circle hooks became mandatory in 2004 (Gilman et al. 2006d).

3.6.2 U.S. Swordfish Demand

It is informative to consider recent changes in the share of U.S. swordfish demand which is provided by U.S. landings versus imports. Besides providing insight to the health of the U.S. commercial swordfish fishery, such statistics also shed light on changes in the amount of U.S. demand which is met by foreign swordfishing landings. Since protected marine turtles are migratory species, an increase in foreign swordfish landings to meet U.S. import demand could potentially have implications for the global level of marine turtle bycatch. It is also important to note that U.S. regulators cannot generally monitor nor control bycatch in foreign fleets.

U.S. annual swordfish demand is comprised of that year's U.S. landings plus imports. Annual demand reached a record high in 1998 due mainly to increased imports (Table 3–15). Between 1989 and 2005, U.S. annual swordfish demand ranged from between 10,948 metric tons (mt) and 23,114 mt, averaging 16,556 mt. During this period, US landings averaged 6,444 mt (about 39 percent of demand) and imports, 10,111 mt (61 percent). US landings of swordfish showed a general pattern of decline from the early 1990s through the early 2000s, with landings in 2005 of 3,039 mt at only 28 percent of the record landings of 10,851 recorded in 1993.

The share of US swordfish demand supplied by landings into Hawaii and the states of Washington, Oregon, and California are 10-47 percent of total U.S. supply during 1989-2005 (Table 3–16), with a lower share of the total since 2000 than before. Between 24-73 percent of US swordfish landings are supplied by Pacific landings during the same period.

The share of US swordfish demand supplied by imports increased from 35 percent in 1993 to 77 percent of the total in 2005. In 2005, U.S. imports of swordfish were 10,187 mt, valued at about $77 million. Singapore, Panama, Canada, and Chile were the dominant suppliers of imports. Over the entire period from 1989 through 2005, imports increased from rough parity with U.S. landings to over three times domestic landings in recent years.

Table 3–15. U.S. annual swordfish demand, 1989-2005.

Year	U.S. Landings	Imports	Demand	Share of Demand (%)	
	(metric tons)-			U.S. Landings	Imports
1989	6,801	6,813	13,614	50%	50%
1990	6,993	7,476	14,469	48%	52%
1991	8,583	7,171	15,754	54%	46%
1992	9,647	6,883	16,530	58%	42%
1993	10,851	5,838	16,689	65%	35%
1994	7,404	4,379	11,783	63%	37%
1995	6,267	4,681	10,948	57%	43%
1996	6,100	5,140	11,240	54%	46%
1997	6,499	15,598	22,097	29%	71%
1998	6,832	16,282	23,114	30%	70%
1999	7,454	13,843	21,297	35%	65%
2000	8,004	14,314	22,318	36%	64%
2001	4,266	13,698	17,964	24%	76%
2002	3,930	15,712	19,642	20%	80%
2003	4,142	13,150	17,292	24%	76%
2004	2,742	10,726	13,468	20%	80%
2005	3,039	10,187	13,226	23%	77%
2006	N/A	10,334	N/A	N/A	N/A
Average(1989-2005)	6,444	10,111	16,556	39%	61%

Sources: U.S. Department of Commerce. 2007. U.S. Foreign Trade . U.S. Department of Commerce. 2007 Commercial fishery landings.

Table 3–16. Pacific swordfish landings, 1989-2005 (metric tons).

Year	Total U.S. Supply (1)	Pacific landings (2)	Pacific Share (%) of U.S. Supply (2)/(1)	Pacific Share (%) (2)/ U.S. Landings
1989	13,614	1,642	12%	24%
1990	14,468	2,831	20%	40%
1991	15,727	4,980	32%	58%
1992	16,529	6,482	39%	67%
1993	16,689	7,887	47%	73%
1994	11,783	5,065	43%	68%
1995	10,948	3,827	35%	61%
1996	11,239	3,854	34%	63%
1997	22,097	4,333	20%	67%
1998	23,114	4,653	20%	68%
1999	21,297	5,127	24%	69%
2000	22,318	5,611	25%	70%
2001	17,963	2,503	14%	59%
2002	19,641	2,035	10%	52%
2003	17,292	2,282	13%	55%
2004	13,468	1,422	11%	52%
2005	13,226	1,860	14%	61%

Sources: U.S. Department of Commerce. 2007. U.S. Foreign Trade . U.S. Department of Commerce. 2007 Commercial fishery Landings.

3.6.3 West Coast Ports Involved in HMS Fishing

Communities which would primarily benefit from any increase in commercial catch due to EFP effort would include ports along the California coast from Eureka to San Diego. Any increase in longline revenues would create an economic impact through the local economies.

Only one fisherman, the EFP applicant, would be directly impacted by the EFP, as the sole EFP participant. This fisherman has invested a great deal of time, money, and lost value of alternative employment opportunity in acquiring the human capital (fishing skills) and gear (boats, nets, etc.) whose value may only be realized through the opportunity to fish.

A key benefit of catch from the EFP would be to provide a local supply of fresh fish to area buyers and processors. Area restaurants would benefit from having a reliable local supply of fresh swordfish. The availability of fresh locally caught fish would be of particular value since the alternative is to rely on fresh swordfish imported from fisheries with potentially higher levels of protected species bycatch due to less stringent environmental regulation than U.S. EEZ fisheries (Dutton and Squires 2007).

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Estimating Change in Efforts under the Alternatives

The impact analysis in this EA is based on estimates of the change in effort from a baseline level, or the No Action Alternative, that would occur under each of the action alternatives. As referenced in the description of the baseline condition in Chapter three, the quantitative estimation of potential impacts for the proposed action on target and non-target finfish can utilize in a proxy fashion observer records from two existing HMS fisheries. These fisheries are the Hawaii-based SSLL fishery for trips using circle hooks and mackerel-type bait and the California-based DGN fishery. These estimates are not ideal in the comparative sense given that the SSLL fishery, although employing almost identical gear as the proposed action is prohibited from the coastal, more temperate waters of the proposed action; and the DGN fishery, although it overlaps to some degree the proposed action area and season, employs a non-comparable gear type. For this EA, it was deemed a better fit to utilize the Hawaii-based SSLL observer records for those trips that took place after January 2004, coinciding with the implementation of, among other measures, the mandatory use of circle hooks and mackerel bait. These trips and records match the gear and operational methods the proposed action will employ but do not fish a comparable species list and distribution based on oceanography differences between the tropical and temperate coastal habitats fished.

The applicant is unable at this time to define the exact number of hooks per set that he will deploy for a given trip or how many sets will occur, up to the maximum of 14 per trip. A range of effort estimates were drawn up based on a low estimate of 400 hooks deployed per set, a moderate or average estimate of 1,000 hooks per set, and a high estimate of 1,200 hooks per set. The moderate figure is based on the applicant's estimate of an average number of hooks that he can efficiently fish per set once he reaches full production fishing and other operational mitigating factors are catered for. The first trip and sets will most likely be expended in an exploratory fashion given the applicants inexperience with the gear type fishing in the proposed action area. As a result, the hooks per set may start out near the low end of the range and gradually increase towards the stated average once proficiency sets in.

The impact estimates will assume all four trips will be conducted with the maximum of 14 sets per trip carried out (i.e., most liberal interpretation of potential impacts). The two EFP action alternatives include, among other mitigation measures, a set limit and catch quotas to reduce the potential take for protected species such as striped marlin. The alternatives include area constraints as well but these constraints may or may not constrict effort for the proposed action given the limited scope and window of opportunity.

4.2 Impacts of Alternative 1 (No Action)

Alternative 1, the no action alternative, represents the state of the environment if the EFP was not issued and the fishery did not occur. Chapter three describes the baseline environment, including past, present, and reasonably foreseeable future actions contributing to cumulative effects. The resources in question, finfish, marine mammals, sea turtles, and seabirds would continue to be affected by those other activities. Thus, chapter three provides a description of the effects under the no action alternative.

4.3 Impacts of Alternatives 2 and 3 on Finfish

Impacts to target, non-target, and prohibited finfish species are principally reflected in increased catches of these species, which are a function of the estimates of change in effort discussed in Section 4.1. Evaluation of the consequences of the alternatives includes the entire affected environment, as described in Chapter three of this document.

4.3.1 Evaluation Criteria

In order to evaluate the potential impact of the alternatives on the resources in question, a set of criteria were developed to help determine whether any of the alternatives are likely to result in significant adverse impacts to finfish. For the target, non-target, and prohibited species finfish interactions under the various alternatives, the following criteria are used:

- Would the alternative likely result in catch levels that would create an "overfished" or "overfishing" condition for any of the HMS FMP management unit species?

- Would the alternative likely result in catch levels that would exceed any of the management objectives of the HMS FMP?

- Would the alternative likely result in catch levels that would contribute to a substantially elevated conservation concern for prohibited species under the HMS FMP?

- Would the alternative provide sufficient monitoring to ensure that management objectives of the HMS FMP are being adhered to and that needed data elements are collected for future management decisions?

For each criterion above, the effects are measured in terms of estimated effort in number of hooks (as discussed in Section 4.1) for the alternatives, and the corresponding catch based on the CPUE estimates from the HI-based SSLL fishery observer data for trips utilizing circle hooks and mackerel-type bait outside the EEZ. These trips reflect the mandatory management measures instituted per the court order that re-opened the fishery and reflect the current state of affairs in the fishery today. Table 4–1 provides effort estimates in number of sets associated with the action alternatives.

4.3.2 Direct and Indirect Impacts of Alternative 2

Impacts to target, non-target, and prohibited finfish species under alternative 2 are principally reflected in increased catches of these species, which are a function of the estimates of change in effort discussed in Section 4.1. Evaluation of the consequences of the alternatives includes the entire affected environment, as described in Chapter three of this document.

Projected catches of target, non-target, and prohibited finfish species are presented in Table 4–1 utilizing the Hawaii-based SSLL observer records as a proxy for trips utilizing circle hooks and mackerel-type bait outside the EEZ. As mentioned previously, it is uncertain if the proposed EFP catches will be similar to the catch rates observed in the Hawaii-based SSLL fishery given the disparate areas fished and the dissimilar oceanographic features between the more coastal, temperate California Current System and the more tropical off-shore waters near Hawaii.

Catch estimates are provided for the low (400 hooks) and high (1,200 hooks) effort estimates that the applicant supplied in the EFP application. These estimates are then multiplied across the maximum number of sets per trip (14) and total trips (4) to come up with projected maximum take in numbers of animals. An additional column, providing catch estimates for 1,000 hooks per set, is included based on the applicant's best guess of probable average hooks-per-set of effort once he gains experience in the fishing method and area.

The estimated impacts are addressed in the summary evaluations (section 4.3.4) for the major non-target tunas, sharks, and finfish that cover the HMS FMP objectives, among other things, of maintaining

sustainable fisheries and managing fishing mortality levels based on established control rules and thresholds outlined in the HMS FMP (PFMC 2003).

Using the highest potential effort scenario (67,200 hooks), coupled with the observed CPUE estimates presented in Table 4.1, the proposed action would harvest in order of magnitude an estimated 1,153 target swordfish, 850 blue sharks, 235 dorado, 105 bigeye tuna, 59 shortfin mako sharks, and 57 striped marlin. The impacts for bigeye tuna and shortfin mako sharks are discussed in the Summary Evaluation section (4.3.3) for these species. U.S. longline bigeye tuna catches in the Pacific are subject to an annual quota of 500 mt. The catch of bigeye tuna under this EFP would be monitored for accounting and compliance with the annual quota and would therefore be a part of conservation measures established by the IATTC and implemented by NMFS. The impacts for striped marlin are discussed under Alternative 3 (4.3.2) for establishing take caps but as previously mentioned the status of the population appears to be healthy and the estimated catch is very minor and would not have an adverse impact on the population status.

The estimated harvest of swordfish represents a very minor fraction of the annual catches in the EPO. The lack of contrast in the standardized catch and effort series in the northern and southern regions of the EPO suggests that the fisheries that have been taking swordfish in these regions have not been of a magnitude sufficient to cause significant responses in the populations. In addition, catches in the region have been fairly stable since 1989, averaging about 3,700 mt in the northern region and 8,400 mt in the southern region annually. Based on these considerations, it appears that swordfish are not overfished in the northern and southern regions of the EPO (Hinton*, et al.* 2004). Swordfish stocks have not been declared overfished or undergoing overfishing nor are there currently quotas or harvest guidelines in place under the HMS FMP.

There are high catch rates of blue shark in HMS fisheries targeting swordfish, including the West Coast DGN fishery and SSLL fisheries prosecuted by Hawaii-based and (in the past) California-based vessels. The use of circle hooks and other mitigation measures, as would be required under the EFP, does not appear to reduce blue shark catch rates but does appear to increase survivorship. Hawaii SSLL observer records for trips utilizing circle hooks, mackerel-type bait, and de-hooking pliers (162 trips, June-March, 2006), indicate that approximately 95% of captured blue sharks were released alive. Available information about the stock (admittedly limited) indicates that the North Pacific stock is not over-exploited. However, the blue shark is listed as "near threatened" world-wide by the IUCN and California CPFV skippers operating in the SCB report fewer observations of blue sharks than in previous years. This observation is supported to some degree by NMFS Shark Abundance Survey data for the years 1994-2006 (Suzy Kohin, Southwest Fishery Science Center, personal communication, March 12, 2007). Estimated blue shark mortality under the EFP, however, would represent a small incremental increase in overall fishing mortality.

Table 4–1 Projected EFP catch in numbers of animals using Hawaii-based SSLL observer records for trips utilizing circle hooks and mackerel-type bait outside the EEZ.[9]

Species	Projected EFP catch (no.) for trips utilizing circle hooks (h) and mackerel-type bait			
	CPUE	22,400 h	56,000 h	67,200 h
	(catch/1000 h)	400 h X 14 sets X 4 trips	1000 h X 14 sets X 4 trips	1200 h X 14 sets X 4 trips
Swordfish	17.16	384.3	960.7	1152.9
Albacore	1.06	23.7	59.2	71.0
Bigeye tuna	1.57	35.1	87.7	105.3
Yellowfin tuna	0.16	3.7	9.1	11.0
Pacific Bluefin	0.00	0.0	0.0	0.0
Skipjack tuna	0.07	1.5	3.7	4.4
Tunas and mackerels	0.02	0.3	0.8	1.0
Blue shark	12.64	283.2	707.9	849.5
Shortfin mako shark	0.88	19.6	49.0	58.8
Unid mako sharks	0.05	1.2	3.0	3.6
Unid sharks	0.00	0.0	0.0	0.0
Bigeye thresher shark	0.02	0.5	1.4	1.6
Pelagic thresher shark	0.00	0.0	0.1	0.1
Unid thresher sharks	0.01	0.1	0.3	0.4
Striped marlin	0.85	19.0	47.5	57.0
Blue Marlin	0.18	4.1	10.2	12.3
Black Marlin	0.00	0.0	0.0	0.0
Shortbill spearfish	0.11	2.6	6.4	7.7
Unid billfishes	0.02	0.4	1.0	1.2
Pelagic stingray	0.09	2.1	5.3	6.4
Remora	0.43	9.7	24.2	29.0
Longnose Lancetfish	1.27	28.4	70.9	85.1
Snake mackerel	0.32	7.2	18.0	21.6
Unid. fish	0.02	0.5	1.3	1.5
Escolar	1.66	37.2	92.9	111.5
Dorado	3.50	78.4	196.0	235.2
Oilfish	0.23	5.1	12.8	15.4
Wahoo	0.07	1.7	4.2	5.0
Sickle Pomfret	0.13	3.0	7.5	9.0
Pacific Pomfret	0.00	0.0	0.0	0.0
Common Mola	0.01	0.2	0.6	0.7
Opah	0.08	1.8	4.6	5.5

4.3.3 Direct and Indirect Impacts of Alternatives 3

The impacts to finfish as a part of alternative 3 centers mainly on the imposition of a catch cap for striped marlin. The option of establishing caps for selected species is discussed in chapter two. The striped marlin stocks in the EPO are considered currently healthy as outlined in section 3.3.2.2. Projected catch

[9] Based on 161 trips and 2,133,096 hooks of observed effort.

of striped marlin, utilizing the Hawaii-based SSLL observer records for circle hook trips as a proxy, is estimated to be 19 animals at 22,400 hooks of effort, 48 animals at 56,000 hooks of effort, and 57 animals at 67,200 hooks of effort (Table 4–1). Given that striped marlin distribution and abundance increases in the more tropical waters targeted by the Hawaii-based SSLL fishery, the actual catch of striped marlin under the proposed action should be less in the more temperate, coastal habitat that will be fished in the proposed action area. An option for establishing a catch cap would be to utilize the Southern California Billfish Club catch records for recreationally caught striped marlin (see Table 4–2) and select a percentage of the annual catch to be reserved as a cap that would address any concerns raised by the recreational fishing community. The catches reported in this database for the most part reflect marlin captured in the SCB, which will be a closed area under the terms and conditions of the proposed action, so direct comparisons are not possible. Given that the rationale for imposing a catch cap may be more aligned with resource user conflicts versus resource conservation concerns, establishing a specific striped marlin time/area closure is another viable option that may achieve the desired results. The peak striped marlin catches in the SCB occur in September, coinciding with a series of major recreational billfish tournaments.

Table 4–2. Striped marlin catches from the U.S. Exclusive Economic waters adjacent to the State of California recorded by major billfishing clubs and Commercial Passenger Fishing Vessels logbook data, 1976–2006.

Year	Balboa Angling Club[1]	Avalon Tuna Club[2]	San Diego Marlin Club[3]	CPFV[4]	AnnualTotal (number)
1976	212	53	210	7	482
1977	386	52	276	12	726
1978	169	32	505	7	713
1979	279	53	344	26	702
1980	147	24	525	58	754
1981	332	77	902	67	1378
1982	232	51	564	33	880
1983	416	121	312	65	914
1984	502	77	155	287	1021
1985	393	79	285	71	828
1986	173	27	196	43	439
1987	311	48	204	168	731
1988	268	17	263	134	682
1989	158	37	343	40	578
1990	293	18	150	108	569
1991	105	23	142	12	282
1992	27	49	64	25	165
1993	104	20	103	30	257
1994	152	30	174	42	398
1995	90	16	132	39	277
1996	172	10	232	21	435
1997	219	62	352	24	657
1998	147	95	149	17	408
1999	70	23	86	3	182
2000	78	29	67	3	177
2001	61	24	67	0	152
2002	23	12	12	3	50
2003	7	20	55	4	86
2004	5	26	117	4	152
2005	78	12	138	18	246
2006	176	31	161	13	381

[1]Data Source: Balboa Angling Club, according to L. Cathcart (personal communication, June 8, 2006)
[2]Data Source: Avalon Tuna Club, according to B. Seibert (personal communication, June 8, 2006)
[3]Data Source: www.themarlinclub.com/Weighins/overtheyears.htm . The 2006 data is preliminary.
[4]Data Source: CDFG CFIS CPFV logbook data; 2006 preliminary.

4.3.4 Summary Evaluation

The evaluation criteria identified in Section 4.3.1 are used below to summarize the overall impacts of the alternatives on finfish.

4.3.4.1 Risk of Overfishing

Target Species

Based on the status summary for the most recent EPO swordfish stock assessments presented in Chapter 3, coupled with the relatively small increase in total effort and catch on a regional basis, the increase in swordfish catch anticipated under the proposed alternatives, would most likely not trigger either an overfished or an overfishing condition. This assessment could change as more information and updated stock assessment work becomes available. This includes elucidation on the two-stock determination for the EPO Pacific swordfish stocks referenced in Chapter three, as well as incorporation of improved catch and effort data from regional large-scale commercial fisheries operating outside the U.S. The U.S. swordfish fishery landings account for approximately 43 percent of the northeast Pacific swordfish landings (north of 5° S latitude and east of 150ºW longitude), based on 2000–2002 data compiled by the IATTC (Hinton*, et al.* 2004). The DGN fishery within the U.S. west coast EEZ contributes roughly 19 percent of the U.S. catch component based on PacFIN records for the same time period (HMSMT 2006). For the alternatives proposed, the fairly small incremental increases in SSLL swordfish fishing effort would most likely constitute a very minor fraction of the composite regional catch and effort targeting swordfish.

Non-target Tunas

Based on the most recent stock assessments, coupled with the relatively small increase in total effort and catch on a regional basis, the increase in major non-target tuna catch under the action alternatives would not trigger either an overfished or an overfishing condition with the exception noted for bigeye and yellowfin tuna. The Pacific Council and NMFS are undergoing action as required by the MSA to reduce fishing mortality below an identified threshold (the default being F_{MSY}). Because these stocks have a wide distribution and the majority of catches are made outside of U.S. waters by vessels from other nations, management measures intended to end overfishing will be implemented through the RFMO framework.

In the case of the north Pacific albacore tuna stock, RFMO regional resource conservation resolutions have been passed requiring member nations, including those identified in this document that fish for north Pacific albacore, to cap the effort of their fishing fleets targeting albacore. The U.S., as a member nation and party to these resolutions, is developing a plan of action to meet this obligation. That plan is in the early stages at this point.

Non-target Sharks

Based on the available stock status and summary information presented in Chapter three of this EA, coupled with the relatively small increase in total effort and catch on a regional basis, the increase in major non-target shark catch under the proposed alternatives would not trigger either an overfished or an overfishing condition.

Other Non-target Finfish

None of the major non-target finfish species taken in the SSLL fishery, such as pelagic stingrays and common molas, are regularly monitored for stock status. Very little is known about their population dynamics, but there does not seem to be a resource conservation concern at this time. These factors would suggest that the major non-target finfish catch under the action alternatives would not trigger either an overfished or an overfishing condition.

4.3.4.2 Failure to Meet HMS FMP Management Objectives

Target Species

Non-target Tunas

The HMS FMP management objectives for albacore, yellowfin, bigeye, bluefin, and skipjack tuna stocks are, among others, those embodied in the goal of the MSA, namely to ensure the long term sustainability of fisheries and fish stocks by halting or preventing overfishing and by rebuilding overfished stocks. A detailed description of the control rules for these HMS FMP management objectives are presented in the HMS FMP (PFMC 2003, Ch 3, p. 9) and will not be repeated here. Based on stock status and summary information presented in section 3.3.2, the alternatives proposed would not at this point conflict with any HMS FMP management objectives taking into account the processes under way to address the overfishing conditions that exist for bigeye and yellowfin tuna. RFMO conservation measures have been put in place to reduce the catch and effort for bigeye and yellowfin tuna and they include, among other things, an annual catch quota of 500 mt for the U.S. domestic longline fishery and seasonal closures for the purse seine fishery, including U.S. vessels that target tuna.

Non-target Sharks

Common Thresher Sharks

A harvest guideline of 340 mt has been established under the HMS FMP for common thresher shark catch. Utilizing the SSLL observer records as a proxy (Table 4–1), the anticipated catch of common thresher shark under the proposed action is negligible. The catch of all thresher sharks using the highest estimated effort of 62,700 hooks, is equal to two sharks. However, common thresher sharks may be more available within the U.S. west coast EEZ than on the high-seas where the Hawaii-based SSLL fishery operates.

Based on the catch estimates projected for the action alternatives, the HMS FMP harvest guideline of 340 mt would not be exceeded by the estimated catch of common thresher shark under the most liberal effort scenario. If, however, the estimated private boat recreational catch of thresher shark is factored into the equation, the overall harvest guideline could be exceeded for the proposed alternatives under consideration. These private boat catch estimates, however, must be used with caution due to the high variances and potentially biased catch estimates (HMSMT 2006, p.20).

Shortfin Mako Sharks

A harvest guideline of 150 mt has been established under the HMS FMP for shortfin mako shark catch. Utilizing the SSLL observer records as a proxy (Table 4–1), the anticipated catch of shortfin mako shark under the highest effort scenario for the proposed action (67,200) is estimated to equal 59 animals. The average round whole weight for shortfin mako sharks caught within the action area, derived from length-weight conversion formula (Kohler*, et al.* 1996), and utilizing at-sea observer measurements for makos

captured in the DGN fishery is estimated to be approximately 37 kgs. Multiplying the average weight of 37 kg. by 59 mako sharks gives an estimated catch of approximately 2.2 mt.

The average DGN catch of shortfin mako shark for the period 2001–2005 is approximately 35.2 mt (HMSMT 2006). Summing the estimated catch under the proposed action results in a total catch estimate of 37.4 mt. This does not exceed the HMS FMP harvest guideline of 150 mt. As noted in regards to the common thresher and blue sharks estimates, private recreational boat catch is not well documented but could contribute a significant component of the overall shortfin mako catch. These private boat catch estimates, however, must be used with caution due to the high variances and potentially biased catch estimates (HMSMT 2006, p.20).

Other Non-target Finfish

There are no HMS FMP management objectives, outside of the aforementioned MSY control rules for HMS management unit species, for the major non-target finfish that may be captured under the proposed action.

4.3.4.3 Elevated Conservation Concern for HMS FMP Prohibited Species

Given the low interaction rates and catch probabilities, coupled with the single vessel and maximum set effort limitation under the proposed action, the impacts on prohibited species are not likely to substantially elevate conservation concerns for the species in question.

4.3.4.4 Sufficient Monitoring

The EFP monitoring protocol requires 100 percent observer coverage for all trips and observer protocols require monitoring the entire set and haul-back sequences. As such, there would be more than an adequate amount of monitoring in place to ensure that HMS FMP management objectives are adhered to for the proposed action.

4.4 Impacts of Alternatives 2 and 3 on Protected Species

4.4.1 Evaluation Criteria

In an attempt to compare the alternatives, the following questions were developed by which to judge the effects of each alternative:

1. Would the anticipated level of marine mammal take under the alternative result in average annual mortalities equal to or greater than a stock's PBR?

2. Would the anticipated level of marine mammal take under the alternative result in average annual mortalities equal to or greater than 10 percent of a stock's PBR?

3. Would the anticipated level of sea turtle take under the alternative result in mortalities that would exceed the existing incidental take statement (ITS) for the HMS FMP?

Given the limited data available, the evaluation of the alternatives is necessarily qualitative and based upon the best available information at this time.

In section 3.4, an exposure analysis was conducted to determine which species have the highest risks of exposure and effects on protected species under the proposed action. In this exercise, the alternatives

were not differentiated as the two action alternatives are very similar in terms of protected species impacts. The only difference is that alternative 3 includes caps on various marine mammal and sea turtle species. As described in section 3.4, it is difficult to project the species than may be affected by the proposed action due in large part to a lack of direct information from a longline fishery within the proposed action area, the West Coast EEZ. Based upon the available information it is believed that small numbers of a few marine mammal species may be taken during the proposed action, these include: California sea lions, northern elephant seals, short-beaked common dolphins, Risso's dolphins, and northern right whale dolphins. In addition, it is possible, although not likely, that a leatherback sea turtle may be taken in the fishery. In order to assess what may happen to animals that encounter the SSLL gear, observer records from other longline fisheries were reviewed. In the California SSLL fishery, outside the EEZ, three marine mammals have been observed entangled in gear (two Risso's dolphins and one unidentified dolphin) one was killed. In the Hawaii-based shallow set longline fishery since 2004, all of the marine mammals were recorded as injured and one killed. It must be noted that the format of the information does not provide a means of recording an uninjured animal released unharmed and analysis on serious injuries has not yet been conducted. In the Hawaii-based shallow set longline fishery targeting swordfish prior to 2004, there were 16 observed entanglements of marine mammals. The species observed taken were Risso's dolphin, short-finned pilot whale, sperm whale, spinner dolphin, bottlenose dolphin, short-beaked common dolphin. Ten of the 16 takes were considered serious injuries, one was a mortality (at time of entanglement) and five of the entanglements were not serious injuries (Forney 2004), thus over two-thirds of the entanglements resulted in serious injuries or mortalities. In the Atlantic, the mortality/serious injury rates varied among marine mammal species, but were on average around 50percent (NMFS 2006a). This rate of serious injury/mortality may serve as the best estimate available for this analysis. The rate of sea turtle mortalities in the Hawaii-based based SSLL is very low, less than 1 percent of all turtles caught (Gilman *et al*. 2006b). This rate is lower than the standard NMFS post-hooking mortality rates described below.

4.4.2 Direct and Indirect Impacts of Alternative 2

It is not possible to quantify the number of marine mammals of each species that may be affected by the proposed fishery, as described in previous sections. However, based upon marine mammal take rates in other SSLL fisheries and the biology, abundance, and distribution of the species, the number of individuals taken is likely to be quite low, likely in the range of one to ten depending on the species and their responses to the gear. Based upon observed rates in other SSLL fisheries, it is likely that approximately 50 percent of marine mammals takes in the proposed fishery will result in a serious injury/mortality.

To evaluate the effects of alternative 2 on marine mammals, the current average annual mortalities/serious injuries and related PBRs were examined for those species considered most likely to interact with the proposed fishery. As can be seen in Table 4–3, none of the species that have been identified as most likely to be taken in the fishery are from stocks with low PBRs. The species considered most likely to be affected by the proposed action were estimated based upon the relative abundance of the species, records of take in the DGN fishery (similar to the proposed fishery spatially and temporally), observed takes in other SSLL fisheries, and the behavior and distribution of the stocks.

Table 4–3. The PBRs and most recent annual serious injury/mortalities estimates for marine mammal stocks considered most likely to be affected by the proposed action

Species/stock	PBR	Average annual mortality/serious injury
California sea lion	8.333	1,562
Northern elephant seal	2,513	≥88
Short-beaked common dolphin	3,656	93
Risso's dolphin	115	3.6
Northern right whale dolphin	164	23
Harbor seal, CA stock	1896	≥389

As can be seen in the table, none of the six stocks are being taken in fisheries at a level of average annual mortality/serious injury close to its PBR. However, three of the six marine mammal stocks, CA/OR/WA northern right whale dolphins and California sea lions, have average annual mortalities that are greater than 10 percent of their PBR. Ten percent of PBR has been defined in policy by NMFS as the zero mortality rate goal (ZMRG), which is the goal of each U.S. fishery under the MMPA. If mortalities of northern right whale dolphins or California sea lions occur during fishing under this alternative, any mortalities or serious injuries would move these stocks further from the MMPA goal of ZMRG.

Given the paucity of information available for the exposure analysis and the dynamic nature of the marine environment, it is not impossible that takes of other marine mammal species may occur during the proposed SSLL EFP fishery. Table 4–4 lists the marine mammal stocks that may be exposed to the fishery which have very low PBRs along with the current average annual mortality estimates.

Table 4–4. Marine mammal stocks with low PBRs that could be affected by the proposed action.

Species/stock	PBR	Average annual mortality/Serious injury
Short-finned pilot whale	1.2	1
Sperm whale	1.8	1
Humpback whale	2.3	≥1.6

Short-finned pilot whales and sperm whales have been observed killed and seriously injured in the DGN fishery, with some incidents of multiple animals taken during one set; humpback whales have been observed entangled in DGN gear but have been released alive and not seriously injured (NMFS SWR observer program data). In the Hawaii-based based SSLL, two short-finned pilot whales have been seriously injured or killed in the SSLL fishery prior to 2004; one sperm whale was observed entangled in gear but was not seriously injured (animal was able to free itself without trailing gear) (Forney 2004). The only two accounts of longline interactions with humpback whales in Hawaii comes from the deep-set tuna longline fishery in which one animal was released without serious injury and one was deemed seriously injured due to trailing gear (Forney 2004). If, during the course of fishing under the EFP, a marine mammal is hooked or entangled, removing all gear would be one step the applicant could take to ensure that the animal is not considered seriously injured. Generally, if trailing gear left on a marine mammal the interaction is considered a serious injury (Angliss and DeMaster 1998).

Returning to the questions developed for this analysis, the uncertainty over possible takes in the EFP fishery make it possible that short-finned pilot whales, sperm whales, or humpback whales could be taken at a level that could cause the average annual mortality/serious injury to exceed the stock's PBR. Based upon the best available information, it is not expected that these species would be taken by the proposed fishery, although the likelihood of the SSLL gear interacting with short-finned pilot whales may be higher during an El Niño year or during a period of warm water, as described in section 3.4.

Turning to the second question, as noted above, if mortalities or serious injuries of California sea lions, harbor seals, or northern right whale dolphins occur, the take would exceed 10 percent of PBR for those stocks.

The likelihood of sea turtle take under the proposed action is quite low. Based upon observer records from the DGN fishery, other SSLL fisheries, and the biology and distribution of the species, a very small number of leatherbacks may be exposed to and affected by the proposed action. To evaluate the likelihood of leatherback mortalities, a review of Hawaii observer records since the implementation of mitigation measures in 2004 was reviewed and is provided in Table 4–5.

Table 4–5. Changes in sea turtle hookings observed in Hawaii-based SSLL fishery, before and after implementation of bycatch mitigation measures in 2004.

Turtles observed taken	Deeply hooked	Ingested hook	Lightly hooked	Entangled
Before regulations				
Leatherback (n=31)	0	10%	84%	6%
Hardshelled (n=180) Loggerhead (n=163)	60%	0	38%	2%
After regulations				
Leatherback (n=10)	0	0	100%	0
Loggerheads (n=27)	0	22%	63%	15%

As can been seen in the table, changes in the hook type (18/0 circle hooks with a 10 degree offset and mackerel bait) resulted in substantial changes in the way the animals were hooked. While the precise reason for the change in hookings is still under investigation, the results are encouraging, particularly for hardshelled turtles (i.e., loggerhead, olive ridley, green, and hawksbill sea turtles). See Gilman *et al*. 2006c for a review of longline gear experiments being conducted around the world.

Observer records from the Hawaii-based based SSLL after regulations indicate that all leatherbacks (n=10), were alive and lightly hooked. All species of sea turtles taken in the Hawaii-based based SSLL fishery following the 2004 regulations were alive when brought to the vessel (i.e., no immediate mortalities from drowning in SSLL gear) (Gilman *et a*l. 2006b). Leatherbacks lightly hooked with all gear removed have a post-hooking mortality rate of range 10 to 15 percent, if the hook is not removed and gear is left on the leatherback, post-hooking mortality rates range from 15 to 40 percent (Ryder *et al*. 2006). In the Hawaii-based based SSLL fishery 30 percent of leatherbacks were released without any gear attached, 70 percent were released with gear attached (Gilman *et al*. 2006b). In the Hawaii-based based SSLL fishery, 17 loggerheads were lightly hooked and six were deeply hooked. Of these, 19 of 23 were released without any gear (post-hooking mortality rate of 5 to 10 percent) and 4 were released with gear still attached (Gilman *et al*. 2006b) (post hooking mortality rates of 10 to 30 percent) (Ryder *et al.* 2006).

If the pattern of interactions observed in the Hawaii-based longline fishery also occurs in the proposed longline EFP, then the take of one or two leatherback or hardshelled (e.g., loggerhead) sea turtles is not expected to result in one mortality of an individual from either species. This is based upon the estimated post-hooking survival rate for hardshelled and leatherback sea turtles provided in Table 4–6.

Table 4–6. Post hooking mortality rates of hardshell and leatherback sea turtles in longline gear.

Nature of interaction	Released with hook and line ≥ half the length of the carapace	Release with hook and line < half the length of the carapace	Release with all gear removed
Hooked externally with or without entanglement	20 (30)*	10 (15)	5 (10)
Hooked in lower jaw with or without entanglement	30 (40)	20 (30)	10 (15)
Hooked in cervical esophagus, glottis, jaw joint, soft palate, or adnexa with or without entanglement	45 (55)	35 (45)	25 (35)
Hooked in esophagus at or below level of the heart with or without entanglement	60 (70)	50 (60)	n/a
Entanglement only	50 (60)	50 (60)	1 (2)
Comatose/resuscitated	n/a	n/a	60 (70)

*Hardshell (leatherback rate are in parenthesis)

However, it must be stressed that as incidental takes are difficult to correlate with any particular variable or change in the SSLL fishery gear in Hawaii (Gilman *et al.* 2006b) it is highly unlikely, but not impossible that other species may be hooked and/or higher numbers of animals may be hooked, entangled or killed as a result of this fishery. For example, 77 percent (202 of 264) of all turtles observed captured in the Hawaii-based based SSLL fishery (4,261 sets observed) were caught alone, with the remaining 23 percent caught in clusters (two or more turtles caught in a single set) (Gilman *et al.* 2006b), thus it is possible that one set of SSLL gear could take multiple turtles. The weight of available evidence supports the exposure analysis and estimated low levels of impact on turtle species, but given the paucity of data on this fishery, the actual effects may be more or less than those presented here.

Table 4–7. Incidental take statement for the HMS FMP

Species	Entanglement	Mortality	Conditions
Leatherback	3	2	All years
Loggerhead	5	2	During El Niño years
Green	4	1	SST in fishing area similar to Nov 1999
Olive Ridley	4	1	SST in fishing area similar to Nov 1999

Turning to the question of whether anticipated takes of sea turtles are likely to result in mortalities higher than the current HMS FMP ITS, the current ITS for leatherbacks is three turtles likely to be taken annually with two mortalities in the HMS fishery (in the existing DGN fishery). See Table 4-7 for the current ITS for the HMS FMP. Additionally, NMFS is currently reviewing a DGN EFP for 2007 that would include a cap of two leatherback takes. The 2006 biological opinion on the 2006 DGN EFP concluded that the take of two leatherbacks annually (both likely to be mortalities) is not likely to jeopardize the continued existence of Pacific leatherback sea turtles. A section 7 consultation on this action for the 2007 DGN EFP has not been initiated or conducted. If the patterns of encounters observed in the Hawaii-based based SSLL fishery are applicable to the SSLL EFP, then very few leatherbacks or other sea turtles would be expected to be caught and of those none are expected to be immediately killed. Only a small percentage of hooked turtles would be likely to die, post hooking, as a result of injuries. If not more than two or three leatherbacks were entangled or lightly hooked and all gear removed, then the probability of a mortality would be very low. However, as more animals are taken, the probability of a mortality increases. Due to the uncertainties surrounding the probability of leatherback takes, it can not

be stated with certainty that this alternative would result in levels of mortalities that are either consistent or inconsistent with the existing ITS.

The indirect effects of this alternative on marine mammals and sea turtles are likely to be quite minor. Indirect effects of a fishery on protected species could include displacement of animals out of the area (e.g., harbor porpoise moving out of an area with a high concentration of pingered gillnets in the Atlantic (Dawson *et al*. 1998), loss of forage (e.g., the salmon fishery targeting fish that may be prey for ESA listed killer whales (NMFS 2006b), or destruction of habitat. None of these effects are anticipated under the proposed fishery. Forced submergence of turtles in nets (e.g., gillnets) can lead to drowning, loss of growth, delayed development, diminished productivity, and delayed time to maturity (Ryder *et al*. 2006). However, the gear configuration (long branchlines and limited hooks between each float) makes it likely that hooked sea turtles will be able to swim to the surface. The long-term effects of animals being hooked and released from fishing gear are not known, but it is generally believed that animals released with all gear removed and no other injuries do not suffer from debilitating long-term effects (see Angliss and DeMaster 1998; Ryder *et al.* 2006). It is likely that any animals incidentally taken during this proposed fishery will have all gear removed before being released.

4.4.3 Direct and Indirect Impacts of Alternative 3

The substantive difference between the two action alternatives is that under alternative 3 take caps could be imposed on the EFP to limit the take or mortality of selected species. The imposition of such caps would define the maximum impact (in terms of take, serious injury, or mortality) for selected species. The following discussion provides information to help determine appropriate caps for the protected species that may be affected by the proposed action.

4.4.3.1 Take Caps for Marine Mammals

This alternative's impact on marine mammals is essentially the same as the impacts described under alternative 2, although this alternative would include caps which could provide greater certainty in terms of impacts on protected species. Table 4–8 provides a list of marine mammal species with low PBRs that may be affected by the proposed action or species that have been identified by the Council in past actions as species of concern (ESA listed species are in italics).

Table 4–8. Marine mammals with low PBR values and/or Council species of concern.

Species/stock	Average annual serious injury/mortality*	PBR
short-finned pilot whale	*1*	*1.2*
sperm whale	*1*	*1.8*
Humpback	*≥1.6*	*2.3*
Fin	*1.4*	*15*
Gray	*7.4*	*442*
Minke	*0*	*5.9*

*See Carretta *et al.* 2006 and Angliss and Outlaw 2006 for more details

As noted in the exposure analysis in section 3.4.1, humpback whales and sperm whales have been observed entangled in longline gear in areas other than the proposed area. Utilizing CPUEs from the Hawaii-based SSLL fishery and applying these to the level of effort defined in this action, suggests that the likelihood of take of either of these species is very low. Although given the rarity of these events, quantitative analysis must be viewed with caution as takes may be somewhat random (e.g., the take of a

humpback whale during the NED experiment, the only observed take in the Atlantic longline fishery (Watson *et al*. 2005).

As shown in Table 4–8 two marine mammal stocks have annual average serious injury/mortalities close to its PBR, humpbacks and short-finned pilot whales. In order in ensure that the total average annual serious injury/mortalities of these stocks does not exceed its PBR, the most precautionary approach is to implement a cap on the number of seriously injured or killed individuals from the CA/OR/WA stock of short-finned pilot whales and ENP stock of humpback whales. However, assessing serious injury may be difficult at sea. The current protocol requires that observers record as much information as possible from an entanglement event with marine mammals and take photographs if possible. The SWFSC would review the record and determine if any injuries resulting from the entanglement should be considered a serious injury (defined as an injury likely to lead to mortality). In the Hawaii-based based SSLL targeting swordfish, the majority of observed marine mammal takes (11 of 14) were either serious injuries or mortalities (Forney 2004). The Council may therefore choose to take a precautionary approach and assume that most marine mammal takes could result in a serious injury or mortality and set caps at incidental takes.

Although caps have not yet been determined, it is possible to qualify the relative impacts of this alternative on the marine mammals stocks from which the take(s) may occur. As noted in Table 4–8, there are a number of marine mammal stocks with very low PBRs and three of these have been observed in the DGN fishery, which operates in approximately the same time and area as the proposed SSLL EFP fishery. If caps are implemented for these stocks, there is greater certainty that average annual serious injury/mortalities would not exceed the stock's PBR.

Turning to the questions developed to analyze the impacts of the alternatives on marine mammals, if the Council decides to implement caps on selected marine mammal stocks, based upon the material presented in this section, this alternative offers greater certainty that serious injury/mortalities of marine mammals resulting from this proposed action would not exceed 10 percent of the stock's PBR and/or exceed the total PBR for certain stocks.

4.4.2.2 Take Caps for Sea Turtles

As noted above, it is difficult to estimate the likely bycatch of sea turtles under this proposed action; however, based upon observer records from the Hawaii-based SSLL fishery using similar sea turtle mitigation measures and a review of the biology and distribution of sea turtles that may be in the proposed action area, the level of take is expected to be very low with consequent low levels of post-hooking mortalities. The exposure analysis in section 3.4 suggests that only a small number of leatherbacks may be affected by this action. Loggerheads could be affected, although this is more likely during El Niño events or periods of unusually warm water (NMFS 2001). It is not possible at this time to know whether an El Niño may occur during the fall of 2007 or whether warm water conditions observed over the past two years in the West Coast EEZ will occur in 2007. However, as described in preceding sections, the likelihood of loggerheads being affected by the proposed fishery is extremely low in part due to the proposed action area, which excludes the SCB.

Similar to the analysis of this alternative for marine mammals, setting turtle caps provides greater certainty that the level of impact on sea turtles is minimized, although impacts are expected to be very low. As described above, observer records from the Hawaii-based SSLL may provide the best insight into the effects of the fishery on individual turtles (e.g., the ways in which turtles may be hooked, immediate mortality rates, etc). A review of those records suggests that take levels will be very low. NMFS will be conducting a section 7 consultation on this action and it is recommended that turtle caps be

adopted into this EFP consistent with the anticipated take analyzed during the consultation on this action and including in an incidental take statement.

The indirect effects of this alternative would be the same as those described for alternative 2 in section 4.4.2.

4.5 Impacts of Alternatives 2 and 3 on Seabirds

Seabird impacts are calculated using proposed EFP effort (56,000 hooks) along with seabird interaction rates from the Hawaii pelagic longline fishery from 2004 to 2006. The Hawaii longline fishery switched to large circle hooks and nighttime setting in 2004. During this period, observers recorded 10 BFAL and 71 LAAL captured in 2,133,096 hooks observed. Zero STAL have been observed caught in the Hawaii pelagic longline fishery. Using these take rates, the proposed action would be expected to take one BFAL, two LAAL, and zero STAL. No ITS exists for BFAL or LAAL, since these species are not listed under the ESA. The 2004 USFWS BO on the HMS FMP does not expect that STAL would be taken by any of the HMS fisheries. The effects of this proposed action on seabirds are consistent with the USFWS Opinion.

4.6 Impacts of Alternatives 2 and 3 on the Socioeconomic Environment

4.6.1 Introduction

NEPA regulations define the human environment "to include the natural and physical environment and the relationship of people with that environment." (40 CFR 1508.14). In examining the socioeconomic effects of longline EFP alternatives, benefits, costs, and economic impacts are evaluated by comparing the estimated impact under each EFP alternative to the level under the baseline or no action alternative. Primarily qualitative analysis of the socioeconomic impacts of EFP alternatives is provided, as the proposed fishery did not exist historically and hence there is no data on which to base a quantitative assessment. Cost and earnings data from the California high seas longline fishery are used to gauge the potential scale of the economic impacts, but should not be interpreted as predictive for what would occur under the proposed EFP, as many relevant factors would likely differ between the proposed EFP and the high seas longline experience. Otherwise—particularly with regard to indirect effects, and non-consumptive and non-use values associated with EFP alternatives—socioeconomic evaluations of management alternatives are primarily theory-informed, qualitative descriptions (Herrick*, et al.* 2003).

Benefit-cost analysis (the focus of Regulatory Impact Review) concerns the change in net benefits resulting from the various EFP alternatives that would be realized by society as a whole, known as welfare effects. Benefits are measured by willingness to pay and costs are opportunity costs or the value of the next best alternative. These are primarily quantified here through measures of economic producer surplus (anticipated economic benefits to society of increased effort under the EFP alternatives).

Net economic benefits primarily consist of economic producer surplus, which on an individual commercial fishing vessel basis is the difference between gross ex-vessel revenues and all fishing costs, including labor costs for captain and crew and a return to the vessel owner. The net economic benefit also includes consumer surplus, which is the net value of finfish products to the consumer. The net benefit to the consumer is the difference between what the consumer actually pays and what they are willing to pay, i.e., the value to the consumer over and above the actual purchase price (the total consumer willingness to pay less the amount actually paid). Producer surplus can increase through decreases in unit harvesting costs (improved economic efficiency), or an increase in ex-vessel prices received. Consumer surplus can increase through a decrease in prices paid, increases in the quantities consumed, or improvements in product quality. If the inputs used to harvest fish and the resulting landings are traded in competitive

markets, then theoretically, consumer and producer surplus can be measured or approximated by market demand and supply curves.

Financial impacts (the subject of Regulatory Flexibility Analysis) relate to the potential consequences of the action alternatives on the financial well being of small entities. This concerns changes in profitability, i.e., changes in firms' cost and earnings. For small organizations (not-for-profit enterprises), concern is with the potential impact of the action alternatives on their economic viability. In the case of small government jurisdictions, the impacts deal with how the action alternatives would affect the income and expenditures of public authorities.

4.6.2 Evaluation Criteria

The evaluation criteria employed to assess economic consequences of the action alternatives, including the proposed EFP and regulatory changes, to the human environment have both a quantitative component and some qualitative components. The former involves the use of an estimate of potential effort together with the observed range of profits per unit of effort from the California high seas longline fishery to produce a corresponding estimate of producer surplus. The latter involves a number of considerations, addressed below in this section.

A separate estimate of producer surplus was not developed for alternative 3 versus the estimate for alternative 2, as there is no means of quantifying the effect of the additional species protection measures contemplated under alternative 3. However, the direction of the effect is clear, as any changes made under alternative 3 could only serve to reduce allowable effort relative to the level of allowable effort permitted under alternative 2. Thus the producer surplus estimates under alternative 2 can be interpreted as upper limits on what could be achieved under alternative 3.

4.6.3 Direct and Indirect Impacts

Direct economic effects of changes in economic production are normally measured by the change in producer surplus, an economic concept intended to measure the net benefit of changes in production, which is calculated as the difference between the anticipated increase in revenues less the anticipated increase in costs due to a change in the level of production effort. In the case of the proposed longline EFP, two measures of producer surplus were taken into consideration: economic producer surplus and financial producer surplus. Financial producer surplus is the estimated increase in producer revenues less the estimated increase in pecuniary costs under each alternative. Economic producer surplus adjusts the financial producer surplus downwards to reflect the opportunity cost of alternative potential sources of income. For instance, if the participating fisherman expected to earn a net profit of $100,000 in longline fishing but could earn $80,000 in alternative employment over the same period, his financial producer surplus would be $100,000 while his economic producer surplus would be $20,000.

Estimates of potential financial producer surplus are presented in Table 4–9. The producer surplus estimates scale with estimated EFP effort. Economic producer surplus estimates are not produced, due to a lack of information about the sole participant's opportunity costs of participation, but they would generally be lower that the levels of financial producer surplus. The financial producer surplus estimates are sensitive to the assumed level of profitability of six dollars per hook, which may be unrepresentative of what would occur under the proposed EFP.

Indirect effects of the EFP would potentially include downstream effects on fish processors who would purchase and process the catch, and on consumers who would benefit from an additional supply of locally caught fresh swordfish.

Table 4–9 Estimates of Potential Longline EFP Effort

Effort (No. of Hooks)	Sets per trip		
Hooks per set	6	10	14
400	9,600	16,000	22,400
1,000	24,000	40,000	56,000
1,200	28,800	48,000	67,200

The California-based high seas longline costs and earnings survey was used to obtain an estimated range of variable financial profits per longline hook, which was roughly between $2 and $10 when adjusted to 2007 dollars. Effort was multiplied by an assumed level of variable financial profit per longline hook of $6 to estimate potential financial producer surplus, as shown in Table 4.10 below:

Table 4–10 Estimates of Potential Financial Producer Surplus

Financial Producer Surplus	Sets per trip		
Hooks per set	6	10	14
400	$57,600	$96,000	$134,400
1,000	$144,000	$240,000	$336,000
1,200	$172,800	$288,000	$403,200

The estimates in the above table may be adjusted to any other assumed level of financial profit $x per longline hook by ratioing (multiplying by x/6); for instance, to scale up to estimated variable financial profit at $10 per hook, multiply any of the table entries by 10/6 = 5/3. For comparison purposes,

It should be understood that the estimates of financial producer surplus are based on experience from the California-based high seas longline fishery over the years from 2001-2004, which may not accurately represent what would occur under the proposed EFP for many different reasons:

1. Fuel costs are likely higher currently than they were in the earlier period;
2. Travel distances (and hence travel costs) from port to fishing grounds would likely be lower for the EFP than they were for the high seas fishery;
3. The sole EFP participant's decisions about where and when to fish would have an uncertain and unquantifiable impact on profitability;
4. Differences in fishing conditions, environmental conditions and skipper skills between the high seas longline fishery observer sets and the experience which could occur under the EFP would have an uncertain and unquantifiable impact on profitability.

There are a number of further considerations which should be weighed into account when considering the likely economic impact of the EFP. These are considered in turn below.

- Economic producer surplus takes into account the private opportunity cost to the EFP participant of longline effort in conjunction with this EFP, compared to whatever other use of his time was available. Since there is no way to objectively predict a single individual's private opportunity cost of time, no effort to explicitly measure economic producer surplus is made here, other than to mention that it would adjust downward from the level of financial producer surplus.

- Participation in the EFP is based on the sole participant's willingness to assume the risks and potential rewards of participating. Standard results in economics suggest that a rational individual will only enter into such an arrangement if the anticipated economic value of doing so (including any nonmarket value involved) exceeds the costs. The participant's willingness to

participate and bear the economic risks involved with implementing the EFP and providing a valuable data about the potential for longline fishing to serve as an economically and environmentally favorable alternative to other swordfish gear should be taken into consideration.

- The fishermen who have devoted time and financial resources to learn to fish with specialized gear and skills cannot fully replace the value of lost opportunity in their optimum fishing environment with less suitable opportunities of equal value elsewhere. The indirect positive effects of the EFP on the value of the participant's specialized skills and gear (human and physical capital) are not quantified in the analysis, but work in the direction of an increase in economic value of allowing the EFP to proceed.

- The positive indirect effect of revenues and local catch to downstream industries is not covered in the analysis, but is considered below in the discussion of affected fishing communities.

- Non-market value plays a hidden role in the participation decision, as part of the decision to undertake an occupational endeavor is based on a tradeoff between relative enjoyment of the work and pecuniary remuneration. As pointed out above, the participant would not willingly enter the EFP if he had another more attractive employment opportunity, taking nonmarket values into account.

- A loss of nonmarket existence value of protected species affected under EFP alternatives 2 and 3 would work against the economic gains under the EFP. However, this effect is ambiguous, due to the unknown and unmeasured indirect impact of changes in EFP effort on the global level of endangered and threatened species take. The problem is that when the protected species as well as the target species are migratory, a curtailment of fishing effort in the turtle closure area may lead to an export of consumption demand for the target species to other fisheries which would otherwise be satisfied by U.S. production. Evidence presented in {Kanseko and Bartram} and in {Carmiento} suggests that an increase in U.S. longline effort could potentially result in both greater fishing opportunity for U.S. fishermen, and a reduction in the global level of marine turtle bycatch, if the increase in U.S. catch offsets swordfish caught and imported to the U.S. from other fisheries with less stringent environmental protection measures and monitoring.

- There is potentially an increase in value to the U.S. economy associated with increased access to the global swordfish stock through an increase in U.S. EEZ effort to harvest swordfish which would otherwise be harvested by foreign fleets. Some of this foreign harvest will be imported into back into the U.S. to replace the potential longline-caught swordfish, but the value of the resource is lost to the U.S. economy, with less certainty or control over the level of migratory protected species bycatch.

- Including observer costs of the EFP theoretically should be included as a reduction in economic producer surplus, at an approximate cost of slightly over $1000 per day at sea. However, the cost of observer coverage is mitigated to an unknown degree by a gain in nonmarket value due to the added assurance that not too many protected species interactions will occur under the EFP, plus an important opportunity for NOAA fisheries to obtain relevant information as the basis for future management decisions.

Indirect effects of the EFP would potentially include downstream effects on fish processors who would purchase and process the catch, and on consumers who would benefit from an additional supply of locally caught fresh swordfish.

4.6.4 Summary Evaluation

The estimated economic surplus positive but may be unrepresentative of what would occur under the EFP due to the inability to reliably predict what level of profit per unit of effort would occur. By any reasonable objective standard, the direct impact of the EFP would be limited and small, given the sole participant and the tight limit on the level of allowable effort.

4.6.5 Fishing Communities Involved in the Longline EFP (Including Buyers/Processors)

Socioeconomic impacts of longline EFP alternatives 2 and 3 on affected communities would be realized by: (1) the commercial fishing sector (harvesters, processors and consumers); (2) the recreational fishing sector (charter/party boat operators, charter/party boat patrons and private boat anglers); (3) the non-consumptive use sector (e.g. recreational divers); (4) non-use sectors (protectionists and preservationists); and, (5) fishing communities. Because there is a sole participant who would be limited to a total of four trips, any impact on affected communities would be small and of limited duration.

The primary affected communities of concern are the members of the recreational fishing community and members of the non-use sector (protectionists and preservationists). The proposed marlin cap under alternative 3 is used to address recreational fishermen's concern that marlin take may be excessive. Alternative 2 requires gear and fishing practice restrictions to address protected species bycatch concerns, and alternative 3 proposes protected species take caps to further limit bycatch concerns. Both alternatives 2 and 3 limit effort to four trips, with further limits on the numbers of sets per trip and the number of hooks per set.

4.7 Summary of the Impacts of the Alternatives

The effects of the alternatives are briefly summarized here, considering the analysis in sections 4.2–4.6 and the description of baseline conditions in chapter three, which allows consideration of cumulative effects.

4.7.1 Alternative 1 (No Action)

As noted above, under no action conditions described in chapter 3 without the incremental effect of fishing under the EFP, would prevail. Most finfish stocks that would be affected by the proposed action, given available information, appear to be at acceptable biomasses or at least not depleted. The Secretary has declared that overfishing is occurring on bigeye and yellowfin tuna. Marine mammals that could be affected by the proposed action vary in terms of population status. These species are managed under the MMPA in order to maintain population levels or implement protective measures to recover depleted stocks. ESA-listed species potentially affected by the proposed action are subject to protective measures to recover those populations. There is currently no West Coast shallow set longline fishery either inside or outside the EEZ.

4.7.2 Alternative 2

The following finfish-related issues are highlighted:

- There are high catch rates of blue shark in HMS fisheries targeting swordfish. The use of circle hooks, as would be required under the EFP, does not appear to reduce blue shark catch rates but it does appear to lead to increased survivorship. Hawaii SSLL observer records for trips utilizing circle indicate approximately 95% of captured blue sharks are released alive. Estimated blue

shark mortality under the EFP would represent a small incremental increase in overall fishing mortality.

- Using the Hawaii SSLL data as a proxy, an estimated maximum of 59 shortfin mako shark may be caught using the highest effort scenario. The catch rate could be higher if fishing occurs near the SCB or in surrounding waters, because the area is a known juvenile nursery habitat for mako sharks. High recapture rates for tagged juveniles show that newly born mako sharks may remain in the SCB and surrounding waters for about two years, after which they appear to move offshore or to the south (Leet et al., 2001). Shortfin mako shark catch rates in the DGN fishery are estimated to be 0.4 animals per set south of Pt. Conception and 1.2 animals per set north of Pt. Conception based on NMFS observer records.

- No catches of common thresher shark are expected based on the Hawaii SSLL catch rates and less than two thresher sharks of any species are expected. However, given the fishing area and catch rates in the DGN fishery, the EFP will most likely result in higher catches than expected based on the Hawaii SSLL data. Thresher shark catch rates in the DGN fishery are an estimated 5.3 animals per set south of Pt. Conception and 8.5 animals per set north of Pt. Conception based on NMFS observer records.

- The striped marlin stock is not overexploited, but the recreational fishing community has raised a concern about commercial catches and the potential for local depletion. Using the Hawaii SSLL data as a proxy, an estimated 57 striped marlin may be caught using the highest effort scenario. It is uncertain whether catch rates in the Hawaii fishery will reflect those in West Coast EEZ waters. Striped marlin catch rates in the DGN fishery are an estimated 0.006 animals per set south of Pt. Conception and 0.08 animals per set north of Pt. Conception based on NMFS observer records. Anecdotal information suggests that striped marlin are able to avoid drift gillnets to some degree so the DGN estimates should be viewed with caution in regards to an abundance and/or presence/absence indicator.

- Several non-target tuna stocks are being overexploited. A Secretarial determination has been made that bigeye and yellowfin tuna are experiencing overfishing and the Council is responding to this status. The IATTC and WCPFC have adopted resolutions calling on member parties not to increase fishing effort on North Pacific albacore. Overfishing of bigeye and yellowfin tuna is principally a result of catches in the tropical North Pacific by fleets from other nations, especially the purse seine sector targeting floating objects. Addressing overfishing requires action at the regional level through the IATTC. The U.S. abides by conservation measures adopted by the Commission and the EFP would be subject to any such applicable measures.

The following protected species issues are highlighted:

- The results of the exposure analysis presented in section 3.4.1 suggests that a small number of marine mammals—most likely California sea lion, Northern elephant seal, Short-beaked common dolphin, Risso's dolphin, and Northern right whale dolphin—may be affected by the EFP fishery. Fishing under the proposed EFP is not expected to result in mortalities or serious injuries to these stocks which would exceed the stock's PBR, although serious injury and/or mortality of California sea lions and northern right whale dolphins would cause the take of animals from these stocks to move further from ZRMG (10 percent of PRB). Marine mammal stocks with very low PBRs—short-finned pilot whales, sperm whales, and humpbacks whales—could be incidentally taken during fishing under the proposed EFP, although this is not considered likely.

- Of sea turtles, leatherbacks are most likely to be affected by the proposed action. Anticipated take levels are low and mortality rates are expected to be only a fraction of anticipated takes (10–15 percent if all of the gear is removed and the animal is lightly hooked, which is likely based upon observer records from the Hawaii-based SSLL fishery). Loggerheads sea turtles could be incidentally taken during fishing under the proposed EFP, but this is unlikely due to their distribution. In addition, the only observed takes of loggerheads in the DGN fishery have occurred nearshore during El Niño years, when it is believed that the range of red crabs (a prey species) expands into Southern California. Current information does not suggest the occurrence of El Niño conditions during the time period of the EFP.

No concerns were raised with respect to incidental mortality of seabirds.

The EFP would result in modest gains in terms of producer and consumer surplus. The estimated economic surplus is positive but may be unrepresentative of what would occur under the EFP due to the inability to reliably predict what level of profit per unit of effort would occur.

4.7.3 Alternative 3

Alternative 3 differs from alternative 2 in the imposition of additional mitigation measures. The following issues are highlighted with respect to alternative 3:

- Use of a long-nosed de-hooking device (required under this alternative) was shown to increase survival rate of blue sharks, the major non-target species (Sunada and O'Brien, 1992).

- A catch cap for striped marlin could be imposed to address concerns raised by the recreational fishing community. The cap could be based on a proportion of annual average recreational striped marlin catch (based on fishing club records) or the anticipated catch using Hawaii SSLL data.

- Catch caps could be considered for those marine mammals most likely affected by the EFP, based on the exposure analysis presented in chapter 3. Those species with very low PBR values should be given greater consideration than those species with relatively high PBR values.

- A catch cap could be considered for leatherback sea turtles. Based on the exposure analysis and leatherback population status a cap of one or two takes would be reasonable. Because mortality rates are relatively low in the longline fishery (depending how the animal is hooked), actual mortality associated with a take cap in this range is less likely.

- The requirement to set the gear at night would substantially reduce incidental catch of seabirds and conservation concerns are likely to be negligible.

- Additional mitigation measures, such as caps, represent a tradeoff against the financial and economic returns of the EFP. Establishing caps increases the likelihood that the EFP would be terminated before the maximum number of sets proposed by the applicant were deployed, representing some level of forgone income.

- Early termination due to caps would also limit the amount of data gathered through this EFP; more data would allow more accurate estimates of the likely effects of any future longline EFP of this type as well as determining if a longline fishery could eventually replace the DGN fishery.

As indicated, the principal mitigation measure under this alternative is the imposition of catch or take caps. The analysis of alternative 3 indicates the possible catch or take of species of concern. Imposition of caps would limit the effects of the EFP to the mortality level associated with any such caps.

4.7.4 Cumulative Effects

Effects of the proposed action have been considered principally in terms of any increase in mortality to various species that may be caught/taken in the EFP fishery. Chapter three describes the range of other actions/activities contributing to mortality. The incremental effect of the proposed action is very small relative to baseline mortality levels and cumulative effects are not expected to materially alter any finding with respect to significant impacts resulting from the proposed action.

4.7.4.1 Finfish

Factors that may cumulatively affect finfish are sources of fishing mortality other than the change in catch due to the alternatives and environmentally-driven changes in stock productivity. The target and non-target species in the SSLL fishery have a Pacific-wide distribution and are subject to fishing mortality from other U.S. domestic fisheries and to a greater degree, distant water fleets from various Pacific Rim and insular nations. These fisheries were described in Chapter 3 as part of the baseline description. Although several of the HMS species of concern being addressed in this document have a wide migratory range that cross established political and management boundaries in the Pacific, the majority of the catch and effort from these fisheries is significantly displaced from the action area. In addition, for most of these distant water fishing fleets little or no data exists regarding bycatch of marine species, including HMS of interest. Without such information, it is difficult to assess the cumulative impacts of these fisheries on the species under review in this EA.

Target Species

The catch and effort data presented for other fisheries that interact with HMS populations, including swordfish, are parameters that for the most part are utilized by regional stock assessment scientists, including NMFS scientists, to produce status of the stock and other key population level estimates. As detailed under the baseline stock status information for swordfish presented in section 3.3.2.1 of this document, the best available science at this point does not indicate an overfished or overfishing condition for swordfish. The proposed action, taken as a very minor component of existing commercial and recreational fisheries throughout the Pacific region, would not increase the regional catch of swordfish to a level triggering a resource conservation concern nor a finding of significant impact for the purposes of this document.

Major Non-target Species

The catch and effort data presented for the cumulative effects of the major non-target species projected to be captured by the SSLL EFP are parameters that for the most part are utilized by regional stock assessment scientists, including NMFS scientists, to produce status of the stock and other key population level estimates. These species include albacore, bigeye, yellowfin, bluefin, and skipjack tunas; blue, thresher, and mako sharks; and striped marlin. As detailed under the baseline stock status information for these species presented in section 3.3.2.2 of this document, the best available science at this point does not indicate an overfished or overfishing condition for these species with the exception of bigeye and yellowfin tuna whose stocks have been determined by NMFS to be subject to overfishing. Given the relatively low SSLL cpue for these tropical tunas that may occur in the more temperate waters of the proposed action, coupled with corrective action being contemplated and/or taken by Pacific Regional Fisheries Management Organizations (RFMO), the proposed action would not increase the regional catch

of these species to a level triggering a resource conservation concern nor a finding of significant impact for the purposes of this document.

The catch and effort data presented for those major non-target finfish species for which population assessments have not been conducted to date (e.g., pelagic stingray, common mola, pomfret), do not allow for a stock status determination at this point. It is assumed that the proposed action would not increase the regional catch of these species to a level triggering a resource conservation concern nor a finding of significant impact for the purposes of this document. An additional point to consider is the high rate of release and survival for several of these longline caught species, including the pelagic stingray and common mola, which further mitigates the impacts of the proposed action in regards to bycatch mortality.

Prohibited Species

Given the low interaction rates of HMS FMP prohibited species with the fisheries noted, the proposed action would not increase the regional catch of these species to a level triggering a resource conservation concern or a finding of significant impact for the purposes of this document. The HMS FMP mandates release of all prohibited species captured unless a valid scientific collecting permit has been obtained through the proper state channels. For basking, megamouth, and great white sharks, there are no currently available population assessment estimates, nor management reference points, for which projected catch under this EFP would exceed an established threshold or trigger a resource concern.

4.7.4.2 Protected Species

Marine Mammals
General threats to marine mammals in the North Pacific are detailed in section 3.4.1.2. These include entanglement in fishing gear (active fishing gear and discarded gear), ship strikes, exposure to toxins, pollution, loss of habitat or prey, and underwater sound. The effects of these threats are difficult to quantify, but may be reflected in stock trends, some of which are increasing (e.g., Eastern North Pacific humpback whales).

The species considered most likely to be affected by this action, California sea lion, northern elephant seal, short-beaked common dolphin, Risso's dolphin, northern right whale dolphin, and harbor seal are all from stocks that are not listed on the ESA or considered depleted under the MMPA. Very low levels of take of animals from these stocks are anticipated under the proposed EFP. When combined with existing known threats to these stocks, it is not expected that the proposed action will change the status of these species or trigger concern over the stocks' status.

Sea Turtles
General threats to Pacific sea turtles are detailed in section 3.4.2.2. These include poaching of eggs, killing of females at nesting beaches, human encroachment (development), beach erosion, and microclimate-related impacts at nesting sites, low hatchling success, and incidental capture in fisheries. Leatherbacks are most likely to be affected by the proposed action and likely only a few individuals. Of these, very low or no mortalities are anticipated, thus the proposed action is unlikely, within the context of other effects, to change the status of leatherbacks in the Pacific.

4.7.4.3 Seabirds

Seabirds are killed in the longline fisheries referenced above. In addition, domestic longline fisheries in Alaska have been a contributor to mortality. However, both Alaskan and Hawaiian longline fisheries have implemented mitigation measures that have substantially reduced incidental seabird mortality.

4.7.4.4 Socioeconomic Environment

Cumulative effects consider events outside of the proposed action. When "external" effects combine with the direct and indirect effects of the action they have a net cumulative effect. Due to the limited scale and short-term nature of the EFP, no cumulative effects are anticipated as a direct result of fishing effort under the EFP.

5.0 CONSISTENCY WITH MSA NATIONAL STANDARDS

An FMP or plan amendment and any pursuant regulations must be consistent with ten national standards contained in the MSA (§301). These are:

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.

As discussed in Chapter four, the proposed action is not expected to result in overfishing of any target or nontarget species.

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

The measures applicable to the EFP are based on the best scientific information available. The literature cited in Chapter nine lists the sources of this information.

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.

Target species stocks have a distribution wider than the West Coast EEZ. The HMS FMP recognizes the need for managing these stocks in the international context through organizations such as the Inter-American Tropical Tuna Commission.

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 fishers, such allocation shall be (A) fair and equitable to all such fishers; (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 does not involve allocation or the assignment of fishing privileges, except for the exemption allowed to vessels participating in the EFP.

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 has no effect on efficiency of utilization.

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

The proposed action focuses on a single fishery and is not expected to affect other fisheries catching the same fish species. The evaluation in this EA recognizes differences in the status of target and nontarget species to the degree known.

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

The proposed action involves an exemption from certain regulations and does not duplicate existing management measures or regulations.

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 intended mitigate adverse socioeconomic impacts while avoiding significant adverse natural environmental impacts.

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 MSA defines "fish" as all forms of marine animal and plant life other than marine mammals and birds. The proposed action does not involve measures that will directly affect bycatch of finfish. To the degree that overall fishing effort increases as a result of the proposed action, there could be an increase in bycatch. The proposed action is intended to test measures to reduce the incidental take of protected species.

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 involves one vessel and is not expected to affect safety. This vessel normally operates outside the EEZ so no increased exposure to adverse conditions is expected.

6.0 CROSS-CUTTING MANDATES

6.1 Other Federal Laws

6.1.1 Coastal Zone Management Act

Section 307(c)(1) of the Coastal Zone Management Act (CZMA) of 1972 requires all Federal activities that directly affect the coastal zone be consistent with approved state coastal zone management programs to the maximum extent practicable. The Council-preferred Alternative would be implemented in a manner that is consistent to the maximum extent practicable with the enforceable policies of the approved coastal zone management programs of Washington, Oregon, and California. This determination has been submitted to the responsible state agencies for review under Section 307(c)(1) of the CZMA. The relationship of the groundfish FMP with the CZMA is discussed in Section 11.7.3 of the Groundfish FMP. The CPS FMP has been found to be consistent with the Washington, Oregon, and California coastal zone management programs. The recommended action is consistent and within the scope of the actions contemplated under the framework of the HMS FMP.

Under the CZMA, each state develops its own coastal zone management program which is then submitted for Federal approval. This has resulted in programs which vary widely from one state to the next. The proposed action is not expected to affect any state's coastal management program.

6.1.2 Endangered Species Act

NMFS is required under section 7(a)(2) of the ESA to insure that any action it carries out is not likely to jeopardize the continued existence of any endangered or threatened marine species or adversely modify designated critical habitat. To fulfill this obligation, NMFS will conduct a section 7 consultation to determine if the DGN SSLL EFP fishery would jeopardize the continued existence of endangered or threatened species. Because NMFS would implement the proposed action and must protect protected marine species, it functions as both the action agency and the consulting agency during the section 7 consultation. However, different divisions within the agency fulfill these roles. Additionally, USFWS is responsible for, and was contacted regarding, potential impacts to listed seabirds. If the action is considered likely to affect ESA-listed sea birds, NMFS will initiate formal consultation with USFWS.

6.1.3 Marine Mammal Protection Act

The MMPA of 1972, as amended, is the principle Federal legislation that guides marine mammal species protection and conservation policy in the United States. Under the MMPA, NMFS is responsible for the management and conservation of 153 stocks of whales, dolphins, porpoise, as well as seals, sea lions, and fur seals; while the USFWS Service is responsible for walrus, sea otters, and the West Indian manatee.

Off the West Coast the following marine mammal stocks are considered depleted under the MMPA: the Steller sea lion (*Eumetopias jubatus*) eastern stock, Guadalupe fur seal (*Arctocephalus townsendi*), southern sea otter (*Enhydra lutris*) California stock, sperm whale (*Physeter macrocephalus*) Washington, Oregon, and California stock humpback whale (*Megaptera novaeangliae*) Eastern North Pacific stock blue whale (*Balaenoptera musculus*), Eastern North Pacific stock fin whale (*Balaenoptera physalus*), Washington, Oregon, and California stock killer whale (*Orcinus orca*) Eastern North Pacific Southern resident DPS, sei whale (*Balaenoptera borealis*), and northern right whale (*Eubalaena glacialis*) Any

species listed as endangered or threatened under the ESA is automatically considered depleted under the MMPA.

Chapter 4 evaluates impacts of the alternatives on marine mammals.

6.1.4 Migratory Bird Treaty Act

The MBTA of 1918 was designed to end the commercial trade of migratory birds and their feathers that, by the early years of the 20th century, had diminished the populations of many native bird species. The MBTA states that it is unlawful to take, kill, or possess migratory birds and their parts (including eggs, nests, and feathers) and implements a multilateral treaty between the United States, Canada, Japan, Mexico, and Russia to protect common migratory bird resources. The MBTA prohibits the directed take of seabirds, but the incidental take of seabirds does occur. The MBTA applies within three nmi of the U.S. coastline. Because the EFP would occur in Federal waters (seaward of 3 nmi) the fishery would not be subject to the MBTA. Chapter 4 of this EA evaluates the effect of the alternatives on seabirds.

6.1.5 Paperwork Reduction Act

The proposed action does not require collection-of-information subject to the Paperwork Reduction Act.

6.1.6 Regulatory Flexibility Act

The purpose of the Regulatory Flexibility Act (RFA) is to relieve small businesses, small organizations, and small governmental entities of burdensome regulations and record-keeping requirements. Major goals of the RFA are; (1) to increase agency awareness and understanding of the impact of their regulations on small business, (2) to require agencies communicate and explain their findings to the public, and (3) to encourage agencies to use flexibility and to provide regulatory relief to small entities. The RFA emphasizes predicting impacts on small entities as a group distinct from other entities and the consideration of alternatives that may minimize the impacts while still achieving the stated objective of the action. An initial regulatory flexibility analysis (IRFA) is conducted unless it is determined that an action will not have a "significant economic impact on a substantial number of small entities." The RFA requires that an IRFA include elements that are similar to those required by Executive Order (EO) 12866 and NEPA. Therefore, the IRFA has been combined with the RIR and NEPA analyses.

Chapter 4 provides information on which to base the IRFA. The IRFA will be prepared if the Council chooses one of the action alternatives and NMFS proceeds with issuing the permit.

6.2 Executive Orders

6.2.1 EO 12866 (Regulatory Impact Review)

EO 12866, Regulatory Planning and Review, was signed on September 30, 1993, and established guidelines for promulgating new regulations and reviewing existing regulations. The EO covers a variety of regulatory policy considerations and establishes procedural requirements for analysis of the benefits and costs of regulatory actions. Section 1 of the EO deals with the regulatory philosophy and principles that are to guide agency development of regulations. It stresses that in deciding whether and how to regulate, agencies should assess all of the costs and benefits across all regulatory alternatives. Based on this analysis, NMFS should choose those approaches that maximize net benefits to society, unless a statute requires another regulatory approach.

This action does not involve rulemaking so the RIR requirement is not applicable.

6.2.2 EO 12898 (Environmental Justice)

EO 12898 obligates Federal agencies to identify and address "disproportionately high adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations in the United States" as part of any overall environmental impact analysis associated with an action. NOAA guidance, NAO 216-6, at §7.02, states that "consideration of EO 12898 should be specifically included in the NEPA documentation for decision-making purposes." Agencies should also encourage public participation—especially by affected communities—during scoping, as part of a broader strategy to address environmental justice issues.

The environmental justice analysis must first identify minority and low-income groups that live in the project area and may be affected by the action. Typically, census data are used to document the occurrence and distribution of these groups. Agencies should be cognizant of distinct cultural, social, economic, or occupational factors that could amplify the adverse effects of the proposed action. (For example, if a particular kind of fish is an important dietary component, fishery management actions affecting the availability, or price of that fish, could have a disproportionate effect.) In the case of Indian tribes, pertinent treaty or other special rights should be considered. Once communities have been identified and characterized, and potential adverse impacts of the alternatives are identified, the analysis must determine whether these impacts are disproportionate. Because of the context in which environmental justice is developed, health effects are usually considered, and three factors may be used in an evaluation: whether the effects are deemed significant, as the term is employed by NEPA; whether the rate or risk of exposure to the effect appreciably exceeds the rate for the general population or some other comparison group; and whether the group in question may be affected by cumulative or multiple sources of exposure. If disproportionately high adverse effects are identified, mitigation measures should be proposed. Community input into appropriate mitigation is encouraged.

It should be noted that fishery participants make up a small proportion of the total population in these communities, and their demographic characteristics may be different from the community as a whole. However, information specific to fishery participants is not available. Furthermore, different segments of the fishery-involved population may differ demographically. For example, workers in fish processing plants may be more often from a minority population while deckhands may be more frequently low income in comparison to vessel owners.

Participation in decisions about the proposed action by communities that could experience disproportionately high and adverse impacts is another important principle of the EO. The Council offers a range of opportunities for participation by those affected by its actions and disseminates information to affected communities about its proposals and their effects through several channels. In addition to Council membership, which includes representatives from the fishing industries affected by Council action, the HMSAS, a Council advisory body, draws membership from fishing communities affected by the proposed action. While no special provisions are made for membership to include representatives from low income and minority populations, concerns about disproportionate effects to minority and low income populations could be voiced through this body or to the Council directly. Although Council meetings are not held in isolated coastal communities for logistical reasons, they are held in different places up and down the West Coast to increase accessibility.

The Council disseminates information about issues and actions through several media. Although not specifically targeted at low income and minority populations, these materials are intended for consumption by affected populations. Materials include a newsletter, describing business conducted at Council meetings, notices for meetings of all Council bodies, and fact sheets intended for the general reader. The Council maintains a postal and electronic mailing list to disseminate this information. The

Council also maintains a website (www.pcouncil.org) providing information about the Council, its meetings, and decisions taken. Most of the documents produced by the Council, including NEPA documents, can be downloaded from the website.

6.2.3 EO 13132 (Federalism)

EO 13132, which revoked EO 12612, an earlier federalism EO, enumerates eight fundamental federalism principles. The first of these principles states "Federalism is rooted in the belief that issues that are not national in scope or significance are most appropriately addressed by the level of government closest to the people." In this spirit, the EO directs agencies to consider the implications of policies that may limit the scope of or preempt states' legal authority. Preemptive action having such federalism implications is subject to a consultation process with the states; such actions should not create unfunded mandates for the states; and any final rule published must be accompanied by a federalism summary impact statement.

The Council process offers many opportunities for states (through their agencies, Council appointees, consultations, and meetings) to participate in the formulation of management measures. This process encourages states to institute complementary measures to manage fisheries under their jurisdiction that may affect federally-managed stocks.

The proposed action does not have federalism implications subject to EO 13132.

6.2.4 EO 13175 (Consultation and Coordination with Indian Tribal Governments)

EO 13175 is intended to ensure regular and meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications, to strengthen the United States government-to-government relationships with Indian tribes, and to reduce the imposition of unfunded mandates upon Indian tribes.

The Secretary recognizes the sovereign status and co-manager role of Indian tribes over shared Federal and tribal fishery resources. At Section 302(b)(5), the Magnuson-Stevens Act reserves a seat on the Council for a representative of an Indian tribe with federally-recognized fishing rights from California, Oregon, Washington, or Idaho.

The U.S. government formally recognizes the four Washington coastal tribes (Makah, Quileute, Hoh, and Quinault) have treaty rights to marine fish. In general terms, the quantification of those rights is 50 percent of the harvestable surplus of groundfish available in the tribes' Usual and accustomed fishing areas (described at 50 CFR 660.324). Each of the treaty tribes has the discretion to administer their fisheries and to establish their own policies to achieve program objectives.

There is no tribal involvement with this fishery.

6.2.5 EO 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds)

EO 13186 supplements the MBTA (above) by requiring Federal agencies to work with the USFWS to develop memoranda of agreement to conserve migratory birds. NMFS is in the process of implementing a memorandum of understanding. The protocols developed by this consultation will guide agency regulatory actions and policy decisions in order to address this conservation goal. The EO also directs agencies to evaluate the effects of their actions on migratory birds in environmental documents prepared pursuant to the NEPA.

Chapter 4 in this EA evaluates impacts to seabirds.

7.0 LIST OF PREPARERS

Name and Affiliation	Responsibility
Dr. Kit Dahl, Staff Officer – Highly Migratory Species, Pacific Fishery Management Council	Project management, draft EA; overall editing; principal author chapters 1, 2, 5, and 6
Mr. Lyle Enriquez, Fishery Biologist, NMFS SWR	Principal author seabird impacts (chapters 3 & 4)
Mr. Pierre Gorodo, NMFS SWR	Technical assistance, chapters 3 and 4
Mr. Craig Heberer, , Fishery Biologist, NMFS SWR	Project management, draft and final EA; principal author finfish species impacts (chapters 3 & 4)
Ms. Charlene Hurst and Gabrielle Dorr	Copy editors
Ms. Elizabeth Petras, Liaison Officer, NMFS SWR Office of Protected Resources	Principal author protected species impacts (chapters 3 & 4)
Dr. Stephen Stohs, NMFS Southwest Fisheries Science Center	Principal author socioeconomic impacts (chapters 3 & 4)
Mr. Stephen Wertz, Associate Marine Biologist, California Department of Fish and Game	Technical assistance, chapters 3 and 4

8.0 LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS TO WHOM COPIES OF THE EA WERE SENT

This draft EA is distributed as part of the meeting materials available for the Pacific Council's April 2007 meeting. Paper copies are distributed to Council members and selected Council advisory bodies. Paper copies are also made available to the public at the meeting. All materials are posted on the Council's website (www.pcouncil.org). Members of the public may also receive paper or electronic copies on request to Council staff.

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Agenda Item J.2.d
Public Comment
April 2007

Subject: Please Deny Longline EFP
From: fuchsia111@aol.com
Date: Thu, 08 Mar 2007 19:14:32 -0800
To: pfmc.comments@noaa.gov
CC: karen@seaturtles.org

Mr. Donald K. Hansen
Chair
Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 200
Portland, OR 97220-1384

Phone: 1-866-806-7204 or
(503) 820 2280
Fax: (503) 820-2299

As of March 16, 2007, the Council received 1,076 copies of this e-mail.

Dr. William Hogarth
Director
NOAA Fisheries Service
1315 East West Highway, SSMC3
Silver Spring, MD 20910

Phone: (301) 713-2379
Fax: (301) 713-2384

Dear Chairman Hansen and members of the Council:

I am writing to express my opposition to the application before the Pacific Fishery Management Council (PFMC) for an exempted fishing permit (EFP) that would allow swordfish longline fishing along the U.S. west coast. Longline fishing has been banned for many years along the California and Washington coast due to bycatch concerns, and in 2004 this ban was extended to included the entire U.S. West Coast.

Longline fishing is a highly indiscriminate fishing method that results in significant bycatch of numerous marine species including sea turtles, whales, dolphins, seals, sea lions, sea birds, sharks, billfish and other fish species. This bycatch is often thrown back dead or injured placing additional pressures on protected species and already depleted fish stocks.

The proposed EFP will undermine successful conservation measures protecting the critically endangered leatherback sea turtle, valuable fish stocks, and other marine life, and the health and integrity of California, Oregon and Washington's' rich and diverse marine ecosystems.

I therefore urge the PFMC not to recommend the issuance of the EFP for swordfish longline fishing along the U.S west coast. I look forward to your reply on this issue.

Sincerely,

Sheri Greenspan 31-65 29th Street, Apt E5 Astoria, NY 11106 fuchsia111@aol.com

Subject: Keep the Current Restrictions on Longlines
From: kashdrug04@aol.com
Date: Sat, 03 Mar 2007 17:50:55 -0800
To: donald.mcisaac@noaa.gov
CC: karen@seaturtles.org

Mr. Donald McIsaac
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Director
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Phone: (301) 713-2379
Fax: (301) 713-2384

As of March 16, 2007, the Council received 938 copies of this e-mail.

Dear Mr. McIsaac and Dr. Hogarth:

I am writing to express my opposition to the proposal before the Pacific Fishery Management Council (PFMC) to reestablish a longline fishery in U.S. Pacific waters, reversing protection measures in place for sea turtles and other marine species. Scientists have warned the critically endangered leatherback sea turtle, could go extinct in the Pacific in the next 5-30 years unless measures to reduce the threat of being injured or killed by longlines and gillnets are enforced and strengthened.

The PFMC made the right decision in 2004 when it implemented historical state bans on pelagic longline fishing along the U.S. West Coast into their Fisheries Management Plan. As a result leatherback sea turtles have continued to remain safe from the threat of longlining in U.S. waters off the Pacific Coast.

There is not sufficient justification to develop and expand a pelagic longline fishery in U.S. Pacific waters. If approved by the Council, the proposal to allow pelagic longline gear through an Exempted Fishing Permit (EFP) will undermine successful conservation measures protecting the critically endangered leatherback sea turtle as well as billfish, seabirds, marine mammals, sharks and place increased pressure on already over fished and depleted fish stocks.

I urge you to not approve the issuance of and EFP for pelagic longline fishing along the U.S west coast that will undermine the integrity of the marine ecosystem. I look forward to your reply on this issue.

Sincerely,

Joel Andrade 20779 Pendleton St Riverdale, Ca 93656 kashdrug04@aol.com

Mr. Donald McIsaac, Executive Director
Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 200
Portland, OR 97220-1384

June 26, 2006

Dear Mr. McIsaac:

RE: Please Keep the Current Restrictions on Longlines

I am writing because I am deeply concerned about the proposal before the Pacific Fishery Management Council (PFMC) to reestablish a longline fishery in U.S. Pacific waters, reversing protection measures in place for sea turtles and other marine species.

Scientists have warned that the critically endangered leatherback sea turtle could go extinct in the Pacific in the next 5-30 years unless measures to reduce the threat of being injured or killed by longlines and gillnets are enforced and strengthened.

Drift gillnets, the notorious "curtains of death," and industrial longlining could be returning to protected areas off the U.S. West Coast. I urgently ask you to prevent these destructive fishing practices from plundering our precious coastal waters.

The PFMC made the right decision in 2004 when it prohibited the use of longline gear in U.S. West Coast waters.

As a result for the past two years leatherback sea turtles have been safe from the threat of longlining in U.S. waters off the Pacific Coast.

There is not sufficient justification to develop and expand a pelagic longline fishery in U.S. Pacific waters.

Industrial longlining and gill netting are currently the greatest threats to the continued existence to the Pacific leatherback sea turtle, the world's largest turtle species, which is now teetering on the verge of extinction. You can help make the difference between extinction and recovery for the Pacific leatherback

If approved by the Council, the proposal to allow pelagic longline gear through an Exempted Fishing Permit (EFP) will undermine successful conservation measures protecting the critically endangered leatherback sea turtle as well as billfish, seabirds, marine mammals, sharks and other fish.

Allowing longliners back into our waters if they use circle hooks would also be a set back to essential conservation measures.

The recent closure of the Hawaii swordfish longline fishery has provided conclusive evidence that circle hooks fail to prevent the take of endangered sea turtles.

This confirms that the only responsible option left is a closure of longline fishing in the Pacific to prevent the threat to these endangered species.

Please keep the current restrictions on longlines

Thank you for your help on behalf of our oceans and marine life.

Respectfully,
J. Capozzelli
315 West 90th Street
New York, NY 10024

F

confidential

fax

To: **Donald McIsaac**
Fax Number: 1503-820-2299

From:
Fax Number:
Business Phone:
Home Phone:

Pages: 1
Date/Time: 6/17/2006 3:57:08 PM
Subject:

Please continue the ban on longline fishing along the U.S.West Coast.

Thank you.

William McMullin
2139 W. Frances Rd.
Mt. Morris, MI 48458

Vintage High School
1375 Trower Ave.
Napa,CA 94558

June 22, 2006

Dear Mr. Mc Isaac:

Enclosed you will find letters from my special education students. As you will read they are concerned about the dangerous situation that the leatherback sea turtles find themselves in. I hope you will read their opinions.

Thank you for taking the time to read their letters.

Sincerely,

Dina French, Special Education Teacher

Dear. Mr. Donald McIsaac;
You guys are making leatherback sea turtles endangered. You rompany Is killing leather back sea turtles. By Industrial logging and gill netting. Will your rompany help save the leather back Seaturtles thanks for reading my letter

Sincerely,
Uriel Hernandez

Dear Mr. Donald MC Isaac:

I think you should stop endangering Sea turtles. They are now teetering on the verge of extinction. Please stop longlining and gill netting. You are killing a lot of Sea turtles. Longlining and gill netting are currently the greatest threats to the continued existence to the Pacific leatherback Sea turtle. So Please stop gill netting and long lining.

Sincerely,
Michael
McGraw

DEAR MR. DONALD MC ISAAC:

I THINK YOU SHOULD STOP INDUSTRIAL LOGGING AND GILL NETTING. YOU ARE KILLING SEA TURTLES. YOUR COMPANY IS MAKEING LEATHER BACK SEA TURTLE ENDANGERED. WILL YOU GUYS MAKE THE OCEAN SAFER FOR LEATHER BACK SEA TURTLE?

THANK YOU FOR READING MY LETTER.

SINCERELY,

NICK SMITHSON

Save the Turtle!

Dear Mr. Donald Mc Isaac:

I wish you would stop endangering the lives of the Pacific leatherback sea turtle. Please stop longlining and gill netting (the turtles are getting caught in your nets and are being killed. They are endangering species and are teetering on the verge of extinction. You can help make the different between extinction and recovery of the Pacific leatherback sea turtle.

Sincerely,

Ana Lopez

Dear: Mr Donald Mc Isaac

You should not be endangering the sea turles. You should stop longlining and gill netting. They're verge of being extinct please stop your fishing practices.

Sincerely,

Robert Waldenburg

Dear MR. Donald McIsaac

Due to your industrial longlining and gillnetting off of the pacific coast your fisherman are killing the worlds largest turtle species. The pacific coast leather back turtle is an endangered species. Your fisherman are captering the turtles in their nets and killing them. Please stop this form of fishing because the pacific leather back turtle is on the verge of extinction. If you stop now, you could make the difference in whether or not the pacific leather back turtle becomes extinct.

Sincerely,

Taffani Sam 6-21-06

Dear. Mr. Donald Mc Isoac,

Industrial longlining, gillnetting are killing the pacific leather back turtle. They are an endangered species on the verge of extinction off of the Pacific Coast.

When the fisherman go fishing they catch the turtles in the net and they kill them.

Please stop because these turtles are the worlds largest turtle species on verge of extinction.

You could save the lives of the Pacific leather turtle.

Sincerly,
Gerardo Uribe

DEAR MR. Donald:

DEAR mr. Donald. You need to stop longlining and netting fish. because you may not know it or not but you're killing sea turtles! And that's JUST SICK you can kill fish but not sea turtles! Because There are alot more way's to catch fish and soon many people will stop eating fish because of the garbage that's in the ocean. Because it's poisoning the fish. If people eat your fish they could die. Then you would be out of bussness and then say bye bye to all your money.

SINCERLY, DEMNIS PAUL J.R.

PS. Sorry if My hand writing and spelling is not that good.

Dear Mr. McIsaac:

I am writing to express my opposition to the proposal to establish a longline fishery in U.S. Pacific waters. This would reverse the protection already in place for sea turtles and other marine species. The critically endangered leatherback sea turtle could become extinct in the Pacific if longlines and gillnets are used.

Sincerely,

Nancy Scott

Nancy Scott
131 NW 4th St.
Corvallis OR 97330

LETTER TO PFMC

Dear Mr. Donald McIsaac,

I am writing to express my opposition to the proposal before the Pacific Fishery Management Council (PFMC) to reestablish a longline fishery in U.S. Pacific waters, reversing protection measures in place for sea turtles and other marine species. Scientists have warned the critically endangered leatherback sea turtle, could go extinct in the Pacific in the next 5-30 years unless measures to reduce the threat of being injured or killed by longlines and gillnets are enforced and strengthened.

The PFMC made the right decision in 2004 when it prohibited the use of longline gear in U.S. West Coast waters. As a result for the past two years leatherback sea turtles have been safe from the threat of longlining in U.S. waters off the Pacific Coast.

There is not sufficient justification to develop and expand a pelagic longline fishery in U.S. Pacific waters. If approved by the Council, the proposal to allow pelagic longline gear through an Exempted Fishing Permit (EFP) will undermine successful conservation measures protecting the critically endangered leatherback sea turtle as well as billfish, seabirds, marine mammals, sharks and other fish,

Finally, allowing longliners back into our waters if they use circle hooks would also be a set back to essential conservation measures. The recent closure of the Hawaii swordfish longline fishery has provided conclusive evidence that circle hooks fail to prevent the "take" of endangered sea turtles. This confirms the only option left is a closure of longline fishing in the Pacific to prevent the threat to these endangered species. I urge you not to reverse your decision. I look forward to your reply on this issue.

Sincerely,

Name: Teresa A. Lazzaretto Teresa A Lazzaretto 7/3/06

Address: 321 College Avenue

City, State, Zip: SF CA 94112

Please return to: Sea Turtle Restoration Project, P.O. Box 400, Forest Knolls, CA 94933 Fax: 415-488-0372

LETTER TO PFMC

Dear Mr. Donald McIsaac,

I am writing to express my opposition to the proposal before the Pacific Fishery Management Council (PFMC) to reestablish a longline fishery in U.S. Pacific waters, reversing protection measures in place for sea turtles and other marine species. Scientists have warned the critically endangered leatherback sea turtle, could go extinct in the Pacific in the next 5-30 years unless measures to reduce the threat of being injured or killed by longlines and gillnets are enforced and strengthened.

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There is not sufficient justification to develop and expand a pelagic longline fishery in U.S. Pacific waters. If approved by the Council, the proposal to allow pelagic longline gear through an Exempted Fishing Permit (EFP) will undermine successful conservation measures protecting the critically endangered leatherback sea turtle as well as billfish, seabirds, marine mammals, sharks and other fish,

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Sincerely,

Name: 7-2-06 (Nicholas Poister)

Address: 1856 Franklin Street #100

City, State, Zip: San Francisco, CA 94109

Please return to: Sea Turtle Restoration Project, P.O. Box 400, Forest Knolls, CA 94933 Fax: 415-488-0372

LETTER TO PFMC

Dear Mr. Donald McIsaac,

I am writing to express my opposition to the proposal before the Pacific Fishery Management Council (PFMC) to reestablish a longline fishery in U.S. Pacific waters, reversing protection measures in place for sea turtles and other marine species. Scientists have warned the critically endangered leatherback sea turtle, could go extinct in the Pacific in the next 5-30 years unless measures to reduce the threat of being injured or killed by longlines and gillnets are enforced and strengthened.

The PFMC made the right decision in 2004 when it prohibited the use of longline gear in U.S. West Coast waters. As a result for the past two years leatherback sea turtles have been safe from the threat of longlining in U.S. waters off the Pacific Coast.

There is not sufficient justification to develop and expand a pelagic longline fishery in U.S. Pacific waters. If approved by the Council, the proposal to allow pelagic longline gear through an Exempted Fishing Permit (EFP) will undermine successful conservation measures protecting the critically endangered leatherback sea turtle as well as billfish, seabirds, marine mammals, sharks and other fish,

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Sincerely,

Name: KARSTEN AXE

Address: 1856 FRANKLIN

City, State, Zip: SAN FRANCISCO, CA 94109

Please return to: Sea Turtle Restoration Project, P.O. Box 400, Forest Knolls, CA 94933 Fax: 415-488-0372

37, Broadfern Road,
Knowle,
Solihull,
West Midlands.
B93 9DE
UNITED KINGDOM

3rd July 2006

Mr. Donald McIsaac,
Executive Director,
Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 200
Portland, OR 97220-1384

Dear Mr. McIsaac:

Please do not allow the re-establishment of a longline fishery in US Pacific waters. The proposal currently before the Pacific Fishery Management Council (PFMC) should be scrapped. A ban is vital to help protect a large variety of marine life, including dolphins, porpoises, albatrosses and sea turtles. Leatherback sea turtles and many types of albatross are critically endangered, and are some of the earth's most beautiful, unique creatures. Measures to reduce the threat of these animals being injured or killed by long lines and gill nets need to be enforced and strengthened.

The PFMC made the right decision in 2004 when it prohibited the use of longline gear in U.S. West Coast waters. As a result for the past two years leatherback sea turtles have been safe from the threat of longlining in U.S. waters off the Pacific Coast.

There is not sufficient justification to develop and expand a pelagic longline fishery in U.S. Pacific waters. If approved by the Council, the proposal to allow pelagic longline gear through an Exempted Fishing Permit (EFP) will undermine successful conservation measures.

Finally, allowing longliners back into US waters if they use circle hooks would also be a set back to essential conservation measures. The recent closure of the Hawaii swordfish longline fishery has provided conclusive evidence that circle hooks fail to prevent the take of endangered sea turtles. This confirms the only option left is a closure of longline fishing in the Pacific to prevent the threat to these endangered species. Alternatives to longlining for tuna in particular do exist, for example pole-and-line fishing. I urge you not to reverse your decision.

We look forward to your reply on this issue. We may not be US citizens, but the earth's biodiversity is a global heritage.

Yours Sincerely,

ATRHanson

Andrew Hanson, and other members of Birmingham (UK) Friends of the Earth:

Ian Scott 21 Poppy Lane Birmingham B24 0EJ

Kate Nonweiler 33 Moor Pool Avenue, Birmingham B17 9HL

James Breare, 5 Chiseldon Croft, B14 5BY

John Davison, 97 Falconhurst Rd, Birmingham, B29 6SB

Bob Scott 21 Poppy Lane, Birmingham B24 0EJ

Alison Breadon 101 Causeway Green Road, Oldbury, B68

Thomas Woollaston-Rowe 20 south Rd, Kings Heath. B14

Deborah Woollaston-Rowe 20 south Rd, Kings Heath B14.

Tom Morris 90 New Road, Bournville. B60 2LA

Attn: Mr. Donald McIsaacs, PFMC FAX 503 820 2299

Feb. 21, 2007

Dear Mr. McIsaacs and PFMC members,

We ask that our comments be included in the supplemental mailing regarding the proposals being considered by you and the NMFS. Those proposals, one allowing "experimental" fishing vessel in the EEZ off California and the other proposal, decreasing the drift gillnet time and area closures off the central California and Oregon coasts would cause irreparable harm to to Pacific Leatherback turtle recovery efforts.

As you know, Pacific Leatherback turtles are the most endangered of all sea turtle species and the greatest threat to their survical is, and has been, longline and drift gillnet fisheries. Even under current EPA protection, fewer than 1% of hatchlings survive into adulthood. Further weakening their protection would assure the species certain decline. In addition to drift gillnet and longline threats, thousands die annually due to severe habitat degradation, plastic injestion and entanglement, predation, rampant poaching, decline in turtles own food supply such as krill due to global warming and ensuing changes in migratory routes, human encroachment and development destroys nesting sites, as does rising ocean level from global warming. Moreover, global warming is causing a gender imbalance in hatchlings due to warmer sand (nesting) temperatures. Finally, large numbers of sea turtles are succumbing to aggressive cancerous facial lesions which cause blindness, oral tumors, deafness, starvation and death. This rampant disease may be related to pollution or the rapid proliferation of ocean pathogens due to global warming. Whatever the cause, the turtles weakened immune systems cannot fend off that lethal disease.

To call either of the considered proposals, "experimental" is ludicrous. In a true scientific experiment, the future outcome of the study is unknown. The investigator postulates hypotheses to test possible outcomes. Your proposals are not experimental as their outcome is certain: many more turtle deaths and a significant depletion of this severely endangered species.

We therefore ask that the present protections remain completely intact, i.e. preserve the decades long prohibition on use of longlines and the Federal EEZ within 200 miles of the California coast. Areas north of Pt. Concepcion up to central Oregon now closed to all drift gillnet fishing from Aug.15 to Nov.15, should be maintained and

enforced with no shortening of the dates or times that drift gill nets are prohibited .

As you know, TEDs may allow the escape of hatchlings or juveniles from nets, but larger turtles and adults are not able to escape and suffocate and drown. Your stated goal, "to reduce the potential take of leatherback turtles" is not acceptable. There should be, no take, zero. This is not a species well on its way to recovery, it is a species that is barely viable, even with all of the current protection that you are cosidering weakening or eliminating.

You have a public mandate to responsibly manage marine life. Sea turtles require greater, not lesser protection, and we ask for your help, not hindrance in assuring the species continued survival.

Respectfully yours,

(Mrs.) Melanie Weintraub and family
15274 Skyway
Magalia, CA 95954

cc: Mr. Gary Stacey, Regional Manager, California DFG

FAX **March 7, 2007**

Please Deny Longline EFP

Mr. Donald K. Hansen
Chair Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 200
Portland, OR 97220-1384

Phone: 1-866-806-7204 or (503) 820 2280
Fax: (503) 820-2299

Dr. William Hogarth
Director NOAA Fisheries Service
1315 East West Highway, SSMC3
Silver Spring, MD 20910

Phone: (301) 713-2379
Fax: (301) 713-2384

Dear Chairman Hansen and members of the Council:

I am writing to express my opposition to the application before the Pacific Fishery Management Council (PFMC) for an exempted fishing permit (EFP) that would allow swordfish longline fishing along the U.S. west coast. Longline fishing has been banned for many years along the California and Washington coast due to bycatch concerns, and in 2004 this ban was extended to include the entire U.S. West Coast.

Longline fishing is a highly indiscriminate fishing method that results in significant bycatch of numerous marine species including sea turtles, whales, dolphins, seals, sea lions, sea birds, sharks, billfish and other fish species. This bycatch is often thrown back dead or injured placing additional pressures on protected species and already depleted fish stocks.

The proposed EFP will undermine successful conservation measures protecting the critically endangered leatherback sea turtle, valuable fish stocks, and other marine life, and the health and integrity of California, Oregon and Washington's' rich and diverse marine ecosystems.

I therefore urge the PFMC not to recommend the issuance of the EFP for swordfish longline fishing along the U.S west coast. I look forward to your reply on this issue.

Sincerely,

Lisa A Müllerauh
21 Paramount Terrace
San Francisco, CA 94118
415-750-9271

FAX

TO:	Mr. D. K. Hansen	FROM:	Jennifer Kelly
FAX :	(503) 820-2299	PAGES:	1
PHONE :	(415) 864-8787	DATE:	03/07/2007
RE.:	EEP	C.C.:	blank

I am writing to urge you, in the strongest possible terms, NOT to rescind the ban on longline fishing off the Californian coast. This indiscriminate practice causes the unnesessary death of many thousands of marine creatures other than the intended catch. We have received clear evidence that our oceans and the species within them are in a state of near collapse. We MUST be extremely cautious in all we permit before it is too late. This ban has had very beneficial results for a number of species, including the endangered green back turtles. let us not undo all the good that has been accomplished. NO longline fishing!!

Thank you for taking you responsibilities seriously

Jennifer Kelly

CAPITOL OFFICE

STATE CAPITOL
ROOM 2059
SACRAMENTO, CA 95814
(916) 651-4003

DISTRICT OFFICES

SAN FRANCISCO
455 GOLDEN GATE AVENUE
SUITE 14800
SAN FRANCISCO, CA 94102
(415) 557-1300

MARIN / SONOMA
3501 CIVIC CENTER DRIVE
ROOM 425
SAN RAFAEL, CA 94903
(415) 479-6612

SENATOR.MIGDEN@SEN.CA.GOV

California State Senate

SENATOR
CAROLE MIGDEN
THIRD SENATE DISTRICT

MAJORITY WHIP

COMMITTEES

PUBLIC SAFETY
CHAIR

NATURAL RESOURCES
AND WATER

JOINT COMMITTEE ON
LEGISLATIVE BUDGET

SELECT COMMITTEE ON
CALIFORNIA'S WINE
INDUSTRY

SELECT COMMITTEE ON
CALIFORNIA'S HORSE
RACING

SELECT COMMITTEE ON
CALIFORNIA INFRASTRUCTURE

March 5, 2007

Dr. William Hogarth, Director
NOAA Fisheries Service
1315 East West Highway, SSMC3
Silver Spring, MD 20910

Mr. Donald McIsaac, Executive Director
Mr. Donald K. Hansen, Chair
Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 200
Portland, OR 97220

Dear Dr. Hogarth, Mr. McIsaac, Mr. Hansen, and members of the Council:

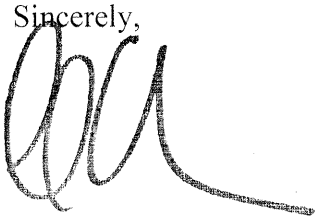
As the state Senator for the 3rd District in California, my district includes the Pacific coastline from just south of Bodega Bay to the Golden Gate. It is my duty to safeguard and protect the natural beauty of the Northern California coastline and the creatures that live there. I'm writing to you today because I'm concerned about the proposed exempted fishing permits (EFP) to expand the swordfish/thresher shark drift-gillnet fishery into current time/area closures and to develop a pelagic swordfish longline fishery within the Exclusive Economic Zone (EEZ). I urge you to deny both EFPs.

There is ample evidence that issuing these EFPs could have a huge impact on the endangered leatherback sea turtle and other marine wildlife. As you know, the California coast has been closed to swordfish pelagic longlining for 30 years and portions of the California and Oregon coastline have been closed to drift-gillnet fishing since 2001 to protect leatherback sea turtles which seasonally inhabit the waters off our coast. The Pacific leatherback sea turtle population has already plummeted from 91,000 in 1980 to currently fewer than 2,300 annual nesting females. If you allow pelagic longline swordfishing and drift-gillnet fishing back into these protected areas, it will place the critically endangered leatherback at greater risk of extinction and other protected and endangered marine species at risk.

Before we allow an animal species to be lost forever, I hope you'll continue to enforce the important conservation measures that have been hard-fought and are effective in protecting highly vulnerable species. The existing closures comply with domestic and international conservation mandates and are consistent with the best available scientific information. Both drift-gillnet fishing and longline swordfishing are highly indiscriminate fishing methods that have devastating effects on the marine environment. For this reason, the United Nations banned drift-gillnet fishing on the high seas in 1991, and California has had a ban on swordfish pelagic longlining for 30 years. We should do nothing less than honor these protections.

Please do your part to protect our coastline and deny these EFPs. Thank you for your consideration, and please do not hesitate to contact me with any questions.

Sincerely,



Carole Migden
State Senator, 3rd District

Mr. Donald K. Hansen, Chair
Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 200
Portland, OR 97220-1384
tel 1-866-806-7204 or (503) 820 2280
fax (503) 820-2299

RECEIVED
MAR 1 2 2007
PFMC

March 5, 2007

Dear Chair Hansen and members of the Council:

I am writing to express my opposition to the application before the Pacific Fishery Management Council (PFMC) for an exempted fishing permit (EFP) that would allow swordfish longline fishing along the U.S. west coast. Longline fishing has been banned for many years along the California and Washington coast due to bycatch concerns, and in 2004 this ban was extended to included the entire U.S. West Coast.

I am completing my PhD dissertation work on the movement patterns and foraging ecology of Laysan Albatrosses breeding on Guadalupe Island, Mexico. This nascent colony has undergone rapid expansion since it's inception in 1983. My satellite and geolocation tracking research shows that these birds depend on the offshore waters of the fringes of the California Current system. I'm sure you are familiar with the fact that 21 of 24 recognized albatross species are currently threatened or endangered and the main culprit is the longlining industry. **A decision to open Eastern Pacific waters to longlining puts not only this new Guadalupe population in immediate exposure to bycatch, but also exposes Black-footed albatrosses (threatened status) to bycatch.**

Longline fishing is a highly indiscriminate fishing method that results in significant bycatch of numerous marine species including sea turtles, whales, dolphins, seals, sea lions, albatrosses, sea birds, sharks, billfish and other fish species. This bycatch is often thrown back dead or injured placing additional pressures on protected species and already depleted fish stocks while altering food webs and subsidizing other marine animals. The migratory bird treaty act marked the end of the use of cannon swivel guns in market duck hunting - the longlining technique is a similar technique with less target specificity. **It is time to make a change in how we manage our marine resources – like the changes we as a nation made regarding terrestrial resource management in the early 1900's.**

The proposed EFP will undermine successful conservation measures protecting the critically endangered leatherback sea turtle, threatened Black-footed albatross, vulnerable Laysan albatross, valuable fish stocks, and other marine life, and the health and integrity of California, Oregon and Washington's' rich and diverse marine ecosystems.

I therefore urge the PFMC not to recommend the issuance of the EFP for swordfish longline fishing along the U.S west coast. I look forward to your reply on this issue.

Sincerely,

Robert W. Henry
Phd Student
Center for Ocean Health
Long Marine Lab
University of California Santa Cruz
Santa Cruz CA 95060
henry@biology.ucsc.edu
831.459.4581

Linn D. Barrett
4305 29th Street Road
Greeley, CO 80634

Donald K. Hansen
Chair
Pacific Fishery Management Council
7700 NE Ambassador Place
Suite 200
Portland, OR 97220-1384

March 6, 2007

Re: Exempted Longline Fishing Permit

Dear Chairman Hansen and members of the Council:

Longline fishing is a highly indiscriminate method of fishing and results in significant by-catch of a multitude of marine species (sea turtles, whales, dolphins, seals, sea lions, sea birds, sharks, billfish, etc.), which is often thrown back into the sea dead or injured. As a result, Longline fishing unnecessarily pressures protected species and depleted fish stocks. Longline fishing has been banned for many years along the California and Washington coast due to bycatch concerns. In 2004 this ban was extended to included the entire US West Coast.

Please know that I oppose the application by the Pacific Fishery Management Council (PFMC) for an exempted fishing permit (EFP) that would allow swordfish longline fishing along the U.S. west coast. I believe that the proposed EFP will undermine successful conservation measures that protect the critically-endangered leatherback sea turtle and valuable fish stocks. Moreover I believe the proposed EFP will have an adverse effect on the health and integrity of California, Oregon and Washington's' rich and diverse marine ecosystems.

Please do not to recommend the issuance of the EFP for swordfish longline fishing along the U.S west coast.

With utmost conviction and sincerity,

Linn D. Barrett

March 7, 2007

Mr. Donald K. Hansen
Chairman
Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101
Portland, Oregon 97220-1384
Email: pfmc.comments@noaa.gov

Dr. William Hogarth
Director
NOAA Fisheries Service
1315 East West Highway, SSMC3
Silver Spring, MD 20910
Email: bill.hogarth@noaa.gov

RE: EFP Application for Longline Fishery

Dear Mr. McIsaac, Mr. Hansen and members of the Council:

On behalf of the undersigned organizations we are writing to oppose the issuance of a proposed exempted fishing permit (EFP) for a longline fishery within the U.S. West Coast Exclusive Economic Zone (EEZ). The proposed EFP will undermine successful conservation measures protecting the critically endangered leatherback sea turtle, valuable fish stocks, and other marine life by allowing this non-selective gear type into areas where it is currently prohibited.

Pelagic longlining is a fishing method with a low degree of selectivity that consists of a main line up to 60 miles in length from which thousands of hooks can be deployed and left to soak for up to 10 hours. As a result a significant part of a pelagic longline fishery is bycatch that is caught on the hooks or entangled in the lines. Bycatch species of longline fishing include critically endangered leatherback sea turtles, loggerhead sea turtles, whales, dolphins, seals, sea lions, sea birds, sharks, billfish, and other fish species. This bycatch is either thrown back, often dead or injured, or alternatively commercialized, which places additional pressures on protected species and already depleted fisheries.

Due to concerns of the effects of such an indiscriminate fishing method on the marine environment, pelagic swordfish longline fishing has been prohibited within the California EEZ since 1977. In addition all pelagic longline fishing has been banned in the California and Washington EEZ's for over 15 years. In March 2004, this ban was extended to the entire West Coast EEZ for all pelagic longlining, and to the high seas for West Coast-based shallow-set swordfish pelagic longlining. These important conservation measures have been successful in helping to protect the target and non-target species caught or entangled by this non-selective gear type. The detrimental effects of pelagic longlining on marine species have been demonstrated by the US domestic Atlantic and Hawaii-based

longline fisheries, both of which have a long history of closures and regulations due to bycatch problems and the depletion of target species.

We note that although the applicant initially requests an EFP for a single longline vessel, the applicant also proposes the possibility of expanding and developing this longline fishery within the US West Coast EEZ to include up to 70 or more vessels. Given the above outlined concerns we believe the development and expansion of such a pelagic longline fishery within the US West Coast EEZ would be inappropriate. The EFP would weaken successful conservation measures for endangered sea turtles and other protected species, place increased pressure on already over fished and depleted fish stocks, and undermine the health and integrity of the marine ecosystem. Therefore, we respectfully request that the PFMC rejects the EFP application for a pelagic longline fishery.

Sincerely,

Karen Steele
Save the Leatherback Campaign Coordinator
Sea Turtle Restoration Project

Sharon B. Young
Marine Issues Field Director
Humane Society of the United States

Monica Engebretson
Project Director
Animal Protection Institute

Jason Schratwieser
Conservation Director
International Game Fish Association

John Hocevar
Oceans Specialist
Greenpeace USA

Robert Winter
Executive Director
Snorkel Bob Foundation

Larry M. Brown
Owner
Brown & Associates

Brendan Cummings
Ocean Program Director
Center for Biological Diversity

Dean W. Crawford
Director
International Big Fish Network, Inc.

James R. Spotila, Ph.D.
President
The Leatherback Trust

Mary Bull
Co-director
Greenwood Earth Alliance

Larry McKenna
Director
Save Our Leatherbacks Operation

Cathy Liss
President
Animal Welfare Institute

Mark Gold, D.Env.
Executive Director
Heal the Bay

Robert Krebsbach
Co-director
Chalice Farm & Sustainable Living Center

Australia
Mr Jon Nevill
Director
OnlyOnePlanet Australia

From Beau Richards <beau.richards@ca.rr.com>

Date Thursday, February 1, 2007 6:35 pm

To pfmc.comments@noaa.gov

Subject consideration of Exempted Fishing Permit (EFP) by the Pacific Fishery Management Council

February 1, 2007

To: NOAA

Re: Pacific Fishery Management Council consideration of Exempted Fishing Permit (EFP)

My name is Beau Richards, a fisherman in Los Angeles, California. I was recently made aware of the consideration facing this Council:

"The Pacific Fishery Management Council is considering an Exempted Fishing Permit (EFP) that would allow one drift gillnet vessel to conduct an experimental pelagic longline fishery in West Coast federal waters."

NCMC
http://www.savethefish.org/action_items_Pacific_LL.htm

The PFMC must surely know that the "experiments" of longlining have been conducted in our waters long ago. The results of such experiments have been clear: longlining, with or without new restrictions, is highly destructive to the marine environment! I urge you to, as the Spike Lee film is entitled - Do The Right Thing. DENY the EFP and instead explore more "old school", yet effective methods of hunting Swordfish such as hand gear. I and the marine life thank you!!

We never know the worth of water till the well is dry. ~Thomas Fuller, *Gnomologia*, 1732

We do not inherit the earth from our ancestors, we borrow it from our children. ~Native American Proverb

Sincerely,

Beau Richards
beau.richards@ca.rr.com

From Doug Olander <Doug.Olander@worldpub.net>

Date Friday, February 2, 2007 5:55 pm

To pfmc.comments@noaa.gov

Subject say no to longlines

please don't take one giant step backwards and introduce longlines back into pacific coast fisheries, whether experimental or otherwise. they are indiscriminately destructive and have no place in our west coast's EEZ.

Doug Olander

From Adam Ramirez <ramingo1@hotmail.com>

Date Sunday, February 4, 2007 2:29 pm

To pfmc.comments@noaa.gov

Subject long lines

To whom it amy concern:

I am a teacher and life long fisherman from Santa Barbara, CA. I oppose the Exempted Fishing Permit (EFP) because it would produce indiscriminate killing of multiple species. Hand gear would be a much better alternative because fisherman could release non-targeted species.

Please deny any implementation of the EFP.

thank you,
Adam Ramirez

From LRi6923650@aol.com

Date Monday, February 5, 2007 7:51 am

To pfmc.comments@noaa.gov

Subject Expermental Longline Fishery

There is nothing experimental about this. We know pelagic longlines to be as destructive as drift gilnets in that it is so indiscriminate. If they can't do it with hand gear then there are not enough fish for them to be out there taking fish. There is nothing about circle hooks that is magic or new. Greed is just the same.

Lew Riffle
650 Via Hierba
Santa Barbara, CA 93110

From Jim Bockerstette <jbockerstette@systemsintegrated.com>

Date Thursday, February 8, 2007 8:20 am

To pfmc.comments@noaa.gov

Subject Opposed To Longlines

Hello,

I am strongly opposed to the experimental long line fishery being proposed by the council. This gear is too destructive and indiscriminate and should never be considered for commercial fishing in our waters. All of our efforts should be focused on removing this gear from our waters. I just got back from a fishing trip to Loreto in Baja Mexico. I tried fishing the inshore waters around a remote fish camp I was staying at with very poor results. In fact, I barely saw any fish at all. Then I realized that the whole area had been gillnetted and now there is nothing left. The point I am making is that gillnets killed everything not just the commercially valuable species. Long lines do the same thing; they kill indiscriminately. Please don't allow this gear in our waters.

Thanks,
Jim

From Matthew.A.Genovese@kp.org

Date Thursday, February 8, 2007 1:59 pm

To pfmc.comments@noaa.gov

Subject just say "NO!!!"

Fishing has continued to decline off the west coast. We should oppose any measures that would facilitate further dessimation. The Exempted Fishing Permit is just such a slippery slope that could lead to real tragedy. Please don't allow it.....thanks!

Dr Genovese

From Derrick Sander <derrick@abmechanical.net>

Date Monday, February 12, 2007 2:12 pm

To pfmc.comments@noaa.gov

Subject Longline tactics

To whom it may concern: Please limit the use of tactics for fishing which to not in some way enhance the fishery itself. This is an extremely fragile resource which to date no one has been able to replicate.

From Chad <chad@charterlinks.com>

Date Monday, February 12, 2007 6:07 pm

To pfmc.comments@noaa.gov

Subject Long-Line Fishing

To Whom it May Concern,

Please oppose the EFP for an experimental pelagic longline fishery in West Coast federal waters.

Regards,

Chad Yochens

From "Gasparac, Christine" <Christine.Gasparac@sen.ca.gov>

Date Wednesday, March 7, 2007 3:09 pm

To pfmc.comments@noaa.gov

Subject Letter of Support for Sea Turtle Conservation Efforts

Attachments Sea Turtle Support Letter 3.5.doc 60K

I've attached a letter of support for continued conservation efforts for the leatherback sea turtle. Please see the letter attached.

Thank you—
Christine

Christine Gasparac
District Director
Senator Carole Migden
455 Golden Gate Avenue, Suite 14800
San Francisco, CA 94102
(415) 557-1300 (v)
(415) 557-1252 (f)

From PFMC Comments <pfmc.comments@noaa.gov>
Sent Thursday, February 22, 2007 2:48 pm
To Mike Burner <Mike.Burner@noaa.gov> , Kit Dahl <Kit.Dahl@noaa.gov>
Subject [Fwd: Please no long lines]

----- Original Message -----
From Joe Zambrano <j_zambrano@mhs-hs.org>
Date Thu, 22 Feb 2007 14:06:25 -0800
To pfmc.comments@noaa.gov
Subject Please no long lines

I a conservationist and a man who refuses to buy store bought fish I beg you to oppose the long lines. They kill so many indiscriminate fish it is appalling. Please vote no and don't do this!

From PFMC E-Mail Comments <pfmc.comments@noaa.gov>
Sent Wednesday, February 14, 2007 2:25 pm
To Mike Burner <Mike.Burner@noaa.gov> , Kit Dahl <Kit.Dahl@noaa.gov>
Subject [Fwd: Pacific longlines]

----- Original Message -----
From Brenainn <bdurkan115@comcast.net>
Date Wed, 14 Feb 2007 15:35:05 -0500
To pfmc.comments@noaa.gov
Subject Pacific longlines

Which way are we going here? Forwards or backwards?? Seriously, how can you think about caving in to commercial fishing pressures, is it a money thing, like in my state of Massachusettes?? Come on guys,B

From PFMC E-Mail Comments <pfmc.comments@noaa.gov>
Sent Wednesday, February 14, 2007 11:53 am
To Mike Burner <Mike.Burner@noaa.gov> , Kit Dahl <Kit.Dahl@noaa.gov>
Subject [Fwd: Opposed to longline fishing]

----- Original Message -----
From Susan Hunter <sbh@soudermiller.com>
Date Wed, 14 Feb 2007 09:36:53 -0700
To pfmc.comments@noaa.gov
Subject Opposed to longline fishing

I am an avid angler in both salt and fresh water. In light of the data that we have collected on the reduction of pelagic species of fish and other marine life, I urge NOAA not to allow the substitution of long-line fishing for gill net operations. Both types of fishing do not discriminate on species of creature caught and both only encourage wasteful practices. Our country has an obligation to lead by example to reduce the devastation of ocean resources by encouraging sustainable fishing. If we allow an experimental long-line test in the Pacific, it will only act as a stimulus for commercial fishing operations to resume it, which will probably lead to more over-fishing of many species of fish.
I am greatly worried about the collapse of fish populations. Because we have learned so much recently about the habits and migration of sea life and are constantly adding to our understanding of the seas, we can surely step up and act responsibly in light of the crisis facing the world's oceans.
Thank you,

From PFMC E-Mail Comments <pfmc.comments@noaa.gov>
Sent Monday, February 12, 2007 8:52 am
To Kit Dahl <Kit.Dahl@noaa.gov>
Cc Mike Burner <Mike.Burner@noaa.gov>
Subject [Fwd: longlines]

----- Original Message -----
From Mark Apelman <mapelman@comcast.net>
Date Sat, 10 Feb 2007 17:59:22 -0700
To pfmc.comments@noaa.gov
Subject longlines

I just wanted to express my opinion, which is, I am against driftnets, and longline fishing, and think it would not be a good idea to open pelagic longline fishing.
Mark Apelman

From PFMC E-Mail Comments <pfmc.comments@noaa.gov>
Sent Monday, February 12, 2007 8:51 am
To Kit Dahl <Kit.Dahl@noaa.gov>
Cc Mike Burner <Mike.Burner@noaa.gov>
Subject [Fwd: longlines]

----- Original Message -----
From James Heitzman <jamesheitzman@sbcglobal.net>
Date Sat, 10 Feb 2007 17:12:08 -0800 (PST)
To pfmc.comments@noaa.gov
Subject longlines

Hello,

No more longlines! Enough is enough.

Thank you

From PFMC E-Mail Comments <pfmc.comments@noaa.gov>
Sent Monday, February 12, 2007 8:51 am
To Kit Dahl <Kit.Dahl@noaa.gov>
Cc Mike Burner <Mike.Burner@noaa.gov>
Subject [Fwd: Longlines]

----- Original Message -----
From Paul Lepore <paul.lepore@cox.net>
Date Sat, 10 Feb 2007 21:24:20 -0800
To pfmc.comments@noaa.gov
Subject Longlines

Please do not allow ANY permits for long lines. The ocean is already being devastated. It is up to US to stop it.
Thank you
Paul Lepore

From PFMC E-Mail Comments <pfmc.comments@noaa.gov>
Sent Monday, February 12, 2007 8:51 am
To Kit Dahl <Kit.Dahl@noaa.gov> , Mike Burner <Mike.Burner@noaa.gov>
Subject [Fwd: EFP for an experimental pelagic longline fishery]

----- Original Message -----
From William H Lynch <lynch.william@gene.com>
Date Sun, 11 Feb 2007 20:17:23 -0800
To pfmc.comments@noaa.gov
Subject EFP for an experimental pelagic longline fishery

Dear PFMC-

As an avid fisherman and citizen I am writing to strongly urge you to oppose the EFP for an experimental pelagic longline fishery in West Coast federal waters currently under the Councils consideration. Thank you,

Longline Fishing for Swordfish:

Lessons learned from Hawaii

Closure & Reopening

Yonat Swimmer, PhD
Pacific Islands Fishery Science Center
NOAA Fisheries
Honolulu, Hawaii

Pelagic Longline Fishing

Hook depth is function of:
No. of hooks between floats
Distance between floats
Lead weights
Boat speed
Branchline interval
Sagging Ratio (SR = boat speed/line)
Water currents, etc

Typical Longline Gear

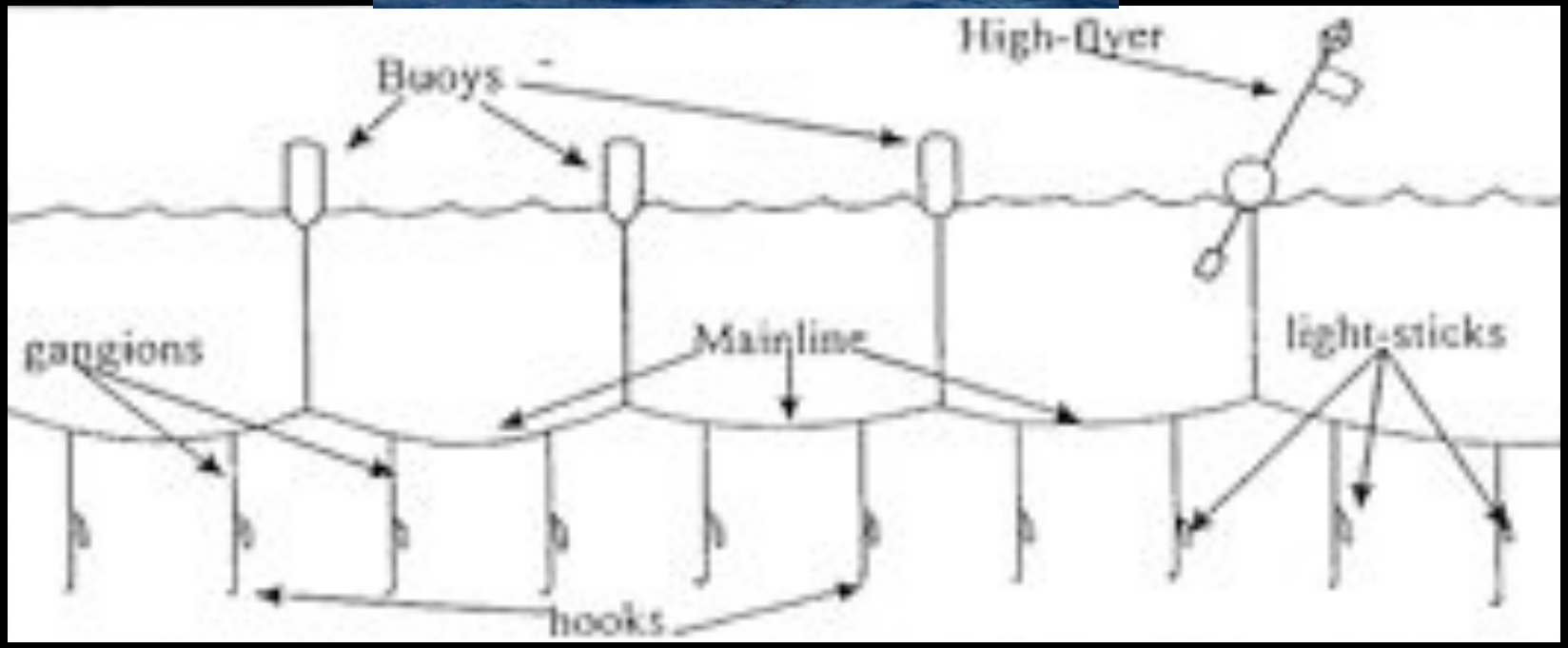


Figure 1. Values indicate the 95% depth and temperature preferences (combined day and night) for various pelagic species as indicated by electronic tagging studies funded by the Pelagic Fisheries Research Program of the University of Hawai'i, NOAA Fisheries, and Pacific Islands Fisheries Science Center.

Selectivity

Selective fishing refers to a fishing method's ability to target and capture organisms by size and species during the fishing operation allowing non-targets to be released Unharmed.

No gear is known to be 100% selective for a given species or size range of individuals.

Incidental Captures

Update on Bycatch Reduction Methods in Longline Fisheries

- **Sea Turtles**
  eg., Circle hooks, Fish bait, Line cutters

- **Seabirds**
  eg., Tori lines, Blue dyed bait, Thawed bait, Weighted lines, Side setting

- **Sharks**
  eg., Chemical deterrents

- **Marine Mammals**
  eg., Fleet communication, fishermen education

Sea Turtle Bycatch

--hard shell (loggerheads)
--leatherbacks

Sea Turtle Bycatch Research in the North Atlantic

By NOAA with the US Shallow-Set Fishery

BLUE WATER FISHERMEN'S ASSOCIATION

Treatments

Hook and Bait

Catch Species **Results**

Loggerhead Turtles 71% Reduction
Leatherback Turtles 66% Reduction
Swordfish 63% Increase
Bigeye Tuna 90% Reduction

versus

Control

Hook and Bait

Loggerhead Turtles 74% Reduction
Leatherback Turtles 75% Reduction
Swordfish 30% Reduction
Bigeye Tuna 24% Increase

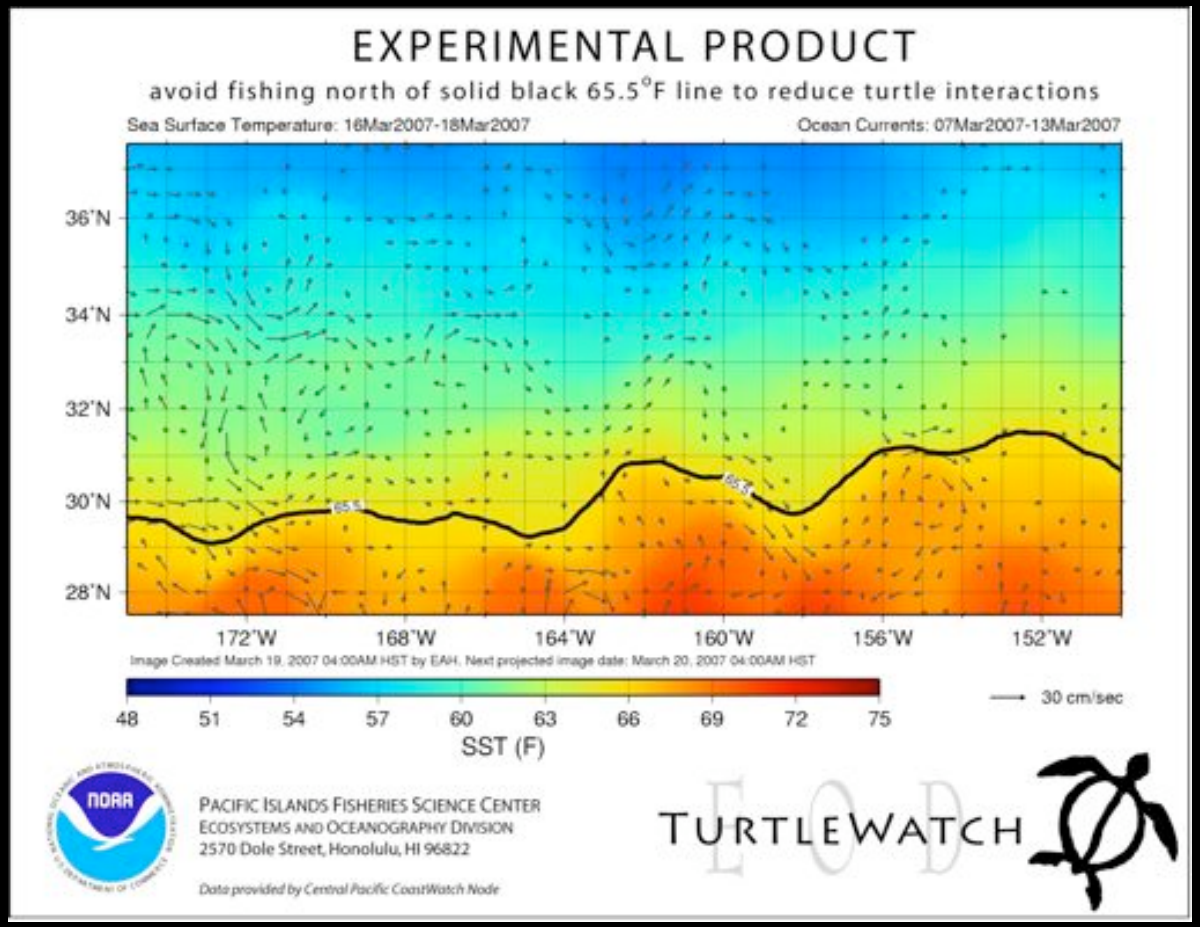
Loggerhead Turtles 88% Reduction
Leatherback Turtles 83% Reduction
Swordfish 20% Increase
Bigeye Tuna 80% Reduction

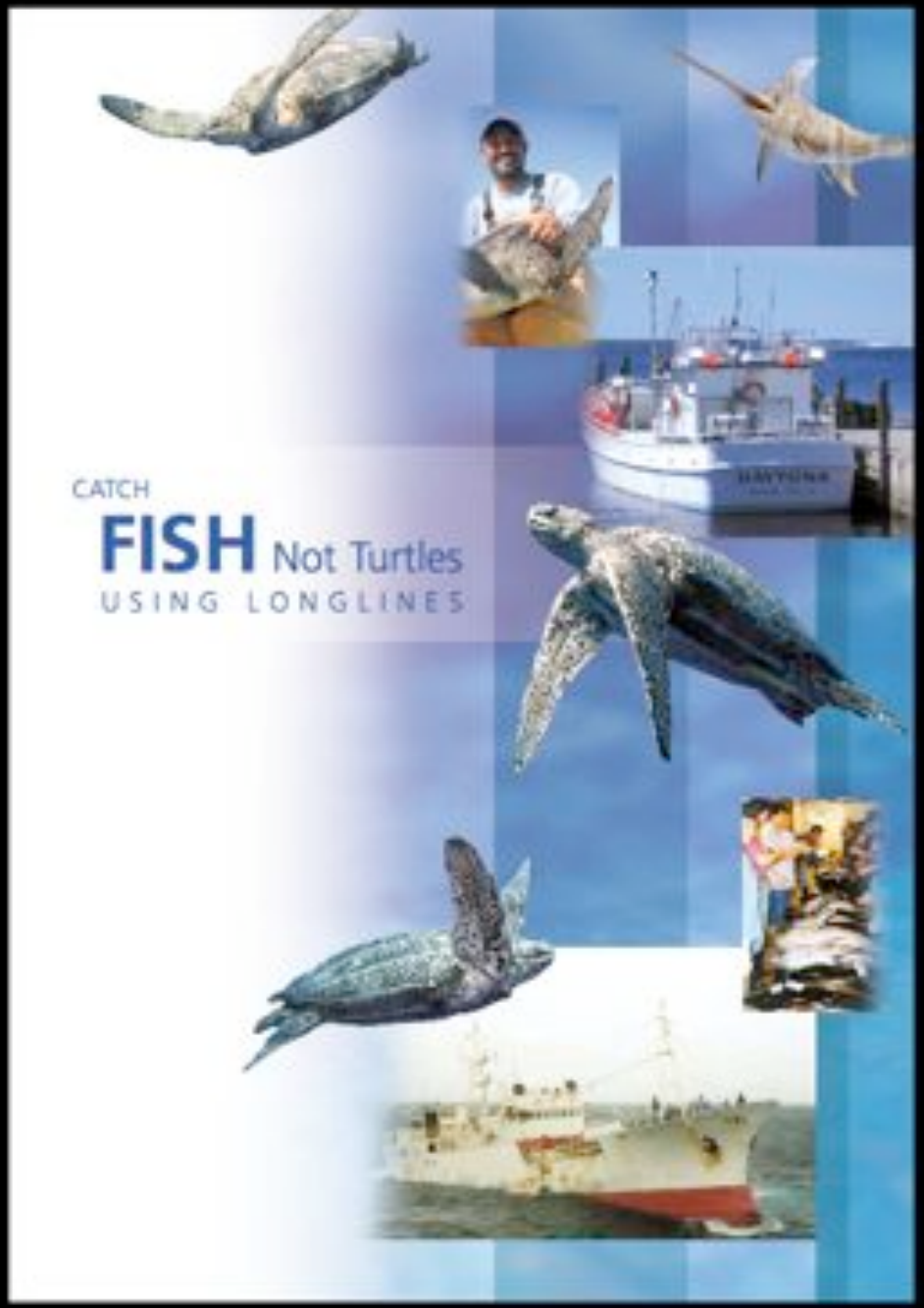
Circle hooks reduce deep hookings compared with “J” shaped hooks, increasing probability of survivorship

Chaloupka et al., 2004

Online resources to identify areas with oceanographic Conditions suggestive of ideal loggerhead sea turtle habitat. Used to guide fishers away from areas in order to reduce sea turtle-longline interactions:

http://www.pifsc.noaa.gov/eod/turtlewatch.php



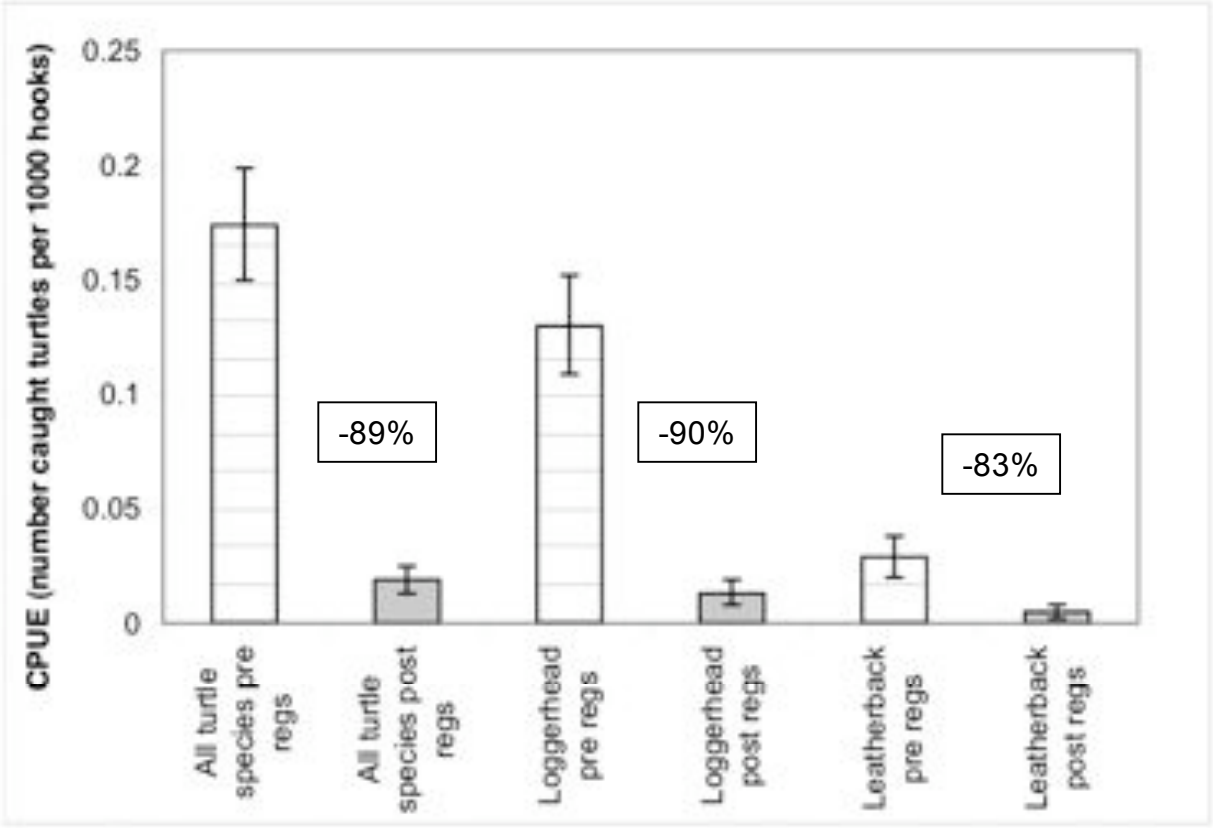

CATCH
FISH Not Turtles
USING LONGLINES


For More Information and to Share Your Ideas

Equipment for Animals boated

For Animals not-boated

Sea Turtle Interactions (CPUE)
Pre- and Post- Hawaii Regulations



Gilman et al. 2006

Update on Bycatch Reduction Methods in Longline Fisheries

- **Sea Turtles**
  eg., Circle hooks, Fish bait, Line cutters

- **Seabirds**
  eg., Tori lines, Blue dyed bait, Thawed bait, Weighted lines, Side setting

- **Sharks**
  eg., Chemical deterrents

- **Marine mammals**
  eg., Fleet communication, fishermen education

Fast-sinking lines reduce seabird mortality in longline fisheries

GRAHAM ROBERTSON

Bullers and white-capped albatrosses fight over fish lost from a longline.

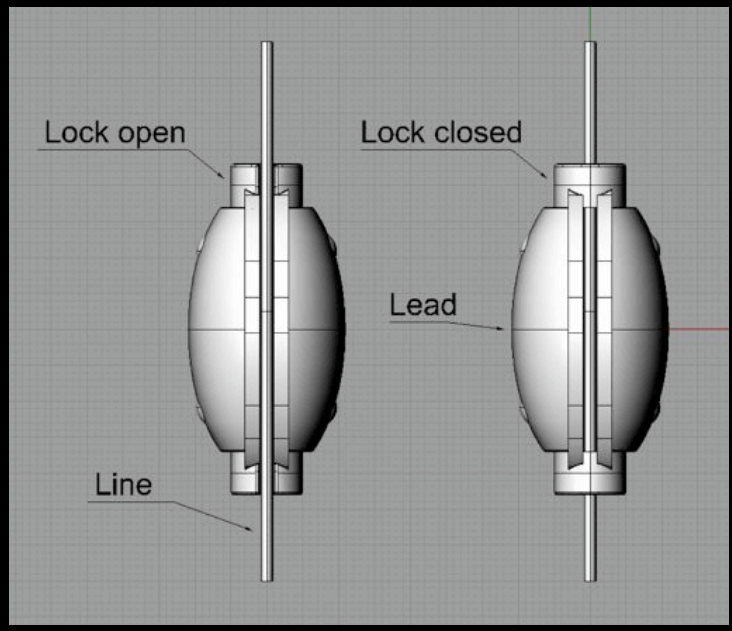
Longline fisheries are implicated in the decreases of many albatross and petrel species worldwide. Seabirds die when they attack baited hooks when lines are being set, become hooked or entangled, pulled underwater and drown. In many longline fisheries seabird fatality is part of 'normal' commercial fishing operations, though the number of birds accidentally killed can vary greatly with location, time of year and type of fishing gear used. We have been addressing this problem by collaborating with fishing industries to develop fishing gear and practices that reduce seabird mortality.

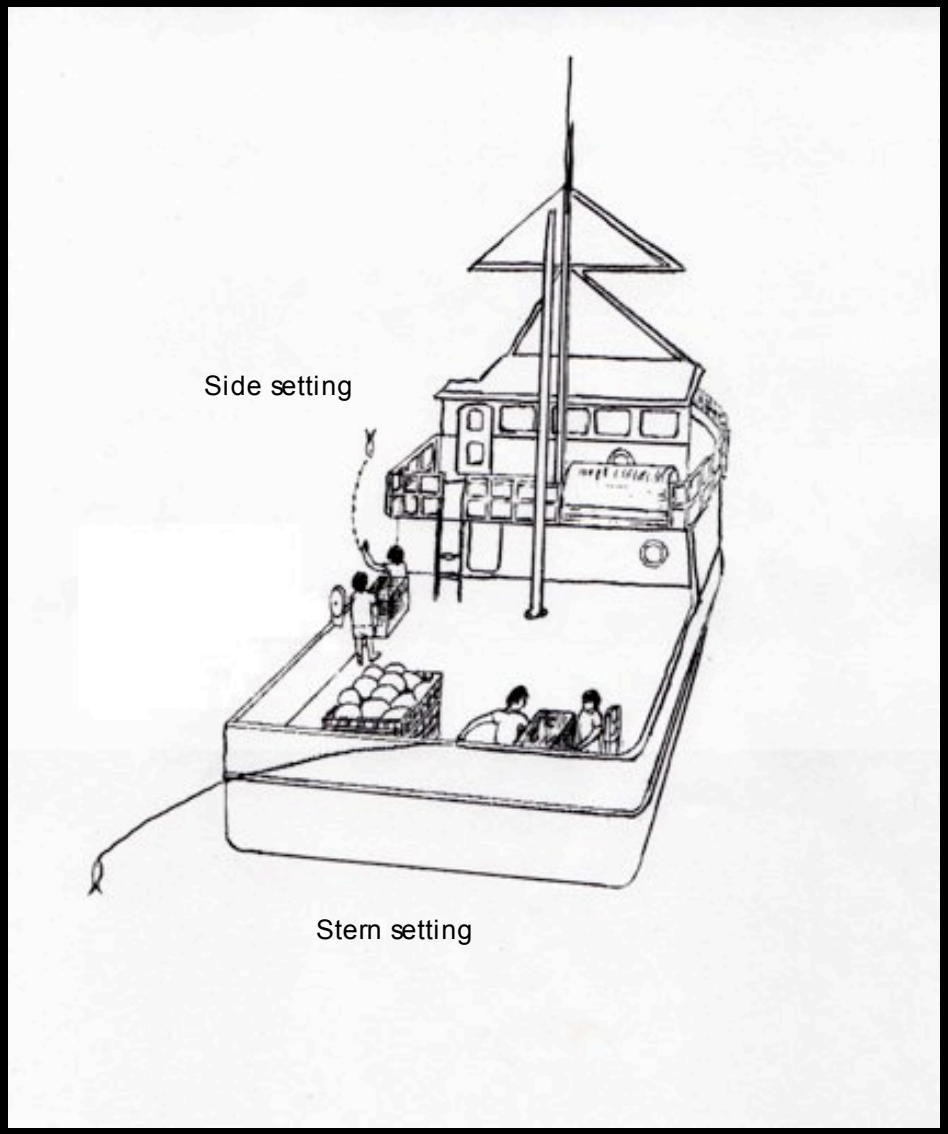
The risks to seabirds are increased by longlines that sink too slowly. Typically, when longlines enter the water they 'float' just beneath the surface, being held aloft by propeller turbulence and wave action. Depending on the vessel and gear type, they might remain in this lofted position for 20 seconds or so and be 50 metres or more astern before they start sinking, making baits easy targets for seabirds. Ideally longlines should start sinking the instant they enter the water and sink as fast as possible.

Longlines with integrated weight (beads of lead woven into the fabric of the line) have the capacity to meet these requirements. To test the effectiveness of longlines with integrated weight the Australian Antarctic Division teamed together with New Zealand Ling Longline (a NZ fishing consortium), Fiskevegn A.S. of Norway (a major longline manufacturer) and the New Zealand Department of Conservation and Ministry for Fisheries. We chose the amount of weight to be inserted into the longline from a previous trial of the sink rates, operational effectiveness and fish catch success of samples of line containing 25 g/m, 50 g/m, 75 g/m and 100 g/m integrated weight. The 50 g/m line performed best – it sank instantly, sank 2.5 times faster than normal line, did not affect fishing efficiency and was easy to use. The next step was to test the performance of the line while under attack from seabirds.

We tested the new line in November 2002 in the ling fishery near Solander Island, south of New Zealand. This was an ideal area for the test because it is frequented by large numbers of shearwaters, albatrosses and white-chinned petrels, species that regularly get killed on longlines. It was important to have white-chinned petrels in the trial because their attacks on longlines are very hard to prevent: they're strong, manoeuvrable fliers and excellent divers and – unlike albatrosses and shearwaters – are caught equally in the day and night. These traits place them at the top of the list of longline-vulnerable seabirds.

We conducted the trial on the F/V *Janas*, a 46.5 m Norwegian-built autoline vessel (hooks are baited automatically) commercially operated as part of New Zealand Ling Longline. The *Janas* fishes with thirty 1,800 m-long magazines of longline which carry a total of 36,000 hooks. We replaced 15 magazines of normal (unweighted) line with 15 magazines of integrated weight line and fished with both longline types side by side. We deployed a bird scaring streamer line over





Fact Facts

Side Setting for Hawai'i Longliners

To minimize the capture of seabirds and realize big operational benefits, try setting longline gear from the side of your vessel. Here's the how, why, and who of side setting in Hawai'i.

HOW TO SIDE SET

Side setting means **setting longline gear** from the side of the **vessel rather than the** conventional position **at the stern.** Crew set baited hooks **closest to the** site of the vessel hull where **seabirds,** such as albatrosses don't survive them). Ideally, by the time **the** stern passes, the **baited** hook beyond the reach of seabirds.

Side setting tips:

- Use **10** g weighted swivels **within** 1 m of the hook.
- Set as far forward **as possible to maximize** the time for hooks to **sink beyond the reach** of seabirds. This also makes it easier to deal with side tangles and buddy thrown hooks. The line should then **not** be restricted from setting far forward mast to mount then must line shooter at least 0.5 m from the stern corner to allow space for a bird curtain.
- Throw baited hooks as far forward and as close to the hull as possible.
- Clip branch lines to the mainline the moment that the vessel passes the baited hook. This minimizes tension in the branch line, and keeps the baited hook from being pulled towards the surface where birds can reach it.
- Use a bird curtain between the setting position and the stern to prevent birds from snatching at flight path where hooks are being set.

OVERBOARD SIDE SETTING

A vessel's layout may make it impossible to set from **the port side or** it may be possible to set further **forward from the** starboard side. Setting from the **starboard side can** reduce birds' ability to take advantage **of wind direction** to access baited hooks. When **setting from the** starboard side, use a main line shooter **roller and mounting** point that accommodates right side mounting.

GEAR TANGLING IN THE PROP

Most captains are concerned that side setting will cause gear to get fouled in the propeller. Researchers have set from various port and starboard positions in various sea conditions and haben abrupt turning maneuvers in an attempt to foul the gear while side setting and found that side setting did not result in gear tangling, even when the captain tried his best to foul the gear. This has been confirmed by the eight vessels in the Hawai'i fleet now side setting.

OPERATIONAL BENEFITS

Side setting provides large operational **cost-saving** benefits, especially for vessels **with or aft** wheelhouses and main cabin **forward of** the wheelhouse.

- Increases Safety and Efficiency. **Side setting** allows the captain to better supervise **fishing** operations from the **bridge.**
- Saves Space. Side setting allows **the gear to** be stored in a much smaller **area. Hauling** an inflatable deck space, even on **vessels** with a forward wheelhouse. **Instead of** hauling two separate reels, **one big, offline** (line) for line setting and an **inline** for line hauling, side setting requires only a single reel area where all gear can be stored.
- It's Practical for Crew. Side setting eliminates the need to bend gear. Vessels conventionally setting from the stern move bins, buoys, and radio beacons between the mid-ship hauling position and the stern setting position and also must move large quantities of bait.
- Facilitates Emergency Maneuvering. Emergency maneuvering when a main line gets during setting is more effective when line setting from mid-ship on the starboard side.

INCREASED FISHING EFFICIENCY

Side setting may allow you to get more baited hooks set in warm more hours and soonAlso than conventional stern setting or using blue dyed bait. When side setting,

- Bird's take fewer baits from hooks.
- The hook setting rate is slightly faster, so you may be able to get more gear in the water and
- Bait retention is slightly higher.

BIRD AVOIDANCE EFFECTIVENESS

Of the numerous seabird avoidance methods that have undergone scientific assessment, side setting is one of the most effective. In short-term study conducted in Hawai'i in, NMFS found that side setting nearly eliminated bird capture and resulted in the lowest seabird capture ratio of the three methods used in the trial - lower than using **blue dyed bait or an underwater setting chute.**

WHO'S DOING IT

The following vessels in the Hawai'i longline fleet are voluntarily side setting. Contact the captain and crew of these vessels for more information and for tips on converting to side setting.

F/V **Amanda K.**, Captain Richard Robertson
F/V **Black Magic**, Captain Brian Arakaki
F/V **Candeligh**, Captain Craig Nuuhiwa
F/V **Cumberland Dad**, Captain Leland Oldenburg
F/V **Excalibur**, Captain Jack Gabbard
F/V **Kaimi**, Captain Dino Kelly
F/V **Kelly Mary**, Captain Jerry Kay
F/V **Susana**, Captain Roger Mosser

SAFELY RELEASING Seabirds & Avoiding BIRD CAPTURE

Mortality in longline fisheries threatens the survival of some seabird species. The birds most often caught are especially sensitive — some live over 60 years and lay only one egg each year or two. While the number of birds you catch may seem small with so many birds following astern, the combined bird catch by all fleets is significant. You can increase survival chances for a bird brought aboard alive and prevent injury to yourself by handling the bird properly. For threatened species, each bird saved is important.

Bring bird aboard

1. Maneuver vessel so bird is brought alongside without line tension. May require you to slow or stop hauling, and slow or stop vessel.
2. Work in a team of two. Use long sleeved shirt, gloves, glasses, & towel for safety.
3. Lift bird aboard preferably with a net, otherwise by seizing bill and wing tips, and body—avoid pulling bird up with the line.

Restrain bird

4. Wrap bird in towel and cover eyes to keep feathers clean and bird calm.
5. Keep face away from bill. Hold back of head, avoid holding the soft neck. If hooked in beak, hold head and bill. Do not cover nostrils. Bird may vomit—release bill or bird may suffocate.
6. Hold the bird's body at hip level. Carefully fold wings against the body. Hold bird firmly but do not squeeze—bird needs to move the sides of chest to breathe.
7. One person holds bird. 2nd person removes fishing gear. Cut the line close to the hook.
8. If bird is lightly hooked in the beak, wing, or foot, or hook is sticking out of bird's body, cut hook and pull hook out.

Rest and dry

12. If bird is dry, holds head erect, stands with wings in normal folded position, and is energetic, go to step 17.
13. If bird is waterlogged and exhausted, place in a quiet, dry, shaded place in a large crate with air holes for an hour or two. Put a towel in the bottom of the crate. If a crate is not available, leave bird alone on quiet, protected part of deck.
14. Check the bird every half-hour. Don't attempt to feed.

Swallowed hook or injured bird

9. If hook went down throat and the hook is not visible, cut line as short as possible. Do not pull on the line or try to cut the hook out.
10. If possible, bring birds that swallowed hook and birds with wounds or broken bones ashore for treatment.
11. If cannot bring ashore, then follow remaining steps to release the bird.

Release

15. If the bird is dry, holds head erect, responds to sound, and stands with wings in normal folded position; it is ready to release.
16. Slow vessel.
17. Slowly lower bird by hand to water, releasing hold on head last. Release away from line hauling.
18. Wait until bird is clear of the vessel before motoring away.

Avoid Bird Capture During Setting

Catch fewer birds, save bait, catch more fish, make more money!

- Add more weight close to hooks to increase sink rate
- Set at night
- Thaw bait
- Use a bird-scaring line
- Use underwater setting equipment

Avoid Bird Capture During Hauling

- Discard offal and spent bait on opposite side of vessel from line hauling
- Synchronize vessel speed and hauling rate so baited hooks don't trail on the sea surface astern—use a coiling machine to retrieve baited hooks fast

For example, invented by Japanese fishermen, a line with streamers scares birds from baits when setting. Streamers can also be deployed at line hauling area to scare birds from baits during hauling – make your own or buy one from a fishing equipment supplier.

To learn more and share your ideas:

National Audubon Society oceans.audubon.org • Hawaii Longline Association www.nhi.com/hla/ • BirdLife South Africa www.savethealbatross.org.za

Update on Bycatch Reduction Methods in Longline Fisheries

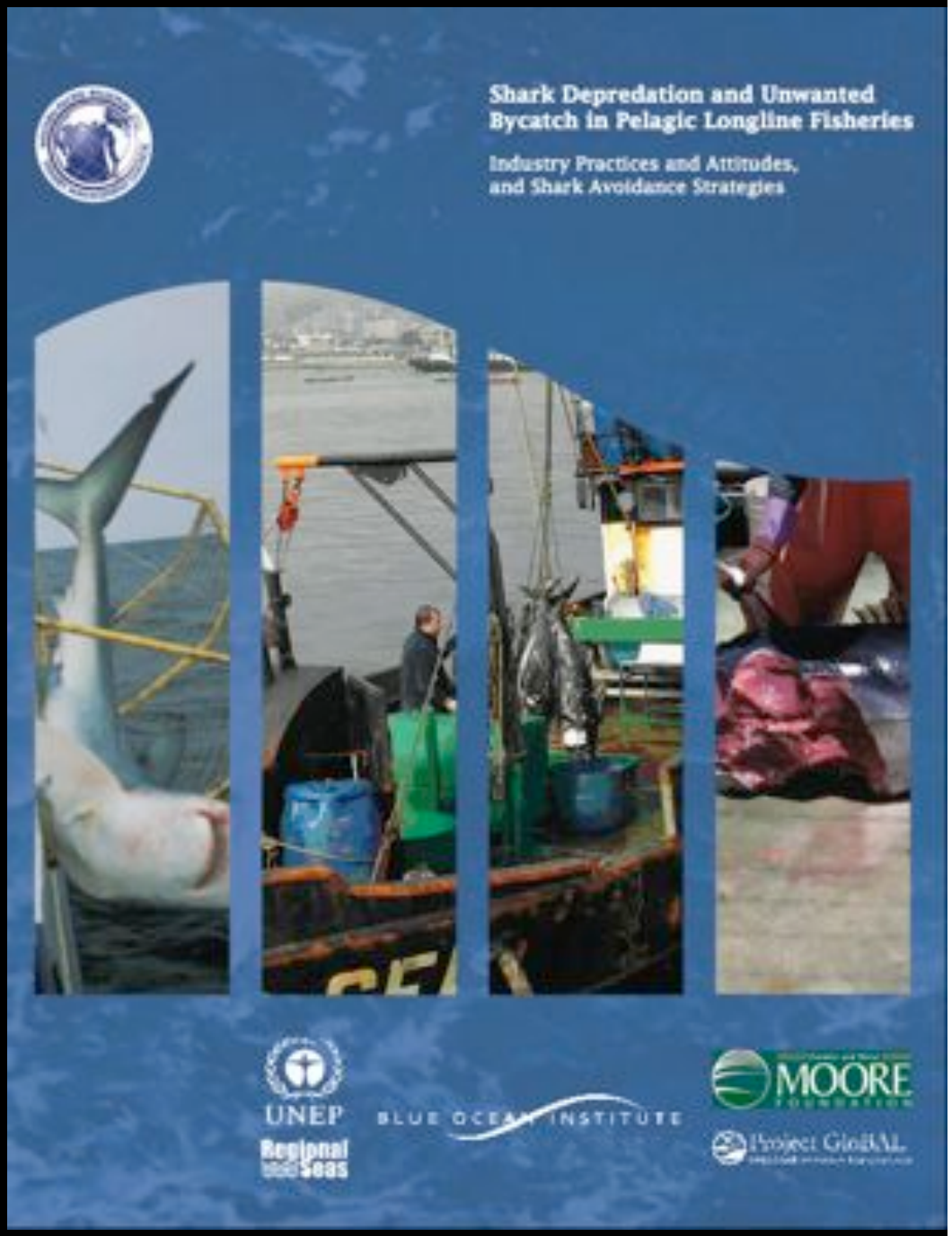
- **Sea Turtles**
  eg., Circle hooks, Fish bait, Line cutters

- **Seabirds**
  eg., Tori lines, Blue dyed bait, Thawed bait, Weighted lines, Side setting

- **Sharks**
  eg., Chemical deterrents

- **Marine mammals**
  eg., Fleet communication, fishermen education

sharks are significant portion of catch in many longline fisheries



Shark bycatch reduction/mitigation

Deterrent studies:

--chemicals
--rare earth magnetics

De-hookers

Shark CPUE: Circle hooks + Bait

- Inconclusive--conflicting info on effect of circle hooks on shark CPUE.
- Use of mackerel bait alone reduces shark CPUE.
- Assessment of HI LL observer data found that shark CPUE was significantly lower (by 36%) after regulations (18/0 Circle hook, mackerel bait) than before (9/0 J hook, squid bait)

Update on Bycatch Reduction Methods in Longline Fisheries

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(Dalla Rosa and Secchi 2007)

A review of cetacean interactions with longline gear

ERIC GILMAN*, NIGEL BROTHERS**, GEOFF MCPHERSON# AND PAUL DALZELL**

Contact e-mail: egilman@blueocean.org

ABSTRACT

Fishery-cetacean interactions, including those with longline gear, give rise to economic, ecological and social concerns. This paper reviews problems resulting from cetacean longline interactions, considers potential strategies to reduce interactions and identifies research priorities and approaches. Depredation by cetaceans (removal and damage of hooked fish and bait from fishing gear) and damage and loss of fishing gear create economic problems; however, the magnitude of this problem is poorly understood. There is also insufficient information to determine whether there are population-level effects resulting from injury and mortality of cetaceans (from incidental entanglement and hooking and from deliberate actions to discourage depredation). Fishery-cetacean interactions may also: change cetacean foraging behaviour and distribution; increase fishing effort to make up for fish taken from gear by cetaceans; and create errors in fish stock assessments that do not account for cetacean depredation. Negative public perceptions of longline fishing can result from news of incidental and deliberate injury and mortality of cetaceans associated with longlining. Information on how to reduce cetacean interactions with longline gear is also limited, as is the understanding of the mechanisms responsible for them. Strategies already employed in some fleets include refraining from setting or cutting sets short when problematic species of cetaceans are observed and fleet coordination of daily fishing times and positions. Many fishermen perceive depredation as an i
possible cetacean avoidance strategies that warrant consideration, includi
and spatially unpredictable and sporadic hotspots of aggregations of ce
sound of the vessel, gear, and setting and hauling activities; (3) quieter
encasement of caught fish to reduce cetacean access to or interest in the
reduce the attractiveness of gear, bait and catch to cetaceans; (6) use of pi
a fleet's fishing grounds to distract cetaceans from actual fishing vessels; (7
signals; and (8) use of tethered scoutbuoys to track cetaceans and enable
rates should be examined for design and operational differences from ves
effective avoidance methods. There is a need for experimentation in ind
specific efficacy and commercial viability of cetacean avoidance strategi
differently to an avoidance method and cetaceans may habituate to an av
cetaceans.

KEYWORDS: DEPREDATION; FISHERIES; INCIDENTAL CATCH[S]

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MARINE POLICY

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Fleet communication to abate fisheries bycatch

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[b]*Western Pacific Regional Fishery Management Council, 1164 Bishop Street, Suite 1405, Honolulu, Hawaii 96813, USA*
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Received 4 April 2005; accepted 2 June 2005

Abstract

Fleet communication systems report near real-time observations of bycatch hotspots to enable a fishery to operate as a coordinated "One Fleet" to substantially reduce fleet-wide capture of protected bycatch species. This benefits the bycatch species per se, reduces waste, and can provide economic benefits to industry by reducing risk of exceeding bycatch thresholds and causing future declines in target species catch levels. We describe case studies of fleet communication programs of the US North Atlantic longline swordfish fishery, US North Pacific and Alaska trawl fisheries, and US Alaska demersal longline fisheries, and identify alternative fleet communication program designs to reduce fisheries bycatch. Evidence supports the inference that these three fleet communication programs substantially reduced fisheries bycatch and provided economic benefits that greatly outweighed operational costs. Fleet communication may be appropriate in fisheries where there are strong economic incentives to reduce bycatch, interactions with bycatch species are rare events, adequate onboard observer coverage exists, and for large fleets, vessels are represented by a fishery association.

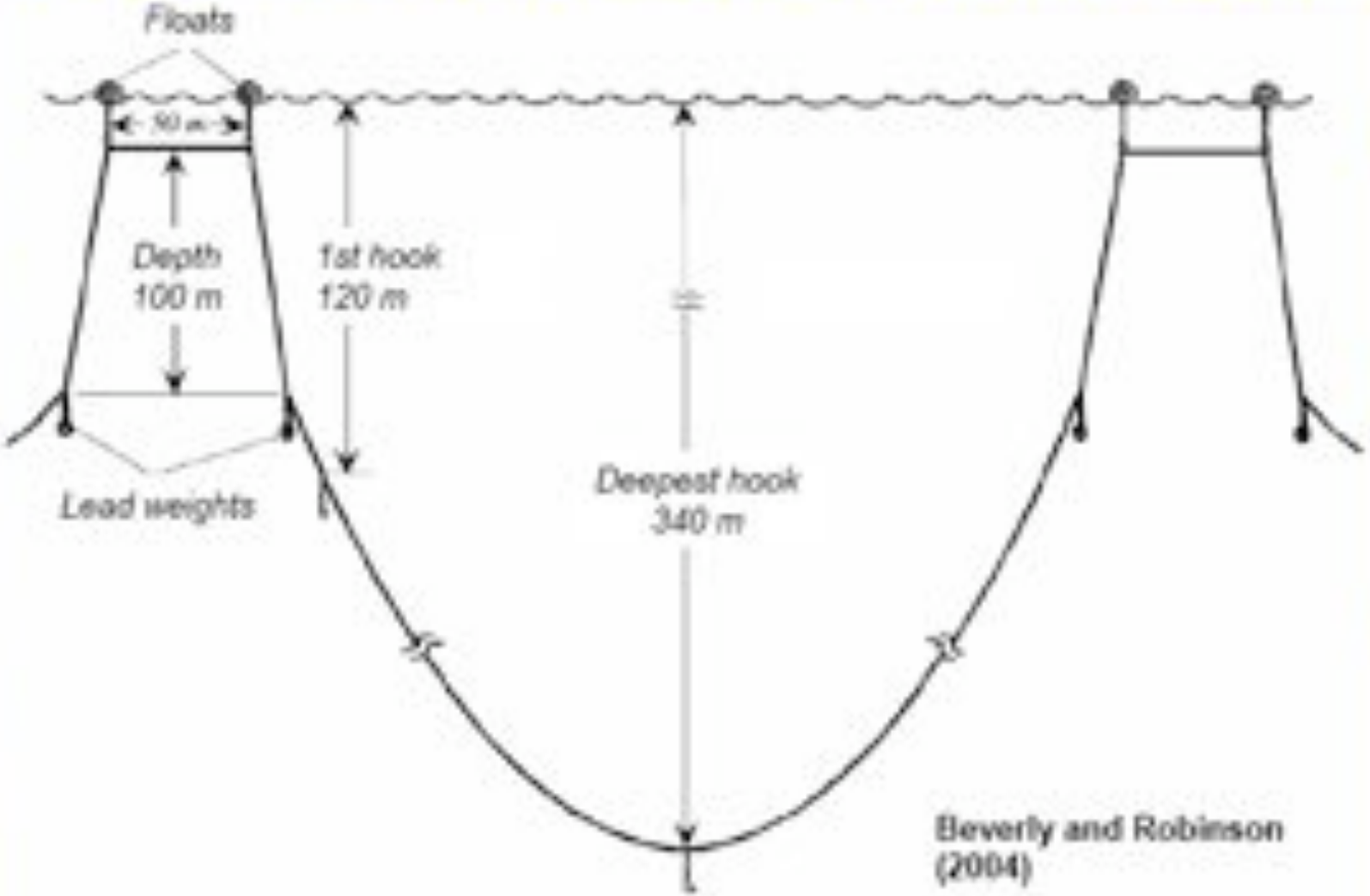
Keywords: Bycatch reduction; Fleet communication; Marine fisheries

Final remarks on Longline Fishing:

- Has potential to be a relatively high selective fishery with respect to target and non-target catch
- Bycatch mitigation efforts have proven very effective
- 1 baited hook= 1 catch, limited soak time
- Fishery is relatively easy to regulate, even dockside
- Very low chance of “ghost nets/lines” as longline gear not easily lost.

END

Deeper Setting: Satellite telemetry and observer data support that setting gear deeper than 40-100 m holds promise for reducing sea turtle interactions



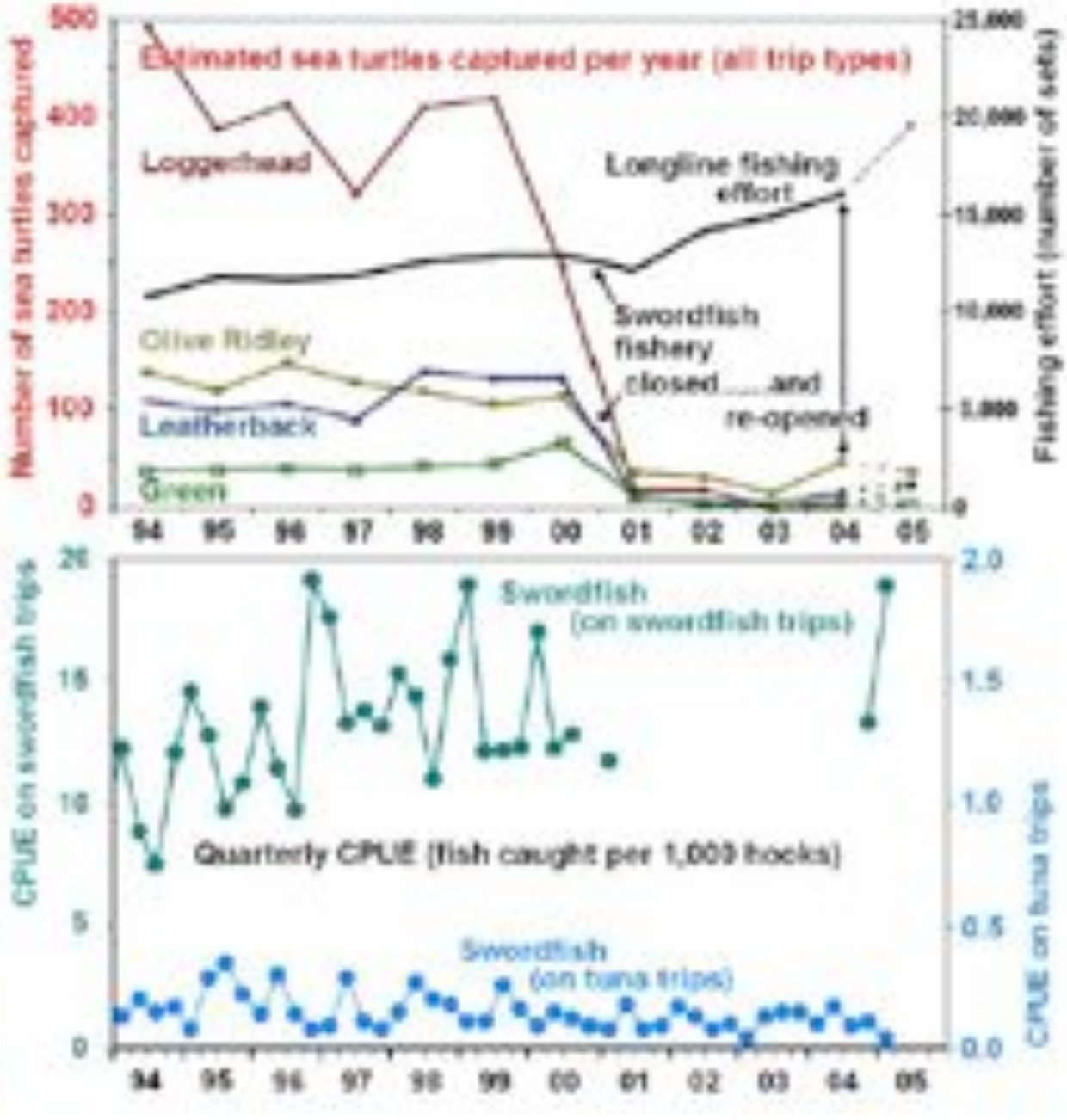
In the 1990's Hawaii longline sea turtle bycatch numbered around 700 per year.

In 2000 the shallow-set fishery targeting swordfish closed. Turtle bycatch was greatly reduced because turtles had mostly been caught on swordfish trips.

In 2004 a "model fishery" for sword-fish was reopened using 18/0 circle hooks and fish bait.

So far the turtle bycatch has stayed low, and the catch rate of swordfish has been very good

WIN WIN SOLUTION



- Azores, Bolten and Bjorndal 2003, unpublished found higher rates of blue shark cpue with circle hooks vs J hooks
- N. Atlantic longline study--18/0 Circle Hook vs. J 9/0 hook, small, but statistically higher blue shark cpue (~8.5 %) (Watson et al 2005)
- N. Pacific Japanese longline found no difference between circle and Japanese tuna hook (Yokota et al 2006)
- However, circle hook increases can be offset with use of mackeral vs. squid bait

- However, in N. Atlantic and Azores, use of mackeral vs. squid bait decreased shark cpue (Watson et al. 2005, Bolten and Bjorndal 20?)

HIGHLY MIGRATORY SPECIES ADVISORY SUBPANEL REPORT ON THE EXEMPTED FISHING PERMIT FOR LONGLINE FISHING IN THE WEST COAST EXCLUSIVE ECONOMIC ZONE

The Highly Migratory Species Advisory Subpanel (HMSAS) reviewed the draft environmental assessment (EA) for the longline exempted fishing permit (EFP) application and considered the supplemental report from the Scientific and Statistical Committee regarding the issuance of the EFP.

The HMSAS notes that this proposal is step one in a process of trying to determine whether a longline fishery is an economically viable alternative to the drift gillnet fishery. The HMSAS reaffirms its support for the proposed EFP as a means of evaluating the economic feasibility and recommends that the Council identify a preferred alternative that includes the necessary bycatch and environmental controls.

The HMSAS does not have specific recommendations regarding caps for protected species and defers consideration of such limits to the Highly Migratory Species Management Team.

PFMC
04/05/07

HIGHLY MIGRATORY SPECIES MANAGEMENT TEAM REPORT ON EXEMPTED FISHING PERMIT (EFP) FOR LONGLINE FISHING IN THE WEST COAST EXCLUSIVE ECONOMIC ZONE

The Highly Migratory Species Management Team (HMSMT) recommends the adoption of Alternative 3 as the preferred alternative for conducting fishing operations under the proposed shallow set longline EFP. The HMSMT would like to emphasize that one of the primary objectives of the EFP would be to test the economic viability of using shallow set longline gear within the proposed action area and that a single vessel represents that most risk adverse option in regards to potential protected species interactions.

Alternative 3 incorporates all of the terms and conditions imposed in alternative 2 including, among other things:

- No fishing within 30 miles of the coastline
- No fishing within the Southern California Bight
- Compliance with existing highly migratory species fishery management plan protected species conservation measures
- Mandatory 100% observer coverage
- A cap on total fishing effort
- Fishing conducted between September and December
- Use of 18/0 circle hooks with 10° offset
- Use of mackerel bait and light sticks.

Alternative 3 incorporates additional conservation and bycatch mitigation measures including, among other things:

- Imposition of caps on interactions with striped marlin and protected species bycatch (marine mammals, sea turtles, and seabirds)
- Use of NMFS-approved de-hooking device to maximize shark bycatch survivability
- Setting gear at night

In regards to the imposition of caps, the draft environmental assessment (EA) (Agenda Item J.3.a, Attachment 1) includes an exposure analysis to determine which sea turtle and marine mammal species are most likely to be exposed and affected by the proposed EFP. The analysis was done utilizing observer data from the Hawaii-based longline fishery, the drift gillnet (DGN) fishery, other shallow-set longline fisheries, and known information about the distribution and abundance of species in the proposed action area.

Based upon the analysis, leatherback sea turtles are the species of turtle most likely to be affected by this proposed action. The HMSMT recommends that takes of leatherback sea turtles be capped at the level established in the section 7 consultation that will occur if this alternative is chosen. This approach is consistent with methods used to re-open the Hawaii based shallow-set longline fishery in 2004 with leatherback and loggerhead take caps. This approach would also provide a means to develop additional measures or recommendations during the section 7 consultation that may further reduce the likelihood of turtle takes.

Six species of marine mammals are considered most likely to be affected by the proposed action; they are California sea lion, northern elephant seal, short-beaked common dolphin, Risso's dolphin, northern right whale dolphin, and harbor seal. Please note, there is an error in Table 4-3 in the draft EA, which provides the potential biological removals (PBRs) and average annual mortality for these six species; the PBR for California sea lions should be 8,333 not 8.333. It is recommended that marine mammal caps be applied only to species that may be in the proposed action area and that have low PBR levels. The recommended species caps are 1 short-finned pilot whale, 1 sperm whale, and 1 humpback whale (with PBRs of 1.2, 1.8, and 2.3, respectively). This recommendation is made in consideration of the low PBR for these species and not based upon likelihood of encounters. It is considered very unlikely, as described within the exposure analysis of the EA, that any of these species are likely to be affected by the proposed action. If the Council decides to recommend additional caps for other marine mammals that may be encountered, the HMSMT recommends that the best available science be incorporated into setting the caps with reference to current PBR estimates.

Given the anticipated low encounter rates for seabirds as a result of night-time setting and other gear and operational mitigation measures, the HMSMT does not recommend the imposition of caps for any seabirds at this time. However, a section 7 consultation may be required with the USFWS to analyze the potential effects of this action on ESA listed sea birds. It is suggested that any incidental take statement issued as a result of consultation be incorporated into the terms and conditions of the EFP as seabird caps.

For striped marlin, a cap range of 7-12 fish is recommended. The upper bound of this range (12) was derived by taking five percent of the average annual catch of 248 striped marlin for the period 1997-2006. These catch estimates were summarized from private logbooks submitted by members of the three major Billfish Clubs active in the southern California area and from California commercial passenger fishing vessel (CPFV) logbook data. Given the lack of reliable private boat catch estimates for billfish from the existing state recreational sampling program, the Billfish Club-CPFV dataset provides the best available approximation of catch for striped marlin. The lower bound of this range (7) is an estimate submitted by members of the HMSAS in consultation with the applicant based upon anticipated areas to be fished and potential encounter rates.

A study of post-release survivability in longline-caught white marlin from the Atlantic, a species similar in biological characteristics to the striped marlin, estimated a range of post-release mortality of 10-37 percent depending upon whether non-reporting satellite tags were considered mortalities (37 percent) or removed from the analysis (10 percent).

A study of post-release survivability of recreationally caught striped marlin off the coast of Baja California, estimated a range of post-release mortality of 16-37 percent depending on inclusion of non-reporting tags in the analysis. The management team recommends utilizing a more conservative 40 percent post-release mortality rate to estimate anticipated striped marlin mortality under this EFP which would equate to a maximum of 5 striped marlin mortalities if the cap were reached.

The HMSMT does not recommend a striped marlin cap based on mortality given the subjectivity of qualitatively assessing post-capture release condition by at-sea observers. Pending the

availability of funding, the HMSMT recommends the tagging of a select number of striped marlin with pop-up satellite tags to quantitatively assess post-capture survivability. The HMSMT further recommends the development and use of a post-release condition factor scorecard for striped marlin so that at-sea observer records can be collected for future assessment and management use.

In regards to the anticipated capture of blue sharks, the HMSMT noted the increased blue shark survivability when using a NMFS approved de-hooking device for longline captured animals in the Hawaii shallow-set longline fishery. A post-release survival study for blue sharks captured on pelagic longline research gear in Hawaii estimated a 95-100 percent survival rate for those sharks landed and released in healthy condition. In addition, the applicant has an economic incentive to avoid blue sharks whenever possible due to the reduced fishing efficiency that would result from the damage and/or loss of baited hooks.

PFMC
04/05/07

Agenda Item J.2.c
Supplemental SSC Report
April 2007

SCIENTIFIC AND STATISTICAL COMMITTEE REPORT ON EXEMPTED FISHING PERMIT (EFP) FOR LONGLINE FISHING IN THE WEST COAST EXCLUSIVE ECONOMIC ZONE

The Scientific and Statistical Committee (SSC) reviewed the Draft EA regarding issuance of an EFP to fish with longline gear in the West Coast Exclusive Economic Zone (EEZ).

The SSC notes that the proposed EFP pertains to operation of a single vessel which would be fishing with longline gear in an area without corresponding drift gillnet fishing for comparison of finfish and prohibited species bycatch between the two gear types. Few constraints are imposed to limit where the vessel will operate, and no experimental design is proposed to test the hypothesis that longline gear would offer an improvement in bycatch rates over drift gillnet fishing gear. Average bycatch values are inadequate to evaluate bycatch impacts. Bycatch events are typically rare and spatially correlated. As such, the problem is one of estimating the statistical probability of a rare event (i.e. a longline set with large bycatch). Data collected from a single vessel operating under an EFP would not be adequate for this purpose.

The SSC did not find adequate information in the Environmental Assessment to evaluate the biological risks of the proposed EFP. For example, the values presented in Table 4 (page 80) are projected bycatch rates based on average bycatch information from Hawaii. Bycatch rates for Hawaii cannot be assumed to be representative of the area to be evaluated under the EFP. The most feasible way to constrain the biological risks of fishing with longline gear in the West Coast EEZ would be to operate a fishery with full observer coverage and to impose hard bycatch caps.

PFMC
04/04/07

Agenda Item J.2.d
Supplemental Public Comment 2
April 2007

THE BILLFISH FOUNDATION

CONSERVATION THROUGH RESEARCH, EDUCATION AND ADVOCACY

2161 E. Commercial Blvd., 2nd Floor • Fort Lauderdale, Florida 33308
177 Riverside Ave., Suite F, #1034 • Newport Beach, California 92663
(954) 938-0150 • (800) 438-8247 • Fax (954) 938-5311 • www.billfish.org

Dr. Donald McIsaac, Executive Director
Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101
Portland, OR 97220-1384

Dear Dr. McIssac:

I am writing to take the opportunity to express the views of The Billfish Foundation (TBF) on the Council's consideration of a requested exempted fishing permit (EFP) to allow a single vessel to fish with prohibited longline gear in the waters under the jurisdiction of the Pacific Fishery Management Council. TBF has been an active and supportive participant in the development and implementation of the Council's Highly Migratory Species (HMS) Plan. We opposed allowing longline gear into the waters of our Pacific Coast when the Plan was proposed, citing the fact that in addition to the well documented damage the gear inflicts on sea turtles, the status of finfish species primarily expected to be targeted by this gear – swordfish, bluefin tuna, yellowfin tuna and bigeye tuna – was either unknown or, in the view of our scientific staff, approaching an overfished condition. The Council took the appropriate precautionary action and did not allow this gear.

TBF continues to oppose the use of longline gear and we cannot support the EFP request. It is not a request for actual research to look at alternative fishing methods and means. Having been modified and altered a number of times over the last several years, it remains merely a request to conduct exploratory fishing with gear prohibited by the council's HMS Plan. Furthermore, at present two species that have been at one time or another listed as potential target species for this EFP – yellowfin and bigeye tuna – have been classified as overfished. Albacore are, at best, approaching that condition and the Inter-American Tropical Tuna Commission (IATTC) has asked that no new effort be focused on this fishery in the eastern Pacific. We note that the Council is presently working in conjunction with the National Marine Fisheries Service (NMFS) and the IATTC to develop means to reduce fishing mortality on yellowfin and bigeye and cap effort on albacore. Allowing exploratory fishing with longlines seems not to be consistent with good management in this case.

TBF appreciates the fact that the Management Team has devoted time and effort to crafting alternatives for the council's consideration. We certainly support the exclusion

of any EFP permitted longlines from the Southern California Bight where bycatch of striped marlin and conflicts with the well developed recreational fishery would surely have been acute. Again, TBF supports Alternative 1: the status quo non-approval option. However, if the Council deems it necessary to request approval of this EFP we urge you to adopt Alternative 3 and let the gear focus on swordfish. Further, we request that the Council require only non-offset 18/0 or larger circle hooks. Recent research has demonstrated that offsets of greater than a few degrees dramatically increase gut-hooking of finfish. Given this new information, the NMFS has recently required that only non-offset circle hooks be used in Atlantic billfish tournaments. Although the prohibition of use in the southern California Bight may eliminate most potential interactions of the gear with striped marlin, macro scale climate events have been shown to change the distribution of this species, increasing their occurrence northward up the coast. For this reason we believe that the cap on any take of striped marlin included in Alternative 3 would be a necessary condition of any approval and this cap should be set at the level of a single observed mortality.

Thank you for the opportunity to comment and participate in the management of these valuable natural resources. TBF's Chief Scientist, Dr. Russell Nelson, will be at the April Council meeting and available to discuss this issue and answer any questions.

Sincerely yours,

Ellen M. Peel

Ellen Peel, LLD
President

Cc: Dr. Bill Hogarth
Dr. Robin Allen

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FAX (916) 319-2106

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SAN RAFAEL, CA 94903
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FAX (415) 479-2123

Assembly
California Legislature

JARED HUFFMAN
ASSEMBLYMEMBER, SIXTH DISTRICT

COMMITTEES
CHAIR, ENVIRONMENTAL SAFETY AND TOXIC MATERIALS
APPROPRIATIONS
UTILITIES AND COMMERCE
WATER, PARKS AND WILDLIFE

March 15, 2007

Dr. William Hogarth, Director
NOAA Fisheries Service
1315 East West Highway, SSMC3
Silver Spring, MD 20910

Mr. Donald McIsaac, Executive Director
Mr. Donald K. Hansen, Chair
Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 200
Portland, OR 97220

Dear Dr. Hogarth, Mr. McIsaac, Mr. Hansen, and members of the Council:

As the state Assemblymember for the 6th District in California, my district includes hundreds of miles of coastline. It is my duty to safeguard and protect the natural beauty of the Northern California coastline and the creatures that live there. I'm writing to you today because I'm concerned about the proposed exempted fishing permits (EFP) to expand the swordfish/thresher shark drift-gillnet fishery into current time/area closures and to develop a pelagic swordfish longline fishery within the Exclusive Economic Zone (EEZ). I urge you to deny both EFPs.

There is ample evidence that issuing these EFPs could have a significant impact on the endangered leatherback sea turtle and other marine wildlife. As you know, the California coast has been closed to swordfish pelagic longlining for 30 years and portions of the California and Oregon coastline have been closed to drift-gillnet fishing since 2001 to protect leatherback sea turtles which seasonally inhabit the waters off our coast. The Pacific leatherback sea turtle population has already plummeted from 91,000 in 1980 to currently fewer than 2,300 annual nesting females. If you allow pelagic longline sword fishing and drift-gillnet fishing back into these protected areas, it will place the critically endangered leatherback at greater risk of extinction, and place other protected and endangered marine species at risk.

Before we allow an animal species to be lost forever, I hope you'll continue to enforce the important conservation measures that have been hard-fought and are effective in protecting highly vulnerable species. The existing closures comply with domestic and international conservation mandates and are consistent with the best available scientific information. Both drift-gillnet fishing and longline sword fishing are highly indiscriminate fishing methods that have devastating effects on the marine environment. For this reason, the United Nations banned drift-gillnet fishing on the high seas in 1991, and California has had a ban on swordfish pelagic longlining for 30 years. We should do nothing less than honor these protections.

Please do your part to protect our coastline and deny these EFPs. Thank you for your consideration, and please do not hesitate to contact me with any questions.

Sincerely,

Jared Huffman, Assemblymember
6th District

JH/dmg

Subject: [Fwd: Stop the give away] No to Longliners!
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:30:16 -0700
To: Mike Burner <Mike.Burner@noaa.gov>

Subject: Stop the give away
From: cd peevey <cdpeevey@cablespeed.com>
Date: Sat, 24 Mar 2007 11:12:29 -0700
To: pfmc.comments@noaa.gov

No to longliners

Why on earth do keep on finding new ways to depelet whats left of fisheres ?

Stop the give away	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: [Fwd: Reference Agenda Item J.2 Exempted Fishing Permit (EFP) for Longline Fishing in the West Coast Exclusive Economic Zone in the subject heading of your email.]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Thu, 22 Mar 2007 10:46:06 -0700
To: Mike Burner <Mike.Burner@noaa.gov>
CC: Kit Dahl <Kit.Dahl@noaa.gov>

Subject: Reference Agenda Item J.2 Exempted Fishing Permit (EFP) for Longline Fishing in the West Coast Exclusive Economic Zone in the subject heading of your email.
From: bhallman@ransome.com
Date: Thu, 22 Mar 2007 12:15:38 -0500
To: pfmc.comments@noaa.gov

I have witnessed longlining in the Northeast, Southeast and in central America and in all of my years of fishing I have wondered how a responsible Government could allow such indiscriminate slaughter. Longlining is contrary to our modern environmental concerns and we must set the example by not allowing longlining in the US to encourage the world to conserve and harvest the sea in a well managed manner.
William H Hallman Delran NJ USA.

Reference Agenda Item J.2 Exempted Fishing Permit (EFP) for Longline Fishing in the West Coast Exclusive Economic Zone in the subject heading of your email.	**Content-Ty** **Content-En**

Subject: [Fwd: Reference Agenda Item J.2 Exempted Fishing Permit (EFP) for Longline Fishing in the West Coast Exclusive Economic Zone]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:32:21 -0700
To: Mike Burner <Mike.Burner@noaa.gov>

Subject: Reference Agenda Item J.2 Exempted Fishing Permit (EFP) for Longline Fishing in the West Coast Exclusive Economic Zone
From: Carlos Ramírez <cramirez@evertecinc.com>
Date: Mon, 26 Mar 2007 11:08:25 -0400
To: pfmc.comments@noaa.gov

This is a very bad idea. Longliners should be band from all US territorial waters.

Reference Agenda Item J.2 Exempted Fishing Permit (EFP) for Longline Fishing in the West Coast Exclusive Economic Zone	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: [Fwd: Reference Agenda Item J.2 Exempted Fishing Permit (EFP) for Longline Fishing in the West Coast Exclusive Economic Zone]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Thu, 22 Mar 2007 11:49:02 -0700
To: Mike Burner <Mike.Burner@noaa.gov>
CC: Kit Dahl <Kit.Dahl@noaa.gov>

Subject: Reference Agenda Item J.2 Exempted Fishing Permit (EFP) for Longline Fishing in the West Coast Exclusive Economic Zone
From: Charles Brasch III <charlesbrasch@braschdillon.com>
Date: Thu, 22 Mar 2007 14:37:24 -0400
To: pfmc.comments@noaa.gov

Dear Sir:

I wrote the same thing concerning longline fishing off the eastern coast. To keep it short:

PLEASE NO!!

Please don't add anymore longline fishing anywhere in the country!! Please!! Give the fish a chance.

Charles Brasch III
Brasch-Dillon & Associates, Inc.
Phone: 404-249-9633
Direct Fax: 404-835-0376
www.braschdillon.com

Reference Agenda Item J.2 Exempted Fishing Permit (EFP) for Longline Fishing in the West Coast Exclusive Economic Zone	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: [Fwd: Possible New Longline Permit in Norther Pacific Waters]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:26:36 -0700
To: Mike Burner <Mike.Burner@noaa.gov>
CC: Kit Dahl <Kit.Dahl@noaa.gov>

Subject: Possible New Longline Permit in Norther Pacific Waters
From: John Childs <jchilds9782@msn.com>
Date: Fri, 23 Mar 2007 16:50:35 -0700
To: pfmc.comments@noaa.gov

To Whom It May Concern:

I oppose the possibility of approving a permit for a commercial vessel to use longline gear in the Northern California, Oregon and Washington Offshore waters. The species that are the intended targets are currently considered over fished, and the added take isn't accomplishing anything.

Further, recreational limits are being proposed, but yet the recreational fisherman provide more financial support to the Northwest than any of the commercial fisheries, yet we take less than 1% of the overall harvest.

In my opinion it is faulty logic to consider a new commercial fisheries in our waters.

Thanks for you time,
John Childs

Possible New Longline Permit in Norther Pacific Waters	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: [Fwd: Please decline the long line application permit]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:32:01 -0700
To: Mike.Burner@noaa.gov

Subject: Please decline the long line application permit
From: TERRY ROELKE <KEVINRO4@MSN.COM>
Date: Sun, 25 Mar 2007 18:45:44 -0700
To: pfmc.comments@noaa.gov

I am writing to express my concern and opposition of adding additional fishing pressure off of the Oregon California and Washington coast with the addition of permitting the long line applications filed with your agency.

The thirty mile boundary does not adequately protect native species and species that are showing the beginnings of decline in population. Additionally the areas specifically off the Oregon Coast are limited to the pursuit of sport anglers for Pacific Halibut. One of the premier fishing areas out of Newport known as the Chicken Ranch is out side the thirty mile area.

Granted the Long lines are not targeting bottom fish However do to the limited structure for these fish and the oppurtunity for the sportsman a long line could compromise the access to this area.

I have personally experience negative impacts to access by this method of fishing from Cod Lines. Do to the length and drift these can compromise an entire structure.

Our Halibut are not found at all locations.

Please deny the application and future applications.

Kevin Bennett
Roseburg, Oregon

Please decline the long line application permit	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: [Fwd: Pacific EFP]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:22:26 -0700
To: Mike Burner <Mike.Burner@noaa.gov>
CC: Kit Dahl <Kit.Dahl@noaa.gov>

Subject: Pacific EFP
From: mountainequip@comcast.net
Date: Fri, 23 Mar 2007 11:10:21 -0700
To: pfmc.comments@noaa.gov

Dr. Donald McIsaac, Executive Director
Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101
Portland, OR 97220-1384

Dear Dr. McIssac:

I am writing to take the opportunity to express the views of The Billfish Foundation (TBF) on the Council's consideration of a requested exempted fishing permit (EFP) to allow a single vessel to fish with prohibited longline gear in the waters under the jurisdiction of the Pacific Fishery Management Council. TBF has been an active and supportive participant in the development and implementation of the Council's Highly Migratory Species (HMS) Plan. We opposed allowing longline gear into the waters of our Pacific Coast when the Plan was proposed, citing the fact that in addition to the well documented damage the gear inflicts on sea turtles, the status of finfish species primarily expected to be targeted by this gear – swordfish, bluefin tuna, yellowfin tuna and bigeye tuna – was either unknown or, in the view of our scientific staff, approaching an overfished condition. The Council took the appropriate precautionary action and did not allow this gear.

TBF continues to oppose the use of longline gear and we cannot support the EFP request. It is not a request for actual research to look at alternative fishing methods and means. Having been modified and altered a number of times over the last several years, it remains merely a request to conduct exploratory fishing with gear prohibited by the council's HMS Plan. Furthermore, at present two species that have been at one time or another listed as potential target species for this EFP – yellowfin and bigeye tuna – have been classified as overfished. Albacore are, at best, approaching that condition and the Inter-American Tropical Tuna Commission (IATTC) has asked that no new effort be focused on this fishery in the eastern Pacific. We note that the Council is presently working in conjunction with the National Marine Fisheries Service (NMFS) and the IATTC to develop means to reduce fishing mortality on yellowfin and bigeye and cap effort on albacore. Allowing exploratory fishing with longlines seems not to be consistent with good management in this case.

TBF appreciates the fact that the Management Team has devoted time and effort to crafting alternatives for the council's consideration. We certainly support the exclusion of any EFP permitted longlines from the Southern California Bight where bycatch of striped marlin and conflicts with the well developed recreational fishery would surely have been acute. Again, TBF supports Alternative 1: the status quo non-approval option. However, if the Council deems it necessary to request approval of this EFP we urge you to adopt Alternative 3 and let the gear focus on swordfish. Further, we request that the Council require only non-offset 18/0 or larger circle hooks. Recent research has demonstrated that offsets of greater than a few degrees dramatically increase gut-hooking of finfish. Given this new information, the NMFS has recently required that only non-offset circle hooks be used in Atlantic billfish tournaments. Although the prohibition of use in the southern California Bight may eliminate most potential interactions of the gear with striped marlin, macro scale climate events have been shown to change the distribution of this species, increasing their occurrence northward up the coast. For this reason we believe that the cap on any take of striped marlin included in Alternative 3 would be a necessary condition of any approval and this cap should be set at the level of a single observed mortality.

Thank you for the opportunity to comment and participate in the management of these valuable natural resources.

TBF's Chief Scientist, Dr. Russell Nelson, will be at the April Council meeting and available to discuss this issue and answer any questions.

Sincerely yours,

Ellen Peel, LLD
President

Cc: Dr. Bill Hogarth
Dr. Robin Allen

Pacific EFP	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: [Fwd: No long Lines in Our Wates]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:31:19 -0700
To: Mike Burner <Mike.Burner@noaa.gov>

Subject: No long Lines in Our Wates
From: stefanie <baddogs3@centurytel.net>
Date: Sun, 25 Mar 2007 06:53:30 -0700
To: pfmc.comments@noaa.gov

Dr. Donald McIsaac, Executive Director

Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101
Portland, OR 97220-1384

Dear Sir,

I am writing to you to express my dismay that anyone would even consider allowing long lining off the west coast. As a sport and taxpayer I have grave concerns about this occurring. For the first time sportsfishers are being told they may have to be limited on albacore as the fish are on the verge of over fishing. If this is the case then why allow more indiscriminate harvests to occur? We all know that long lining incurs high numbers of by catch and will also impact the albacore population.In light of the need to conserve our precious resource please do not allow the long liners fish our waters. You have the ability to do the right thing please remember we are counting on you.

Sincerely,

Mike Richman

No long Lines in Our Wates	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: [Fwd: Longlining]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:39:23 -0700
To: Mike Burner <Mike.Burner@noaa.gov>

Subject: Longlining
From: Kenneth Charles Boman <BomanK@cwu.EDU>
Date: Sat, 24 Mar 2007 17:59:09 -0700
To: pfmc.comments@noaa.gov

Dr. Donald McIsaac, Executive Director

Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101
Portland, OR 97220-1384

Dear Sir,

I am writing to express my grave concerns regarding long-line fishing of the coast of Oregon and Washington. As you well know the numbers of pelagic fish have reached all time lows throughout the world because of commercial over fishing and long-liners have been at the forefront of this exploitation.

Long-line fishing is not selective and as a result countless marine animals/mammals are killed as by-catch. Turtles, birds, sharks, etc all die because of this deadly practice. Thousands of baited hooks in the water of our coast and thousands upon thousands of pounds of dead fish ready to export is not a responsible management policy of our resources. Opening the door to one will only invite more and our oceans can’t handle it.

As a sportsman and recreational fisherman I have to deal with shorter seasons, bag limits and gear restrictions all to support the lessening of restrictions on commercial fisherman.. Washington wants to put a limit on Albacore for the first time ever because they contend Albacore stocks are on the verge of over exploitation yet recreational fisherman comprise less than 10% of the take.

I implore you to reject the proposal to allow any increase of commercial pressure or long-line fishing off the coast of Washington and Oregon.

Sincerely,

Ken Boman

Longlining	**Content-Type:**	message/rfc822
	Content-Encoding:	7bit

Subject: [Fwd: Long-lining off Pacific Coast]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:31:47 -0700
To: Mike.Burner@noaa.gov

Subject: Long-lining off Pacific Coast
From: charles.e.barnes@comcast.net (Chuck Barnes)
Date: Sun, 25 Mar 2007 18:26:17 +0000
To: pfmc.comments@noaa.gov

Honorable Council Members:

The current idea for a new long-lining fishery effort of any kind off the pacific coast is ridiculous to me.
If this is not a bad idea then I give up.
Seems every time I turn around we have another move directed in the opposite direction for the good of our fish resources.
Ask the fish if this is the right thing to do for the future we need them to provide.
I hope we get a better grip, or a grip at all, soon..... on doing the right stuff.
It seems we always put maximum pressure to maximize risks and harvest when we should be doing precisely the opposite.....
The fish would give us an 'F-Minus'. We are perfecting doing the wrong things to the best of our ability.
But I guess that's all we can expect out of mankind.
That figures.....

Respectfully,
Chuck Barnes
1553 164th Ave. N.E. W-5
Bellevue Wa., 98008

Long-lining off Pacific Coast	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: [Fwd: Longlines]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:21:57 -0700
To: Mike Burner <Mike.Burner@noaa.gov>
CC: Kit Dahl <Kit.Dahl@noaa.gov>

Subject: Longlines
From: Matt Bridgewater <matt@gem-products.com>
Date: Fri, 23 Mar 2007 13:16:04 -0400
To: pfmc.comments@noaa.gov

The introduction of longline fishing into any region seriously damages the fishery and hurts the recreational marine business. I urge you to ban this method of fishing.
MB

Matthew Bridgewater
President
matt@gemlux.com

140 Industrial Loop
Orange Park, FL 32073
800.874.4506 Tel
904.269.5905 Fax

Visit us at: http://www.gemlux.com

Longlines	**Content-Type:**	message/rfc822
	Content-Encoding:	7bit

Subject: [Fwd: Longlines]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:27:42 -0700
To: Mike Burner <Mike.Burner@noaa.gov>

Subject: Longlines
From: FISHNG1@aol.com
Date: Sat, 24 Mar 2007 01:56:28 -0400 (EDT)
To: pfmc.comments@noaa.gov

Dr. Donald McIsaac, Executive Director
Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101
Portland, OR 97220-1384

Dear Dr. McIssac:

I am writing to take the opportunity to express the views of The Billfish Foundation (TBF) on the Council's consideration of a requested exempted fishing permit (EFP) to allow a single vessel to fish with prohibited longline gear in the waters under the jurisdiction of the Pacific Fishery Management Council. TBF has been an active and supportive participant in the development and implementation of the Council's Highly Migratory Species (HMS) Plan. I oppose allowing longline gear into the waters of our Pacific Coast when the Plan was proposed, citing the fact that in addition to the well documented damage the gear inflicts on sea turtles, the status of finfish species primarily expected to be targeted by this gear – swordfish, bluefin tuna, yellowfin tuna and bigeye tuna – was either unknown or, in the view of scientific staff, approaching an overfished condition.

Steve Ng
Concerned citizen
7816 61st Ave NW
Gig Harbor, Wa 98335
FishNg1@aol.com

Longlines	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: [Fwd: longliners]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:26:11 -0700
To: Mike Burner <Mike.Burner@noaa.gov>
CC: Kit Dahl <Kit.Dahl@noaa.gov>

Subject: longliners
From: DALE JULIE MARLOW <DAJURYNI_8@msn.com>
Date: Fri, 23 Mar 2007 16:04:18 -0700
To: pfmc.comments@noaa.gov

we have enough problems with the gill nets we don't need any more thieves of the river or ocean?

longliners	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: [Fwd: Long-liners off the Washington State Coast]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:39:51 -0700
To: Mike Burner <Mike.Burner@noaa.gov>

Subject: Long-liners off the Washington State Coast
From: Jeff Alexander <gonzomon@peoplepc.com>
Date: Sat, 24 Mar 2007 19:12:58 -0800
To: pfmc.comments@noaa.gov

I am writing to express my grave concerns regarding long-line fishing of the coast of Oregon and Washington. As you well know, the numbers of pelagic fish have reached all time lows throughout the world because of commercial over fishing and long-liners have been at the forefront of this exploitation.

Long-line fishing is not selective and as a result countless marine animals/mammals are killed as by-catch. Turtles, birds, sharks, etc... all die because of this deadly practice. Thousands of baited hooks in the water off our coast and thousands upon thousands of pounds of dead fish ready to export is not a responsible management policy of our resources. Opening the door to one will only invite more and our oceans can't handle it.

As a sportsman and recreational fisherman I have to deal with shorter seasons, bag limits and gear restrictions all to support the lessening of restrictions on commercial fisherman.. Washington wants to put a limit on Albacore for the first time ever because they contend Albacore stocks are on the verge of over exploitation yet recreational fisherman comprise less than 10% of the take.

I implore you to reject the proposal to allow any increase of commercial pressure or long-line fishing off the coast of Washington and Oregon.

Sincerely,

Jeff Alexander

408 N. 13th St.

Selah, WA 98942

Long-liners off the Washington State Coast	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: [Fwd: Longline Permit]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:28:21 -0700
To: Mike Burner <Mike.Burner@noaa.gov>

Subject: Longline Permit
From: Jeff Bott <jbott@genesishouse.com>
Date: Sat, 24 Mar 2007 07:47:23 -0700
To: pfmc.comments@noaa.gov

To Whom It May Concern,

I'm writing to express my opposition to the proposed EFP to allow longline fishing for several species of tuna and swordfish in our Pacific Coastal waters.

I believe these fish are already being overfished. Charts and studies show their numbers in decline. So if anything we need to be moving to more conservative management rather than putting more pressure on their numbers.

Thank You,
Jeff Bott
5514 70th DR SE
Snohomish, WA 98290

Longline Permit	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: [Fwd: Longline offf Oregon and Washington]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:27:26 -0700
To: Mike Burner <Mike.Burner@noaa.gov>

Subject: Longline offf Oregon and Washington
From: mikelw@comcast.net
Date: Sat, 24 Mar 2007 04:40:29 +0000
To: pfmc.comments@noaa.gov

```
I can't believe this would even be an option to be considered.
It is claimed this maybe a fisheries that is already over fished.
And yet it might be thought as being something to be considered?\
Please don't let this happen at any price. This is our home you are selling.
don't let this happen.
I will not vote for anyone with this kind of thought pattern.Thank you and I do VOTE.
Mike Weber.
```

Longline offf Oregon and Washington	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: [Fwd: Longline Gear]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:32:41 -0700
To: Mike Burner <Mike.Burner@noaa.gov>

Subject: Longline Gear
From: "Bob...Kim Giles" <bk_giles98205@yahoo.com>
Date: Sat, 24 Mar 2007 23:40:11 -0700 (PDT)
To: pfmc.comments@noaa.gov

Please do not allow longline gear to be used in the coastal waters of the northwest, for the sake of our fisheries, for the sake of my fishing rights, and for the sake of my children's and children's children's right to fish our waters. Please do the right thing!

Bob Giles
11832 28th Street SE
Everett, WA 98205

Longline Gear	**Content-Type:**	message/rfc822
	Content-Encoding:	7bit

Subject: [Fwd: Longline fishing]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:26:50 -0700
To: Mike Burner <Mike.Burner@noaa.gov>

Subject: Longline fishing
From: Sharon Schrenk <sschrenk@centurytel.net>
Date: Fri, 23 Mar 2007 17:32:55 -0700
To: pfmc.comments@noaa.gov

I agree with The Billfish Foundation therefore I ask the Council to please NOT allow Longline fishing along the Northern California, Oregon and Washington Coasts.

Thank-you for your careful consideration of this matter.

Sincerely,

Sharon A. Schrenk

--

Longline fishing	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: [Fwd: Longline approval]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:19:40 -0700
To: Mike burner <Mike.Burner@noaa.gov>, Kit Dahl <Kit.Dahl@noaa.gov>

Subject: Longline approval
From: Dickrep@aol.com
Date: Thu, 22 Mar 2007 20:06:59 -0400 (EDT)
To: pfmc.comments@noaa.gov

Dear Sirs, please do not approve the use of long lines for even a single vessel in the Pacific area. I've read about this subject thoroughly and have seen the visible evidence of both the destruction of the dorado recreational fishing in the Sea of Cortez as well as the danger of longlines for recreational and other vessels. In addition, the marlin fishery off the Pacific Coast has declined dramatically in the recent decade and we need to support "sustainable fishing" only.

Richard A. Replogle, Tucson, AZ.

Longline approval	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: [Fwd: Long liners]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:31:33 -0700
To: Mike Burner <Mike.Burner@noaa.gov>

Subject: Long liners
From: "Anderson,Ronald G." <ANDERSRG@airproducts.com>
Date: Sun, 25 Mar 2007 13:13:54 -0400
To: pfmc.comments@noaa.gov

To All,

Please, Don't let the Longliners in our Water. It's not going to do anything but further impact our fisheries declining population, resulting in lower numbers, hurting everybody concerned.

Thank You, Ronald G. Anderson

Long liners	**Content-Type:**	message/rfc822
	Content-Encoding:	7bit

Subject: [Fwd: Long liners in the Pacific Ocean]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:27:15 -0700
To: Mike Burner <Mike.Burner@noaa.gov>

Subject: Long liners in the Pacific Ocean
From: Robin Kaup <nlrrefrigeration@yahoo.com>
Date: Fri, 23 Mar 2007 19:06:09 -0700 (PDT)
To: pfmc.comments@noaa.gov

At a time when the palegic species are declining off of the Pacific coast, I think that it would be irresponsible to provide a permit to deplete these species beyond the level they are now. If they are talking about cut backs on the amount of harvest of these species why would you even think about isueing a vessle a license to begin overharvesting these fish.

Please protect our fish populations by not issueing the permit.

Thanks
Robin Kaup
Silverton Oregon
Home Port, New Port Oregon
NLRrefrigeration@yahoo.com

Long liners in the Pacific Ocean	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: [Fwd: long line]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:22:51 -0700
To: Mike Burner <Mike.Burner@noaa.gov>
CC: Kit Dahl <Kit.Dahl@noaa.gov>

Subject: long line
From: Marlin Gohn <gohnm@microdental.com>
Date: Fri, 23 Mar 2007 11:57:38 -0700
To: pfmc.comments@noaa.gov

As a pacific coast fisherman that does fish for albacore in our northern California waters I do not think that we should have long lines in our waters at all, for to many years we have aloud our waters to be over fished it's time to stop.
Thank You Marlin Gohn

long line	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: [Fwd: LONG LINE FISHERY (proposed)]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:27:03 -0700
To: Mike Burner <Mike.Burner@noaa.gov>

Subject: LONG LINE FISHERY (proposed)
From: Fennerty <roadsend@seasurf.net>
Date: Fri, 23 Mar 2007 17:06:34 -0800
To: pfmc.comments@noaa.gov

```
I do not support additional commercial fishing pressure off the Pacific Coast. Too many of
these  species are
at or near the point of being overfished.

Gus Fennerty
Astoria, OR
```

LONG LINE FISHERY (proposed)	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: [Fwd: Keep Longliners out]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:29:30 -0700
To: Mike Burner <Mike.Burner@noaa.gov>

Subject: Keep Longliners out
From: kenny boman <chukar14@yahoo.com>
Date: Sat, 24 Mar 2007 10:01:41 -0700 (PDT)
To: pfmc.comments@noaa.gov

We opposed allowing longline gear into the waters of our Pacific Coast when the Plan was proposed, citing the fact that in addition to the well documented damage the gear inflicts on sea turtles, the status of finfish species primarily expected to be targeted by this gear – swordfish, bluefin tuna, yellowfin tuna and bigeye tuna – was either unknown or, in the view of our scientific staff, approaching an overfished condition. Thereis no need to open up our waters to this type of fishery. This will only result in increasing the rate of over harvest for the abov species.

Keep Longliners out	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: [Fwd: J.2 Exempted Fishing Permit (EFP) for Longline Fishing in the West Coast Exclusive Economic Zone]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:23:37 -0700
To: Mike Burner <Mike.Burner@noaa.gov>
CC: Kit Dahl <Kit.Dahl@noaa.gov>

Subject: J.2 Exempted Fishing Permit (EFP) for Longline Fishing in the West Coast Exclusive Economic Zone
From: Raymond Zamora <RZamora@BSFLLP.com>
Date: Fri, 23 Mar 2007 15:36:24 -0400
To: pfmc.comments@noaa.gov

I oppose the Exempted Fishing Permit for long line fishing in the West coast.

Raymond Zamora, CP
Certified Paralegal
Boies, Schiller & Flexner LLP
305.357.8465 Office
305.357.8567 Fax
http://www.bsfllp.com

J.2 Exempted Fishing Permit (EFP) for Longline Fishing in the West Coast Exclusive Economic Zone	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: [Fwd: Fwd: long lining]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:24:48 -0700
To: Mike Burner <Mike.Burner@noaa.gov>
CC: Kit Dahl <Kit.Dahl@noaa.gov>

Subject: Fwd: long lining
From: michael preston <pceco@comcast.net>
Date: Fri, 23 Mar 2007 13:26:15 -0700
To: pfmc.comments@noaa.gov

THIS THE SAME MESSAGE I SENT IN REGARDS TO THE FEASCO IN HAWAII LAST DECEMBER . MESSAGE HASN'T CHANGED , NEVER WILL , GET IT ! SORRY THE PICTURE IS UPSIDE DOWN JUST PICK UP YOUR COMPUTER AND TURN IT OVER . EVER WONDER WHAT WE HUMANS LOOK LIKE TO A FISH WHEN HE JUMPS UPSIDE-DOWN ?

Begin forwarded message:

> From: michael preston <pceco@comcast.net>
> Date: December 16, 2006 3:01:27 PM PST
> To: info.wpcouncil@noaa.gov
> Subject: Fwd: long lining
>
> THIS BIG BOY WAS RELEASED AND WILL LIVE TO FIGHT AGAIN , AND AGAIN , AND AGAIN, AND AGAIN. EVERY TIME HE DOES SOMEBODY GETS A PAYCHECK ! IT WOULD BE A CRIME FOR HER TO END UP AS ''BY-CATCH'' AND WASTED !
>
> Begin forwarded message:
>
> > From: michael preston <pceco@comcast.net>
> > Date: December 16, 2006 2:46:30 PM PST
> > To: info.wpcouncil@noaa.gov
> > Subject: long lining
> >
> > CAN'T THE FISH HAVE A LITTLE PART OF THE VAST OCEAN ? THE POPULATION OF THE PLANET IS 6.5 BILLION SOULS . WITH TODAYS TECHNOLOGY WE SHOULD NOT CALL IT FISHING WE SHOULD CALL IT HARVESTING , WE CAN AND WILL CATCH THEM ALL TO TRY AND FEED THE PLANET WITH A DEPLETABLE RESOURCE . THE ONLY REASON THERE IS ANY MARLIN LEFT ON THE PLANET IS BECAUSE THEY TASTE LIKE DUNG AND THE ORIENTALS DONT LIKE THEM. I AM A OLD GUY WHO HAS FISHED ALL OVER THE PLANET FOR BILL FISH , I WITNESSED FIRSTHAND WHAT HAPPENED TO THE FISHERY IN THE SEA OF CORTEZ YEARS AGO WHEN IT WAS LONG LINED , IT WAS DECIMATED OVERNIGHT AND EVEN TO THIS DAY HAS NOT RECOVERED . I WOULD SAY THE AUSIES GOT IT RIGHT , I FISH THERE A LOT AND NEW ZEALAND ALSO . PROTECT THE RESOURCE AND IT WILL LAST FOREVER IS THEIR PHILOSOPHY AND IT LEAVES PLENTY OF ROOM FOR THE COMMERCIAL GUYS. IT WOULD BE WISE TO LISTEN VERY CAREFULLY TO THE HAWAIIAN'S . THIS IS A POLITICAL FIGHT BETWEEN GOOD SENSE AND SHORT TERM CORPORATE PROFITS .
> > A FISHERY AREA THIS SMALL CAN BE FISHED OUT LONG LINING IN A VERY SHORT PERIOD OF TIME AND MAY NOT EVER RECOVER.THE ''BY-CATCH'' WILL KILL THE SPORT-FISHING INDUSTRY . IT WILL TRASH THE LOCAL ECONOMY FOREVER ALSO.
> > ANOTHER FISHERY I HAVE SEEN DESTROYED FIRST HAND IS THE COAST OF CALIFORNIA WHERE I LIVE . OF COURSE ITS ALL THE FAULT OF THE SPORT FISHERMAN IF YOU LISTEN TO THE POLITICIANS WHO HAVE BEEN BANKROLLED BY BIG BUSINESS .
> > IF OUR POLITICIANS ALLOW THIS TO HAPPEN THEY ARE ONLY HELPING THE FORIGN FISHING COMPANY'S , NOT US U. S. TAXPAYERS. THANK YOU FOR THIS OPPORTUNITY TO BE HEARD ALL THE BEST ''MARLIN MIKE'' PRESTON

Fwd: long lining	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Scan0008_0008.jpg	**Content-Type:** image/jpeg **Content-Encoding:** base64

Subject: [Fwd: EPF - Longline - I Do Not Support Approval]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:29:49 -0700
To: Mike burner <Mike.Burner@noaa.gov>

Subject: EPF - Longline - I Do Not Support Approval
From: Trish and Jim Davis <jimtrish247@yahoo.com>
Date: Sat, 24 Mar 2007 10:50:30 -0700 (PDT)
To: pfmc.comments@noaa.gov

Dear Dr McIsaac:

I support the enclosed letter 100%. Longlines in any form are destructive and not selective and contribute to decline of our stocks. Please consider my input and follow-up when a decision has been made.

James B Davis
27203 7th PL S
DesMoines, WA 98198
253-946-0181

Dr. Donald McIsaac, Executive Director
Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101
Portland, OR 97220-1384

Dear Dr. McIssac:

I am writing to take the opportunity to express the views of The Billfish Foundation (TBF) on the Council's consideration of a requested exempted fishing permit (EFP) to allow a single vessel to fish with prohibited longline gear in the waters under the jurisdiction of the Pacific Fishery Management Council. TBF has been an active and supportive participant in the development and implementation of the Council's Highly Migratory Species (HMS) Plan. We opposed allowing longline gear into the waters of our Pacific Coast when the Plan was proposed, citing the fact that in addition to the well documented damage the gear inflicts on sea turtles, the status of finfish species primarily expected to be targeted by this gear – swordfish, bluefin tuna, yellowfin tuna and bigeye tuna – was either unknown or, in the view of our scientific staff, approaching an overfished condition. The Council took the appropriate precautionary action and did not allow this gear.

TBF continues to oppose the use of longline gear and we cannot support the EFP request. It is not a request for actual research to look at alternative fishing methods and means. Having been modified and altered a number of times over the last several years, it remains merely a request to conduct exploratory fishing with gear prohibited by the council's HMS Plan. Furthermore, at present two species that have been at one time or another listed as potential target species for this EFP – yellowfin and bigeye tuna – have been classified as overfished. Albacore are, at best, approaching that condition and the Inter-American Tropical Tuna Commission (IATTC) has asked that no new effort be focused on this fishery in the eastern Pacific. We note that the Council is presently working in conjunction with the National Marine Fisheries Service (NMFS) and the IATTC to develop means to reduce fishing mortality on yellowfin and bigeye and cap effort on albacore. Allowing exploratory fishing with longlines seems not to be consistent with good management in this case.

TBF appreciates the fact that the Management Team has devoted time and effort to crafting alternatives for the council's consideration. We certainly support the exclusion of any EFP permitted longlines from the Southern California Bight where bycatch of striped marlin and conflicts with the well developed recreational fishery would

surely have been acute. Again, TBF supports Alternative 1: the status quo non-approval option. However, if the Council deems it necessary to request approval of this EFP we urge you to adopt Alternative 3 and let the gear focus on swordfish. Further, we request that the Council require only non-offset 18/0 or larger circle hooks. Recent research has demonstrated that offsets of greater than a few degrees dramatically increase gut-hooking of finfish. Given this new information, the NMFS has recently required that only non-offset circle hooks be used in Atlantic billfish tournaments. Although the prohibition of use in the southern California Bight may eliminate most potential interactions of the gear with striped marlin, macro scale climate events have been shown to change the distribution of this species, increasing their occurrence northward up the coast. For this reason we believe that the cap on any take of striped marlin included in Alternative 3 would be a necessary condition of any approval and this cap should be set at the level of a single observed mortality.

Thank you for the opportunity to comment and participate in the management of these valuable natural resources. TBF's Chief Scientist, Dr. Russell Nelson, will be at the April Council meeting and available to discuss this issue and answer any questions.

Sincerely yours,

Ellen Peel, LLD
President

Cc: Dr. Bill Hogarth
Dr. Robin Allen

EPF - Longline - I Do Not Support Approval	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: [Fwd: April 6 Meeting on Longliner]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:29:08 -0700
To: Mike Burner <Mike.Burner@noaa.gov>

Subject: April 6 Meeting on Longliner
From: jack <jackp63@comcast.net>
Date: Sat, 24 Mar 2007 08:54:25 -0800
To: pfmc.comments@noaa.gov

Dear Sir or Madam: On April 6, there will be a meeting to decide whether to allow a longliner to operate in the California/Washington area to take tuna, marlin etc. Please do not allow this to happen. There is already too much commercial pressure on these species off our coast and other areas where they roam. There should no longline fishing or more commercial pressure. There are recreational needs to satisfy. Thank you. Jack Polance

April 6 Meeting on Longliner	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: [Fwd: Agenda ItemJ.2 Exempted Fishing Permit (EFP) for Longline Fishing in the West Co]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:23:13 -0700
To: Mike Burner <Mike.Burner@noaa.gov>
CC: Kit Dahl <Kit.Dahl@noaa.gov>

Subject: Agenda ItemJ.2 Exempted Fishing Permit (EFP) for Longline Fishing in the West Co
From: CAYMAR@aol.com
Date: Fri, 23 Mar 2007 15:10:49 -0400 (EDT)
To: pfmc.comments@noaa.gov
CC: Jennifer_Thompson@billfish.org

Gentlemen:

Are you out of your minds?! How can you possibly consider the introduction of longlines on our West Coast after the havoc, according to your own studies, that these indiscriminate killing machines have caused on the East Coast. This is beyond belief! I sincerely hope that sanity returns and that the Council votes to continue the deserved and necessary ban on longlines.

Sincerely,
David L. Heine
570 Ivanhoe Plaza
Orlando, FL 32084

Agenda ItemJ.2 Exempted Fishing Permit (EFP) for Longline Fishing in the West Co	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: [Fwd: Agenda Item J.2 Exempted Fishing Permit (EFP) for Longline Fishing in the West Coast Exclusive Economic Zone]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:20:20 -0700
To: Mike Burner <Mike.Burner@noaa.gov>
CC: Kit Dahl <Kit.Dahl@noaa.gov>

Subject: Agenda Item J.2 Exempted Fishing Permit (EFP) for Longline Fishing in the West Coast Exclusive Economic Zone
From: Bill Bennett <bbennett@mgblaw.com>
Date: Thu, 22 Mar 2007 16:28:57 -0800
To: pfmc.comments@noaa.gov

Dear NOAA,

I have lived 50 years in Southern California, and been witness to the destruction of the local salt water fishery. With proposals to increase or provide exempted permits for long line fleets, you will only add to the demise of pelagic game fish and sharks in our waters. I urge you to consider the demise of sport fishing as not only an industry but as a tradition here from Zane Grey to present. By exterminating all game fish by long lines, you kill not only a real commercial industry for sport fishing, but the favorite past time of many thousands in our region.

Sincerely,

William B. Bennett
NHYC Anglers Fleet
Newport Beach, CA

Agenda Item J.2 Exempted Fishing Permit (EFP) for Longline Fishing in the West Coast Exclusive Economic Zone	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: [Fwd: (no subject) Longlines]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:28:04 -0700
To: Mike Burner <Mike.Burner@noaa.gov>

Subject: (no subject)
From: CMMSaved@aol.com
Date: Sat, 24 Mar 2007 09:18:08 -0400 (EDT)
To: pfmc.comments@noaa.gov

sirs
i am against the proposal to allow long line fishing even if it is a single vessel
thank you for your consideration
sincerely
craig m morgan, md

(no subject)	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: [Fwd: I oppose allowing longlining off the Oregon / Washington coasts]
From: PFMC Comments <pfmc.comments@noaa.gov>
Date: Mon, 26 Mar 2007 08:28:39 -0700
To: Mike Burner <Mike.Burner@noaa.gov>

Subject: I oppose allowing longlining off the Oregon / Washington coasts
From: Dean Ferguson <ciferguson37733@charter.net>
Date: Sat, 24 Mar 2007 07:56:17 -0800
To: pfmc.comments@noaa.gov

To: Dr. Donald McIsaac, Executive Director
Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101
Portland, OR 97220-1384

From: Dean Ferguson
37733 Highway 30
Astoria, OR 97103

Dear Dr. McIsaac:

I would like to express my opposition to allowing any longline fishing off the Oregon and Washington coasts. The current focus continues be rebuilding fish stocks and reduction in limits both from the sport and commercial side. Currently, Oregon has a 25 Albacore per person limit, and the discussion is how to reduce that to 10 to avoid over-fishing, even though sport fishing of Albacore is but a tiny fraction of the total catch. It does not make much sense, in my opinion, to allow a non-selective fishery to target the same fish we are being told are currently over fished.

Please take my opinion into consideration on this matter.

Sincerely,

Dean Ferguson

I oppose allowing longlining off the Oregon / Washington coasts	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Dear Dr. McIssac:

I am writing to take the opportunity to express the views of The Billfish Foundation (TBF) on the Council's consideration of a requested exempted fishing permit (EFP) to allow a single vessel to fish with prohibited longline gear in the waters under the jurisdiction of the Pacific Fishery Management Council. TBF has been an active and supportive participant in the development and implementation of the Council's Highly Migratory Species (HMS) Plan. We opposed allowing longline gear into the waters of our Pacific Coast when the Plan was proposed, citing the fact that in addition to the well documented damage the gear inflicts on sea turtles, the status of finfish species primarily expected to be targeted by this gear – swordfish, bluefin tuna, yellowfin tuna and bigeye tuna – was either unknown or, in the view of our scientific staff, approaching an overfished condition. The Council took the appropriate precautionary action and did not allow this gear.

TBF continues to oppose the use of longline gear and we cannot support the EFP request. It is not a request for actual research to look at alternative fishing methods and means. Having been modified and altered a number of times over the last several years, it remains merely a request to conduct exploratory fishing with gear prohibited by the council's HMS Plan. Furthermore, at present two species that have been at one time or another listed as potential target species for this EFP – yellowfin and bigeye tuna – have been classified as overfished. Albacore are, at best, approaching that condition and the Inter-American Tropical Tuna Commission (IATTC) has asked that no new effort be focused on this fishery in the eastern Pacific. We note that the Council is presently working in conjunction with the National Marine Fisheries Service (NMFS) and the IATTC to develop means to reduce fishing mortality on yellowfin and bigeye and cap effort on albacore. Allowing exploratory fishing with longlines seems not to be consistent with good management in this case.

TBF appreciates the fact that the Management Team has devoted time and effort to crafting alternatives for the council's consideration. We certainly support the exclusion of any EFP permitted longlines from the Southern California Bight where bycatch of striped marlin and conflicts with the well developed recreational fishery would surely have been acute. Again, TBF supports Alternative 1: the status quo non-approval option. However, if the Council deems it necessary to request approval of this EFP we urge you to adopt Alternative 3 and let the gear focus on swordfish. Further, we request that the Council require only non-offset 18/0 or larger circle hooks. Recent research has demonstrated that offsets of greater than a few degrees dramatically increase gut-hooking of finfish. Given this new information, the NMFS has recently required that only non-offset circle hooks be used in Atlantic billfish tournaments. Although the prohibition of use in the southern California Bight may eliminate most potential interactions of the gear with striped marlin, macro scale climate events have been shown to change the distribution of this species, increasing their occurrence northward up the coast. For this reason we believe that the cap on any take of striped marlin included in Alternative 3 would be a necessary condition of any approval and this cap should be set at the level of a single observed mortality.

Thank you for the opportunity to comment and participate in the management of these valuable natural resources. TBF's Chief Scientist, Dr. Russell Nelson, will be at the April Council meeting and available to discuss this issue and answer any questions.

Sincerely yours,

Allen Dean Mulanax
Portland Oregon
almulanax@comcast.net

Subject: long line fishing
From: "Foco, Trebor" <Trebor.Foco@TycoHealthcare.com>
Date: Mon, 26 Mar 2007 13:11:44 -0400
To: pfmc.comments@noaa.gov

Dr. Donald McIsaac, Executive Director
Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101
Portland, OR 97220-1384

Dear Dr. McIssac:

I am not much for words so please take this short email as a protest to the long line proposal off the west coast of Washington and Oregon. It seems funny that this would even be considered in this day in age of trying to prevent over-fishing.

Please do not allow this to happen in our waters as we would all like to see fish stocks continue to increase.

Thank you,

Treb

Trebor C. Foco
Valleylab Co.

360-624-3844 new cell
trebor.foco@tycohealthcare.com

Subject: EFP for an experimental pelagic longline fishery
From: "Scharber, Jim W" <jim.scharber@bankofamerica.com>
Date: Tue, 27 Mar 2007 14:29:18 -0500
To: pfmc.comments@noaa.gov

I oppose the EFP for an experimental pelagic longline fishery in West Coast federal waters.

James W. Scharber

7323 Griffin Rd.

Brooksville, Fl 34601

Subject: Agenda Item J.2 Comment
From: Walt Blendermann <salmonmann@hotmail.com>
Date: Mon, 26 Mar 2007 18:53:45 -0700
To: pfmc.comments@noaa.gov

Dr. Donald McIsaac, Executive Director
Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101
Portland, Oregon 97220-1334

Subject: Agenda Item J.2: Extended Fishing Permit (EFP) for Long Line Fishing in the West Coast EEZ

After careful detailed review of the Draft Environmental Assessment for the Subject EFP, I support the issuance of an EFP with Alternate 3. The timely acquisition of needed data in a controlled minimum ecosystem risk environment, that can further the goals of sustainable fishery development is reasonable and prudent.

I also feel that the determination of economic viability and ecosystem impact data will require multiple seasons for the single fishing vessel system. I would recommend a 2 or 3 season permit for a single vessel.

Sincerely,
(signed)
Mr. Walter H. Blendermann
120 Windsong Lane
Sequim, WA 98382

Advocates for Wild, Healthy Oceans

Pacific Regional Office
116 New Montgomery St.
Suite 810
San Francisco, CA 94105

415.979.0900 Telephone
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Formerly the Center for Marine Conservation

The Ocean Conservancy

March 27, 2007

Mr. Donald McIsaac
Executive Director, Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 200
Portland, OR 97220-1384

RE: Agenda Item J.2 – Exempted Fishing Permit for Longline Fishing in the West Coast Exclusive Economic Zone

Dear Mr. McIsaac and the Council:

On behalf of The Ocean Conservancy and our more than 170,000 members and activists nationwide, we are writing to oppose the exempted fishing permit (EFP) application to reestablish a Pacific longline fishery. Pelagic longline fishing has been banned within 200 miles of the California coast for well over a decade, and in March 2004 this ban was extended to the entire west coast exclusive economic zone (EEZ) for all pelagic longlining, and to the high seas beyond the EEZ for west coast-based shallow-set pelagic longlining. The proposal before the Pacific Fishery Management Council ("Council") would permit an "exempted" longline fishery within the U.S. EEZ off the coast of California. The reintroduction of pelagic longlining off the U.S. west coast poses a significant threat to vulnerable finfish populations as well as endangered and protected species including marine mammals, seabirds and Pacific loggerhead and leatherback populations. We do not believe there is sufficient evidence to justify allowing a renewed longline fishery and urge the Council and the National Marine Fisheries Service (NMFS) to reject the EFP application and identify the draft environmental assessment's (EA's) no action alternative (Alternative 1) as its preferred alternative.

The EFP threatens endangered sea turtle populations.

Sea turtles throughout the Pacific are hovering on the brink of extinction due in large part to incidental mortality associated with fishing operations. Fisheries mortality has been especially problematic for loggerheads and leatherbacks, with overall nesting population reductions in excess of 80 percent. Although the World Conservation Union (IUCN) has not yet evaluated loggerheads regionally, Pacific loggerheads, like Pacific leatherbacks, will qualify as "Critically Endangered" on the Red List of Threatened Species, based on nesting population reductions of 80 percent or more in the last three generations. Both loggerheads and leatherbacks have suffered precipitous declines in less than three generations. The two major loggerhead populations in the Pacific are found in Japan and Australia, with less than 1,000 and 300 turtles, respectively, nesting annually. While the status of the leatherback has been the focus of much

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attention in recent years, conservation, protection and support is as critical for the loggerhead as for the leatherback. According to the latest surveys, there are more nesting leatherbacks in the Pacific than nesting loggerheads.

In November 1999, concerned about the high level of sea turtle mortality associated with longlining, The Ocean Conservancy (previously known as the "Center for Marine Conservation") won an injunction restricting longline fishing under the Hawaii FMP. The injunction was an effort to reduce leatherback sea turtle mortality from shallow-set longlining targeting swordfish in the Hawaiian Islands.[1] NMFS subsequently issued a Biological Opinion pursuant to Section of 7 of the Endangered Species Act (ESA) on the Hawaii FMP. The agency concluded that continued operation of the fishery would jeopardize the existence of leatherback, loggerhead, and green sea turtles, and amended the FMP to close the Hawaii-based shallow-set longline fishery. It was allowed to re-open again in 2004 subject to the conditions that only large 18/0 circle hooks be used, that an effort cap be established to control the number of longline sets, and that a hard cap on turtle take be established to close the fishery if it approached the limits of its take authorization. In March 2006, the annual hard cap on take of loggerheads was reached after the fishery operated for less than three months.[2] In 2004, NMFS imposed a moratorium on pelagic longline fishing east of 150 degrees West longitude to guard against jeopardy to loggerheads even after the Pacific Council banned longlining west of 150 degrees West longitude. These far reaching closures demonstrate just how vulnerable threatened and endangered sea turtles are to the impacts of fishing.

The Ocean Conservancy has repeatedly called for a comprehensive evaluation of the impacts of all U.S. longlining in the Pacific on imperiled sea turtle populations, yet that essential step toward understanding the effects of Pacific longlining on Pacific turtle populations still has not occurred. It would be inappropriate to allow the capture of turtles by a California based fishery – EFP or otherwise – when the Hawaii fishery was closed for exactly this reason only one year ago. The Hawaii and California based fleets fish in the same manner, often in the same area, and catch the same turtles.[3] In addition, the fleets consist of many of the same boats as they have had a history of moving back and forth to avoid the closures to protect sea turtles that have alternated between Hawaii and California in recent years. A standard "cumulative effects" analysis is not enough in this case where the fisheries often act as a single unit.

What's more, the Council must consider the combined impact of the proposed longlining EFP along with the currently pending drift gill-net EFP. While NMFS has not yet approved the drift gillnet EFP, authorization of both EFPs for the 2007 fishing season will increase fishing effort and the risk to protected and endangered species. We strongly urge the Council to select the no action alternative, however should the Council approve the EFP, it should ensure that it includes stringent conservation measures (such as those identified in Alternative 3) that will minimize the impact of the fishery on loggerhead and leatherback sea turtles.

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[1] Center for Marine Conservation, et al., v. National Marine Fisheries Service, et al., (Civ. No. 99-00152 DAE)(D. Hawaii)

[2] 71 Fed. Reg. 14824 (March 24, 2006)

[3] 69 Fed. Reg. 11540, 11543 (March 11, 2004) (preamble to final rule closing Pacific longline fishery east of 150 degrees West long.)

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The longline EFP threatens vulnerable finfish populations.

In addition to potential negative interactions between shallow-set longline gear and endangered sea turtle populations, we are concerned about the impact of increased fishing effort on select finfish species. While the EFP application proposes to allow a single vessel to target swordfish with shallow-set longline gear in west coast EEZ, other more vulnerable highly migratory species may be targeted or caught incidentally. The draft EA identifies several non-target species of tuna including bigeye, yellowfin, skipjack bluefin and albacore which are likely to be caught with shallow-set longlines.[4] Of the five major non-target species, three (yellowfin, bigeye and albacore) have been classified as overfished or experiencing overfishing.

Both the IATTC and U.S. stock assessment scientists have identified Pacific bigeye and yellowfin tuna populations as being overfished and subject to overfishing.[5] The IATTC has put forth a resolution which states that "bigeye stocks are below the level that would produce the average maximum sustainable yield (AMSY)" and directs member nations to implement a seasonal closure for commercial purse seine and longline vessels targeting bigeye (and yellowfin) tuna.[6] Likewise, the IATTC and WCPFC adopted resolutions in 2005 identifying North Pacific albacore populations as experiencing overfishing and requiring member nations to cap current levels of effort.[7] The first Stock Assessment and Fishery Evaluation (SAFE) Report for the U.S. West Coast HMS FMP echoed this conclusion and warned that "[t]he current fishing mortality rate is high...and may be cause for concern regarding the current stock status of North Pacific albacore."[8] While shallow-set longlining does not target albacore, bigeye and yellowfin specifically, they are classified as a major non-target species likely to be captured incidentally. In light of the vulnerable status of these tuna populations, expanding capacity, increasing fishing effort and reintroducing longlining off the U.S. West Coast is not consistent with international directives, domestic regulations, the best available science and the principles of precautionary management.

The EFP is not designed to achieve its intended purpose.

For the reasons expressed above, The Ocean Conservancy does not support the proposed longline EFP. In addition, we are concerned that the EFP is not reasonably designed to meet its stated objective. The purpose of the proposed EFP is "to gather information on the economic viability and environmental effects, including potential protected species and non-target finfish interactions, of fishing in the West Coast EEZ targeting swordfish in a data poor fishery."[9] The EFP however would authorize only one vessel to fish for one year. One vessel fishing for one season will not yield statistically significant results that will allow NMFS to reasonably determine whether re-establishing a shallow-set longline fishery off the West Coast is a viable

[4] Draft Longline Exempted Fishing Permit Environmental Assessment, March 2007, p.42.
[5] 2005 HMS Stock Assessment and Fishery Evaluation Report, Table 5-1, p. 111.
[6] Resolution C-06-02, IATTC, June 2006
[7] PROP IATTC-73-C1, June 2005
[8] 2005 HMS Stock Assessment and Fishery Evaluation Report, Section 5.3.1, page 106.
[9] Draft Longline Exempted Fishing Permit Environmental Assessment, March 2007, p.2.

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option. Given our other concerns with the EFP, we are not recommending that the Council authorize more vessels to participate in the EFP to remedy this design flaw, however we do request that the Council and NMFS weigh the ecological risks against the anticipated value of this EFP.

To the extent that Pacific Council is interested in transitioning away from destructive gillnet fishing to a more selective gear type in order to target swordfish and other highly migratory fish stocks, we recommend that the Council and NMFS reframe this issue as a broader policy discussion, rather than approaching it in piecemeal fashion through the exempted fishing permit process. Current longline closures have provided a successful working balance between the interests of fishers and the urgent need to protect critically endangered leatherback and loggerhead sea turtles. It would be irresponsible to re-establish the longline fishery without the necessary conservation safeguards and a thorough environmental impacts analysis. The EFP application currently under review is not predicated on a comprehensive assessment of sea turtle populations and fishery interactions and does not adequately consider the associated impacts on endangered and protected species and the marine ecosystem. Therefore, we respectfully request that the PFMC and NMFS reject the proposal to reestablish the Pacific longline fishery and select the "no action" alternative.

Sincerely,

Meghan Jeans
Pacific Fish Conservation Manager
The Ocean Conservancy

Agenda Item J.2, April 2007
Supp. Public Comment 3

OCEANA | Protecting The World's Oceans

4189 SE Division Street, North Suite +1 503.235.0278
Portland, OR 97202 USA www.oceana.org

April 6, 2007

Mr. Donald K. Hansen, Chair
Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101
Portland, OR 97220

RE: J.2. Exempted Fishing Permit for Pelagic Longline Fishing in the West Coast EEZ.

Dear Mr. Hansen and Council members:

We are concerned by the Pacific Fishery Management Council's use of Exempted Fishing Permits (EFP) as a mechanism to circumvent regulations put in place to protect and conserve endangered species and other protected marine life. The PFMC action in November 2006 to issue an EFP that would allow drift gillnet vessels into the Pacific Leatherback Conservation Area along with the present consideration of an additional EFP that would allow the use of pelagic longlines in the same area unnecessarily puts the critically endangered leatherback sea turtle at risk, as well as whales, seals, sea lions, seabirds and an increased bycatch of fish. On the basis of the threat pelagic longlines pose to endangered leatherbacks and other marine life, we do not support development of a pelagic longline swordfish fishery in the West Coast Exclusive Economic Zone (EEZ), and we therefore object to the issuance of this EFP.

The critical issue is not the single vessel seeking exemption from California law and federal regulations that ban pelagic longline fishing in the West Coast EEZ. The critical issue is that authorization of this EFP could open the door to the development of a full-scale pelagic longline swordfish fishery off the coasts of California, Oregon and Washington. In the Pacific, leatherback sea turtles run a gauntlet of millions of pelagic longline hooks set each year, with an estimated mortality by longline gear of 1,000 to 3,200 leatherbacks in 2000 alone (Lewison et al. 2004). It would be irresponsible of us to develop new pelagic longline fisheries before taking all necessary steps to minimize sea turtle kills in existing fisheries; including 1) gear modifications and controls to reduce the take and mortality of sea turtles, 2) time and area closures along sea turtle corridors and hotspots, and 3) trade, market, or regulation-based approaches to reduce imports of target species in fisheries that catch sea turtles.

Pacific leatherbacks have declined by more than 95% in the last 25 years (Spotilla et al. 2000). Scientific research indicates that leatherbacks feeding off the U.S. West Coast come from across the Pacific basin, where Western Pacific populations have declined dramatically since the 1970s (NMFS 2006). NMFS notes that a "small number of leatherbacks may be taken as a result of fishing under the SSLL [shallow-set longline] EFP" (NMFS & PFMC 2007). The goal, however, is no dead leatherback sea turtles. At this point in the dramatic decline of Pacific

leatherbacks, the survival of every turtle sea turtle is vital (Dr. Larry Crowder, in *Science Daily* 2003).

For existing pelagic longline fisheries, Oceana supports the use of gear modifications and controls including 18/0 circle hooks with a 10^0 offset, mackerel-type bait, time and area closures, effort limitation, 100% observer coverage, protected species hard caps, and de-hooking devices. These gear modifications and controls can reduce the probability of catching sea turtles while catching target species. While these controls are essential and ought to be used by all existing fisheries, we cannot support the development of new pelagic longline fisheries, especially at the time and in the area where adult Pacific leatherbacks area known to be feeding.

Sincerely,

Jim Ayers

Jim Ayers
Vice President
Oceana

Lewison, R.L., L.B. Crowder and S. Freeman. 2004. Quantifying the effects of fisheries on threatened species: the impact of pelagic longlines on loggerhead and leatherback sea turtles. Ecology Letters 7:221-231.

National Marine Fisheries Service (NMFS). 2006. Endangered Species Act Section 7 Consultation Biological Opinion. NMFS, Southwest Region. 2006/02592.

National Marine Fisheries Service (NMFS) & Pacific Fishery Management Council (PFMC). 2007. Issuance of an exempted fishing permit to fish with longline gear in the West Coast EEZ. PFMC Agenda Item J.2.A. Attachment 1, April 2007.

Science Daily. 2003. Leatherback sea turtles careening toward extinction; scientists call for international cooperation to save giant. *Science Daily*, February 17, 2003.

Spotilla, J.R., R.D. Reina, A.C. Steyermark, et al. 2000. Pacific leatherback turtles face extinction. Nature 405:529-530.

Agenda Item J. 2. d
Supp. Public Comment 4
April 5, 2007

Donald K. Hansen, Chairman
Pacific Fishery Management Council
7700 NE Ambassador Place
Suite 101
Portland, Oregon 97220-1384

RE: Exempted Fishing Permit Comments

Dear Chairman Hansen:

Please submit to the official record opposition from the Recreational Fishing Alliance (RFA)[1] to the issuance of exempted fishing permits to longline fishing vessels in the EEZ off Washington, Oregon, and California. We have reviewed the support materials regarding this proposed action and do not believe that promoting longline gear over pelagic drift gillnets is not a legitimate alternative to minimize protective species and bycatch interactions. The idea of encouraging the use of non-selective longline gear over the use of highly non-selective drift gillnet gear is ridiculous and inappropriate.

There is little question that the deployment of pelagic longline gear is detrimental to the longterm sustainability of marine species. Impacts on target, non-target, and protected species associated with this gear prompted both California and NMFS, through the HMS FMP, to prohibit the use of longline gear along the entire West Coast EEZ. Yet, through the consideration of an EFP to a longline vessel, it seems as though the Council is exploring ways to bring new participants into the longline fishery instead of addressing existing problems with pelagic drift gillnets. We also have concerns about what impacts a resurgence in the longline fleet will have on the highly selective tuna troll fishery. This is an extremely clean fishery and we find it troubling that this fishery could be displaced by increased effort of long liners along the West Coast.

The RFA believes that the potential negative impacts associated with the promotion of longline gear through EFP far weigh any benefits. We do not feel that longline gear represents a viable alternative gear for the sustainable management of Pacific HMS.

Sincerely,

Jim Donofrio
Executive Director

[1] The Recreational Fishing Alliance (RFA) is a national, 501(c)(4) non-profit grassroots political action organization that has been representing individual sport fishermen and the sport fishing industry since 1996. The RFA Mission is to safeguard the rights of saltwater anglers, protect marine, boat and tackle industry jobs and ensure the long-term sustainability of U.S. saltwater fisheries. RFA members include individual anglers, boat builders, fishing tackle manufacturers, party and charter boat businesses, bait and tackle retailers, marinas, and many other businesses in fishing communities

Agenda Item J.2.d
Supplemental Public Comment 5
April 2007

February 23, 2006

Dr. Donald McIsaac
Executive Director
Pacific Fishery Management Council
7700 NE Ambassador Place, Ste. 200
Portland, OR 97220-1384

Dear Dr. McIsaac:

I am writing on behalf of World Wildlife Fund (WWF) to support Mr. Pete Dupuy's application for an Experimental Fishing Permit (EFP) to conduct a longline fishery in Council waters.

The current ban on longline fishing in Californian and PFMC waters is similar to the situation that existed in Hawaiian waters just a few years ago. Because of interactions with sea turtles and their declining populations, the swordfish longlining industry was closed in 2001. By working together, the industry, the Western Pacific Fisheries Management Council and NOAA, were able to adopt measures that enabled the longline fisheries to be reopened. These measures included set limits, mandatory observers, a cap on turtle interactions, the use of circle hooks, and selective use of bait species. These measures had previously been trialed in the North Atlantic, with NOAA and fishermen conducting three years of research testing these changes in gear and techniques. Turtle bycatch was reduced by as much as 90 percent in some cases, without significantly reducing the catch of target species of the fishery.

As outlined in his EFP application and in further discussions, Mr. Pete Dupuy has assured WWF that he plans to operate under similar restrictions to those implemented in Hawaii, as well as undertaking trials of gear sets and gear modifications to further reduce possible bycatch of non-target species. Approval of this EFP would provide further means of testing gear improvements, with funding already being appropriated by NOAA Southwest Fisheries Center to support this EFP. This would be used to place observers on board, create an experimental design, and perform data analysis. This is a move towards bringing consistency among the Hawaiian and West Coast fleets in this fishery.

The Hawaiian example has shown that a longline fishery can be substantially improved with gear and management modifications, rather than simply being shut down. The initiative in Hawaii is an important component of a larger international effort to eliminate the threat of longline fishing to sea turtles. World Wildlife Fund believes that the U.S. needs to lead by example. Improvements adopted and refined in the Hawaii fishery will

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be instrumental in transforming other fleets. Given the trajectory of Pacific leatherbacks and loggerheads, it is essential that we reduce bycatch not only in the U.S. fleet, but in all fishing fleets fishing in the Pacific. International fishery management bodies have recognized this need and called on all fleets to improve fishing gear and techniques to reduce turtle bycatch. The problem is one of international dimension.

In contrast, World Wildlife Fund does not support the application for the issue of an EFP for the drift gillnet fishery. The time and area closure currently in place was originally imposed because of the fishery's turtle interactions, and, indeed, since the closure was put in place the fishery's interactions with turtles has decreased. The proposed EFP application does not reflect any gear modifications or techniques to attempt to overcome this problem. A reduction in the size of the fleet is not an experimental design and we believe the lack of effort in this proposal to attempt to make this a cleaner fishery cannot justify the issue of an EFP. This application simply appears to be an attempt to recreate the original situation, which necessitated the restrictions in the first place.

Thank you for the opportunity to comment on these applications.

Sincerely,

M. Osmond

Mike Osmond
Senior Program Officer
World Wildlife Fund

ALBACORE FISHING EFFORT CHARACTERIZATION

In 2006, the Council was briefed on two resolutions adopted in 2005 by the Inter-American Tropical Tuna Commission (IATTC) and the Western and Central Pacific Fisheries Commission (WCPFC) calling on parties to not increase beyond current levels total fishing effort by their fleets on North Pacific albacore tuna. These resolutions were adopted in response to information raising a conservation concern about the future status of the stock. After receiving input on the vagaries and implications of defining "current effort," the Council directed its Highly Migratory Species Management Team (HMSMT) to review historical fishing effort by U.S. West Coast vessels targeting North Pacific albacore in order to provide baseline information for any decision-making on what measures, if any, might be implemented to address these resolutions. Proper characterization of historical U.S. fishery effort on albacore will be used in demonstrating to the IATTC and WCPFC how the U.S. West Coast is complying with these resolutions.

At their February 7–8, 2007 meeting, the HMSMT and Highly Migratory Species Advisory Subpanel (HMSAS) discussed a proposed method to characterize historical albacore fishing effort developed by Southwest Fisheries Science Center staff in cooperation with the HMSMT. Based on these discussions, the presentation of this information has been further refined and is included here as Attachment 1. The HMSAS favors a different approach to characterizing historical albacore fishing effort and at the February 7–8 meeting adopted a resolution containing this recommendation, which is included here as the HMSAS Report.

The Council could develop a preliminary recommendation at this meeting, which could then be made available for public review and finalized at a future Council meeting, or the Council could decide to take final action at this meeting. In finalizing any recommendation the Council may wish to confer with representatives from National Marine Fisheries Service and Department of State about the necessity of making a final recommendation in advance of this year's IATTC meeting, which occurs June 18–29.

Council Action:

Review data and recommendations from the HMSMT and HMSAS, and consider adopting a characterization of historical North Pacific albacore fishing effort, a definition of current effort, and a response to IATTC and WCPFC resolutions. Determine the process for finalizing the Council's recommendations.

Reference Materials:

1. Agenda Item J.3.b, Attachment 1: Historical Albacore Effort Data
2. Agenda Item J.3.c, HMSAS Report

Agenda Order:

a. Agenda Item Overview — Kit Dahl
b. Science Center Report — Suzanne Kohin
c. Reports and Comments of Advisory Bodies
d. Public Comment
e. **Council Action:** Take Final Action To Adopt, Or Adopt For Public Review, A Characterization Of Historical U.S. North Pacific Albacore Fishing Effort That Supports IATTC And WCPFC Resolutions.

PFMC
03/20/07

Draft document for PFMC Review, April 2007

Estimating Recent Effort for the US Fisheries Landing Albacore

1. Data were obtained on each commercial fishery from SWFSC and PIFSC. Recreational data were provided by the State Fishery Departments. Data include annual catch, number of vessels if available, and number of days fished, either as vessel days or angler days. In the case of the longline fishery, effort is the number of hooks fished. Data provided are shown in worksheet "**Available Data**".
    A. These data are the same as compiled for the ISC albacore working group.
    B. In recent years, a local handline/troll fishery targeting bigeye and yellowfin tuna near the Hawaiian Islands had significant catch of larger sized albacore, but these data have not been verified and are not considered reliable to use until further scrutinized. Nonetheless, they are included here. Their contribution is about 1% annually on average for those years reported, so their inclusion is considered to have a negligible effect overall.
    C. The period of 1996-2005 was selected to represent recent catch and effort due to relatively stable landings over that period with a noticeable change from the earlier period occurring between 1995-1996.

2. The fisheries and their average annual proportion of the total US landings 1996-2006 are presented in worksheet "**Relative Contribution**".
    A. Other Baitboat (<1%) – These are vessels which specifically declare their fishing method as baitboat, otherwise they fall in the Troll/Baitboat category. Oregon and Washington landing tickets do not distinguish baitboat from troll, so all those vessels fall under Troll/Baitboat.
    B. Gillnet (<1%) – Targets swordfish and thresher shark in the US west coast EEZ.
    C. Longline (5.5%) – Targets bigeye tuna primarily.
    D. Purse Seine (<1%)
    E. Sport Charter (9.6%)
    F. Sport Private (3.7%)
    G. Troll/Baitboat (79.1%)
    H. Other (<0.01%) – Catchall for any other landings with none of the other methods identified.
    I. Hawaii Troll/Handline (1.1%) – a small local fishery which operates only within the EEZ around Hawaii and targets bigeye and yellowfin tuna, primarily. Landings data have not been verified and are considered questionable at this time.

3. To calculate effort from those relatively minor fisheries for which it is not available (other baitboat, purse seine, and other), the number of days of effort was estimated based on the assumption of equivalent cpue as the surface fishery (troll/baitboat). Overall, the 3 fisheries for which this substitution was made account for a total of less than 3% of the landings in any given year, so even an

erroneous assumption here is considered negligible. Those fisheries which are considered to have a cpue equivalent to the troll/baitboat are shown shaded in grey in the worksheet "**Modeled Effort**".

4. To calculate effort for the other fisheries for which the cpue differs from the troll/baitboat fishery, the ratio of

   $cpue_{(other\ fishery)}/cpue_{(troll/baitboat\ fishery)}$

   was used to calculate the relative cpue of the other fishery. For example, if the longline fishery catches 12mt on 1,200,000 hooks, and the troll/baitboat fishery catches 12mt in 12 days, then the relative "efficiency" of the longline fishery is 100,000 hooks per troll fishing day. This method was used to calculate effort for the other fisheries (gillnet, longline, sport charter, sport private, and Hawaii handline/troll) in the common metric of "reference fishing days". Those fisheries and the modeled effort values are shown shaded in green in the worksheet "**Modeled Effort**". For each fishery, an estimate of the error associated with the effort values was generated from the mean and variance of the annual estimated reference days.

5. Total modeled reference days were calculated by summing across all fisheries. Total error estimates were appropriately propagated across all fisheries to reflect the error estimate of the summed total. A "band" of recent effort could be considered the range of values for the total modeled effort from 1996-2006. Alternatively, the "band" could be considered to be the 95% confidence interval of the mean of the modeled effort across all years, 1996-2006. See worksheet "**Modeled Effort**".

6. It may be best to recalculate these values without the 2006 catch and effort data, as the 2006 data is considered provisional at this time.

7. Based on feedback provided by the HMSMT and HMSAS at their February meeting, the commercial catch and effort data were separated from the recreational data and the modeled effort was calculated just for the commercial fisheries. Graphs represent recent catch of just the commercial fisheries east and west of 150° W longitude, and the modeled recent effort of the commercial fisheries. A final worksheet shows data for the recreational fisheries.

Worksheet "Available Data"
U.S. Albacore fisheries in the North Pacific (Annual Statistics)

Original data with best estimates of effort in various units

YEAR	OTHER BAITBOAT (EEZ)	GILLNET (EEZ)			LONGLINE			PURSE SEINE (EEZ)		SPORT Charter (EEZ, Mex)		SPORT Private (EEZ)		TROLL/BAITBOAT			OTHER (EEZ)	Hawaii Troll/Handline (EEZ, W of 150)		Total	West of 150 W	East of 150 W
	CATCH MT	CATCH MT	EFFORT DAYS	VESSELS NUMBER	CATCH MT	EFFORT Hooks	VESSELS NUMBER	CATCH MT	VESSELS NUMBER	CATCH MT	EFFORT DAYS	CATCH MT	EFFORT DAYS	CATCH MT	EFFORT DAYS	VESSELS NUMBER	CATCH MT	CATCH MT	VESSELS NUMBER	CATCH MT	CATCH MT	CATCH MT
1986	432	3	10,936	216			39		15	330	20,313	315		4,708	16,277	462	0	5		5,792	425	5,368
1987	158	5	8,685	193	150		37		5	115	9,057	39		2,766	14,732	518	0	6		3,239	646	2,593
1988	598	15	6,185	165	308		50		4	5	1,086	10		4,212	13,880	547	10	9		5,167	320	4,848
1989	54	4	5,950	153	249		88		3	198	20,216	31		1,860	11,482	346	23	36		2,456	292	2,163
1990	115	29	4,493	128	177	970,394	138	71	7	37	9,918			2,603	9,538	371	4	15		3,051	346	2,704
1991	0	17	4,713	119	313	11,441,302	144	0	0	10	1,890			1,845	9,420	179	71	72		2,328	450	1,878
1992	0	0	4,049	115	337	10,697,683	125	0	0	4	255			4,572	17,032	603	72	54	1,977	5,038	443	4,595
1993	0	0	5,484	128	440	12,038,774	129	0	4	4	181			6,254	21,415	518	0	71	1,987	6,769	2,374	4,395
1994	0	38	4,627	134	546	10,859,494	156	0	1	1	113	19		10,978	26,072	686	213	90	1,948	11,885	2,047	9,838
1995	80	52	3,773	106	883	13,039,899	132	0	0	14	1,150	46		8,045	25,650	464	1	177	2,020	9,298	3,399	5,899
1996	24	83	3,626	108	1,187	13,797,215	118	11	1	32	2,911	14		16,938	32,717	640	0	188	2,166	18,477	12,675	5,802
1997	73	60	3,019	95	1,652	14,827,349	130	2	5	717	42,319	818		14,252	45,572	1,121	1	133	2,149	17,708	11,256	6,453
1998	79	80	2,822	88	1,120	16,647,964	147	33	15	1,108	60,584	752	698	14,410	21,445	755	2	88	2,135	17,672	7,221	10,451
1999	60	149	356	41	1,540	18,332,090	130	48	5	2,667	88,551	1282	592	10,060	34,643	705	1	331	2,127	16,138	3,470	12,667
2000	69	55	1,229	49	940	21,713,196	129	4	2	1,337	61,160	493	337	9,645	37,331	649	3	120	1,993	12,666	3,516	9,149
2001	139	94	1,604	61	1,295	23,691,849	125	51	7	2,023	96,813	830	1296	11,210	26,566	870	0	194	1,937	15,837	5,688	10,149
2002	381	30	1,660	52	525	27,533,505	123	4	2	2,447	104,437	635	564	10,387	25,350	641	0	235	1,916	14,646	4,052	10,593
2003	59	16	1,423	46	524	30,473,166	129	44	2	2,675	85,857	1236	2313	14,102	23,442	836	0	85	1,650	18,741	2,972	15,769
2004	126	12	1,099	37	355	43,254,424	125	1	1	1,661	67,204	(347)	25941	13,346	23,979	734	0	160	1,550	16,009	1,221	14,788
2005	(66)	(20)	1,040	38	(294)	45,649,694	125	(2)	1	1,002	39,054	(82)	13883	(9,122)	(25,252)	549	0	183	NA	10,770	528	10,242
2006	(11)	(2)	112	14	(251)	37,630,188	123	(0)	0	337	19,306	(145)	9199	(12,645)	(34,860)	574	0	53	NA	13,443	376	13,067

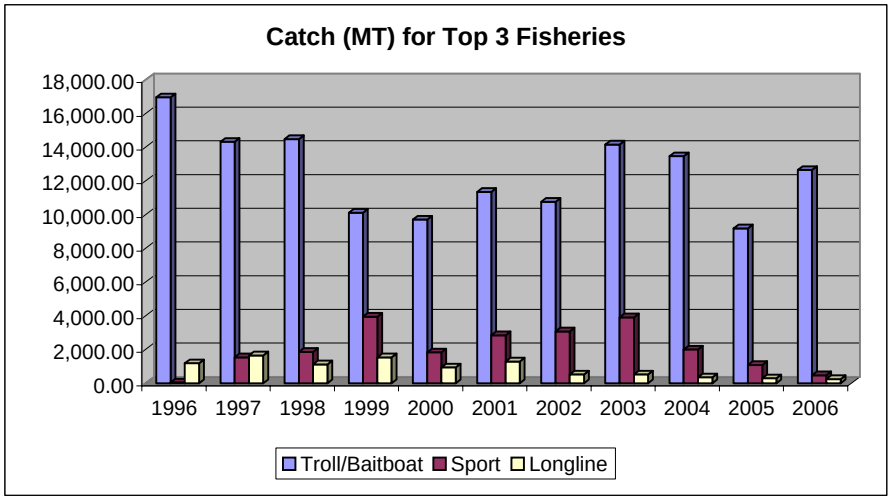
EEZ means that the fishery operates entirely within the US West Coast EEZ
Gillnet effort in days calculated by any drift gillnet catch per total days fishing (not just albacore) from logbooks
Gillnet vessels is number of DFG vessels in logs, 1999 logbook coverage may be low since number of vessels in logs is lower than the number of vessels landing ALB.
PIFSC working on revising number of longline vessels - there may be double counting of CA vessels that fished both fisheries.
Purse seine vessels only include purse seiners fishing inside the EEZ.
Hawaii troll and handline data are new and are being reviewed for accuracy before inclusion in stock assessments.
Values in parentheses are considered preliminary
Recreational data include fish taken in Mexico waters by CA based charter boats (see "By Area..." worksheet)
CA recreational data from Recfin
CA recreational private boat average weight for 1990-1992 based on average of all other years (9.69 kg)
CA recreational CPFV average weight for 1990-1993 estimated as average for all other years (9.96 kg)
CA recreational private boat data for 1986-2003 from MRFSS and for 2004-05 from CRFS
OR recreational data from Oregon Recreational Boat Survey
OR recreational average weight = 16, 20 and 18 lbs in 2004, 2005 and 2006, respectively (used 18 lbs for other years)
WA recreational avg weight = 19.2 lbs from 2005 charter logs and 16.2 from 2006 logs; 19.2 lbs was used for 2000-2005
Recreational effort unit is one angler-day in CA, one trip in WA and OR
Washington Recreational data from Washington Ocean Sampling Program
Troll/Baitboat effort GLM corrected based on area (1 degree square) and 10 day period

2006 additional notes:
All catches are from a PacFIN extract made on January 10, 2007
Gillnet effort and number of vessels are from logbooks on hand as of January 10, 2007
Troll effort from 2005 CPUE (changed to weight per fish with 2005 average weight) generated in Childers data report.
Longline effort for HI calculated using the 2005 HI longline mt/1000 hooks + the CA longline hooks from logs.
Hawaii troll/handline fishery data have not been verified and may be erroneous. Nonetheless, their contribution is less than 1% of total catch overall, so they are included.

Worksheet "Relative Contribution"

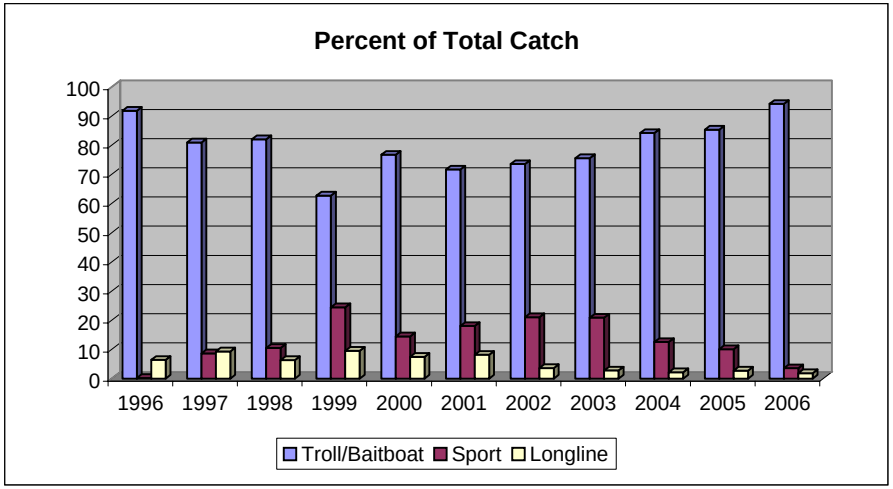
Relative Proportion (in percent) of the total US catch for each fishery 1996-2006

	A	B	C	D	E	F	G	H	I
Year	OTHER BAITBOAT (EEZ)	GILLNET (EEZ)	LONGLINE	PURSE SEINE (EEZ)	SPORT Charter (EEZ, Mex)	SPORT Private (EEZ)	TROLL / BAITBOAT	OTHER (EEZ)	Hawaii Troll / Handline
1996	0.13	0.45	6.42	0.06	0.17	0.08	91.67	0.00	1.02
1997	0.41	0.34	9.33	0.01	4.05	4.62	80.48	0.01	0.75
1998	0.45	0.45	6.34	0.19	6.27	4.25	81.54	0.01	0.50
1999	0.37	0.92	9.54	0.30	16.53	7.94	62.34	0.01	2.05
2000	0.54	0.43	7.42	0.03	10.56	3.89	76.15	0.02	0.95
2001	0.88	0.59	8.18	0.32	12.78	5.24	70.79	0.00	1.22
2002	2.60	0.21	3.59	0.03	16.71	4.33	70.92	0.00	1.60
2003	0.32	0.09	2.80	0.23	14.27	6.60	75.25	0.00	0.45
2004	0.79	0.07	2.22	0.01	10.38	2.17	83.37	0.00	1.00
2005	0.61	0.19	2.73	0.02	9.30	0.76	84.70	0.00	1.70
2006	0.08	0.01	1.87	0.00	2.51	1.08	94.06	0.00	0.39
max	2.60	0.92	9.54	0.32	16.71	7.94	94.06	0.02	2.05
min	0.08	0.01	1.87	0.00	0.17	0.08	62.34	0.00	0.39
avg	0.65	0.34	5.49	0.11	9.41	3.72	79.21	0.00	1.06

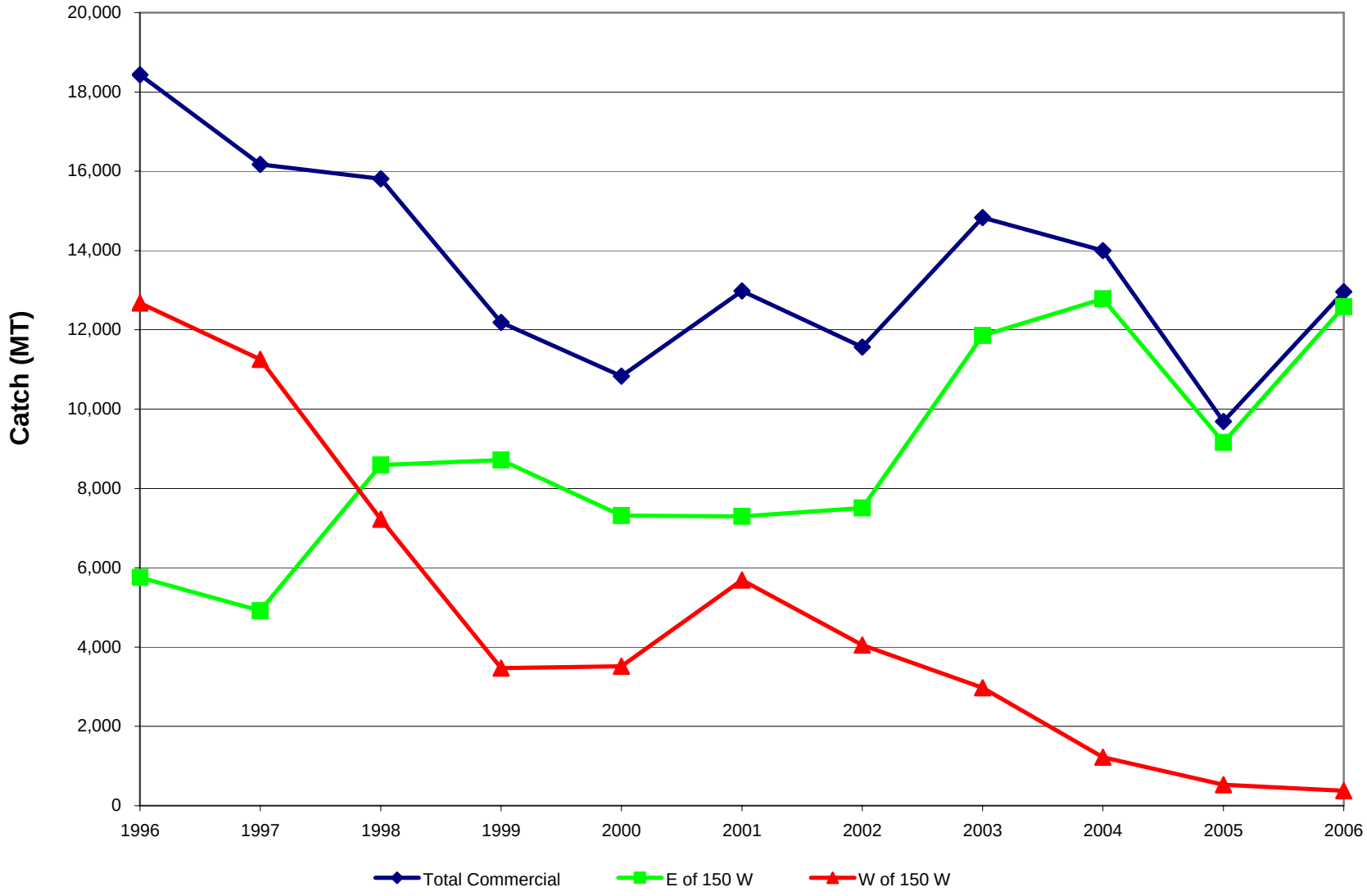


Summarized for top 3 fisheries (Troll/baitboat, Sport, Longline)

	Troll/Baitboat (A+G)		Sport (E+F)		Longline (C)		Others
Year	catch (MT)	rel.%	catch (MT)	rel.%	catch (MT)	rel.%	rel.%
1996	16,962	91.80	46	0.25	1,187	6.42	1.53
1997	14,325	80.89	1,535	8.67	1,652	9.33	1.11
1998	14,489	81.99	1,860	10.53	1,120	6.34	1.15
1999	10,121	62.71	3,949	24.47	1,540	9.54	3.28
2000	9,714	76.69	1,830	14.45	940	7.42	1.44
2001	11,350	71.66	2,854	18.02	1,295	8.18	2.14
2002	10,768	73.52	3,082	21.05	525	3.59	1.84
2003	14,161	75.56	3,911	20.87	524	2.80	0.77
2004	13,472	84.16	2,009	12.55	355	2.22	1.08
2005	9,188	85.31	1,083	10.06	294	2.73	1.90
2006	12,656	94.14	481	3.58	251	1.87	0.41
max	16,962	94.14	3,949	24.47	1,652	9.54	3.28
min	9,188	62.71	46	0.25	251	1.87	0.41
avg	12,473	79.86	2,058	13.13	880	5.49	1.51



Recent US Commercial Albacore Landings



Worksheet "Modeled Effort"

In this model, CPUE was calculated individually for each year for each fishery 1996-2006 and used to derive a reference number of days fished based on the troll/baitboat cpue.

In the top table, estimates of effort were calculated for the minor surface fisheries (other baitboat, purse seine, other EEZ) using the troll/baitboat cpue

The four values in red are effort estimates substituted in based on the average cpue for that fishery for the years for which effort was available

YEAR	OTHER BAITBOAT (EEZ)			GILLNET (EEZ)			LONGLINE			PURSE SEINE (EEZ)			SPORT Charter (EEZ)			SPORT Private (EEZ)			TROLL/BAITBOAT			OTHER (EEZ)			Hawaii Troll/Handline (EEZ, W of 150)		
	CATCH MT	EFFORT DAYS	VESSELS NUMBER	CATCH MT	EFFORT DAYS	VESSELS NUMBER	CATCH MT	EFFORT Hooks	VESSELS NUMBER	CATCH MT	EFFORT DAYS	VESSELS NUMBER	CATCH MT	EFFORT DAYS	VESSELS NUMBER	CATCH MT	EFFORT DAYS	VESSELS NUMBER	CATCH MT	EFFORT DAYS	VESSELS NUMBER	CATCH MT	EFFORT DAYS	VESSELS NUMBER	CATCH MT	EFFORT DAYS	VESSELS NUMBER
1986	432	1,494	NA	3	10,936	216			39			15	330	957		315			4,708	16,277	462	0	0	NA	5		
1987	158	842	NA	5	8,685	193	150		37			5	115	452		39			2,766	14,732	518	0	0	NA	6		
1988	598	1,971	NA	15	6,185	165	308		50			4	5	60		10			4,212	13,880	547	10	33	NA	9		
1989	54	333	NA	4	5,950	153	249		88			3	198	853		31			1,860	11,482	346	23	142	NA	36		
1990	115	421	NA	29	4,493	128	177	970,394	138	71	260	7	37	455		0			2,603	9,538	371	4	15	NA	15		
1991	0	0	NA	17	4,713	119	313	11,441,302	144	0	0	0	10	99		0			1,845	9,420	179	71	363	NA	72		
1992	0	0	NA	0	4,049	115	337	10,697,683	125	0	0	0	4	14		0			4,572	17,032	603	72	268	NA	54		1,977
1993	0	0	NA	0	5,484	128	440	12,038,774	129	0	0	4	4	12		0			6,254	21,415	518	0	0	NA	71		1,987
1994	0	0	NA	38	4,627	134	546	10,859,494	156	0	0	1	1	10		19			10,978	26,072	686	213	506	NA	90		1,948
1995	80	255	NA	52	3,773	106	883	13,039,899	132	0	0	0	14	56		46			8,045	25,650	464	1	2	NA	177		2,020
1996	24	46	NA	83	3,626	108	1,187	13,797,215	118	11	22	1	32	2,911		14	134		16,938	32,717	640	0	0	NA	188		2,166
1997	73	233	NA	60	3,019	95	1,652	14,827,349	130	2	5	5	717	42,319		818	7,730		14,252	45,572	1,121	1	3	NA	133		2,149
1998	79	118	NA	80	2,822	88	1,120	16,647,964	147	33	49	15	1,108	60,584		752	698		14,410	21,445	755	2	2	NA	88		2,135
1999	60	208	NA	149	356	41	1,540	18,332,090	130	48	165	5	2,667	88,551		1,282	592		10,060	34,643	705	1	3	NA	331		2,127
2000	69	266	NA	55	1,229	49	940	21,713,196	129	4	16	2	1,337	61,160		493	337		9,645	37,331	649	3	11	NA	120		1,993
2001	139	330	NA	94	1,604	61	1,295	23,691,849	125	51	120	7	2,023	96,813		830	1,296		11,210	26,566	870	0	1	NA	194		1,937
2002	381	930	NA	30	1,660	52	525	27,533,505	123	4	10	2	2,447	104,437		635	564		10,387	25,350	641	0	1	NA	235		1,916
2003	59	98	NA	16	1,423	46	524	30,473,166	129	44	72	2	2,675	85,857		1,236	2,313		14,102	23,442	836	0	1	NA	85		1,650
2004	126	226	NA	12	1,099	37	355	43,254,424	125	1	2	1	1,661	67,204		347	25,941		13,346	23,979	734	0	0	NA	160		1,550
2005	66	183	NA	20	1,040	38	294	45,649,694	125	2	6	1	1,002	39,054		82	13,883		9,122	25,252	549	0	0	NA	183		2,102
2006	11	30	NA	2	112	14	251	37,630,188	123	0	0	0	337	19,306		145	9,199		12,645	34,860	574	0	0	NA	53		609

YEAR	OTHER BAITBOAT (EEZ)		GILLNET (EEZ)			LONGLINE			PURSE SEINE (EEZ)	SPORT Charter (EEZ)			SPORT Private (EEZ)			TROLL/BAITBOAT		OTHER (EEZ)	Hawaii Troll/Handline (EEZ, W of 150)		
		ref. days	cpue	rel. cpue	ref. days	cpue	rel. cpue	ref. days	ref. days	cpue	rel. cpue	ref. days	cpue	rel. cpue	ref. days	cpue troll	ref. days	ref. days	cpue	rel. cpue	ref. days
1996		46	0.023	0.04	160	0.000	0.0002	2292	22	0.011	0.02	62	0.106	0.20	27	0.518	32,717	0	0.087	0.17	363
1997		233	0.020	0.06	192	0.000	0.0004	5284	5	0.017	0.05	2294	0.106	0.34	2615	0.313	45,572	3	0.062	0.20	425
1998		118	0.028	0.04	119	0.000	0.0001	1667	49	0.018	0.03	1649	1.077	1.60	1119	0.672	21,445	2	0.041	0.06	131
1999		208	0.417	1.44	512	0.000	0.0003	5301	165	0.030	0.10	9183	2.166	7.46	4415	0.290	34,643	3	0.156	0.54	1140
2000		266	0.045	0.17	213	0.000	0.0002	3638	16	0.022	0.08	5177	1.462	5.66	1906	0.258	37,331	11	0.060	0.23	464
2001		330	0.059	0.14	223	0.000	0.0001	3068	120	0.021	0.05	4795	0.641	1.52	1968	0.422	26,566	1	0.100	0.24	460
2002		930	0.018	0.04	74	0.000	0.0000	1282	10	0.023	0.06	5973	1.126	2.75	1549	0.410	25,350	1	0.123	0.30	574
2003		98	0.011	0.02	27	0.000	0.0000	871	72	0.031	0.05	4446	0.534	0.89	2055	0.602	23,442	1	0.052	0.09	141
2004		226	0.011	0.02	22	0.000	0.0000	638	2	0.025	0.04	2985	0.013	0.02	624	0.557	23,979	0	0.103	0.19	287
2005		183	0.019	0.05	55	0.000	0.0000	814	6	0.026	0.07	2773	0.006	0.02	226	0.361	25,252	0	0.087	0.24	507
2006		30	0.018	0.05	6	0.000	0.0000	692	0	0.017	0.05	929	0.016	0.04	399	0.363	34,860	0	0.087	0.24	146
mean		242.64		0.19	145.60		0.0001	2322.52	42.48		0.06	3660.48		1.86	1536.63		30105.23	2.09		0.23	421.67
var		60568.1			20995.4			3132087.6	3047.4			6761964.6			1633625		55708874	10.4			80975.3
std		246.11			144.90			1769.77	55.20			2600.38			1278.13		7463.84	3.23			284.56
se		74.20		5.28	43.69		8239.84	533.61	16.64		17.95	784.04		0.54	385.37		2250.43	0.97		4.43	85.80
	1:1		0.19:1 or 5.3 days fishing to 1 t			0.0001:1 or 8240 hooks to 1 troll day			1:1	0.06:1 or 17.9 days to 1 troll day			1.86:1 or 0.5 days to 1 troll d			N/A		1:1	0.23:1 or 4.4 days to 1 troll day		

Year	Total Effort in Modeled Reference Days: All fisheries			Band based on 95% confidence of average modeled total effort			Band based on range of total modeled effort	
	All Fisheries	Troll/bait only	Others	mean	mean - se	mean + se	min	max
1996	35,690	32,764	2,927	38,479	33,116	43,843	26,299	56,625
1997	56,625	45,806	10,819					
1998	26,299	21,562	4,736					
1999	55,570	34,851	20,719					
2000	49,023	37,597	11,426					
2001	37,531	26,896	10,634					
2002	35,743	26,280	9,463					
2003	31,153	23,540	7,613					
2004	28,763	24,206	4,557					
2005	29,815	25,435	4,380					
2006	37,061	34,890	2,171					
min	26,299							
max	56,625							
mean	38,479							
var	67,402,147							
std	8,210							
se	2,737							
95% CI	5,364							

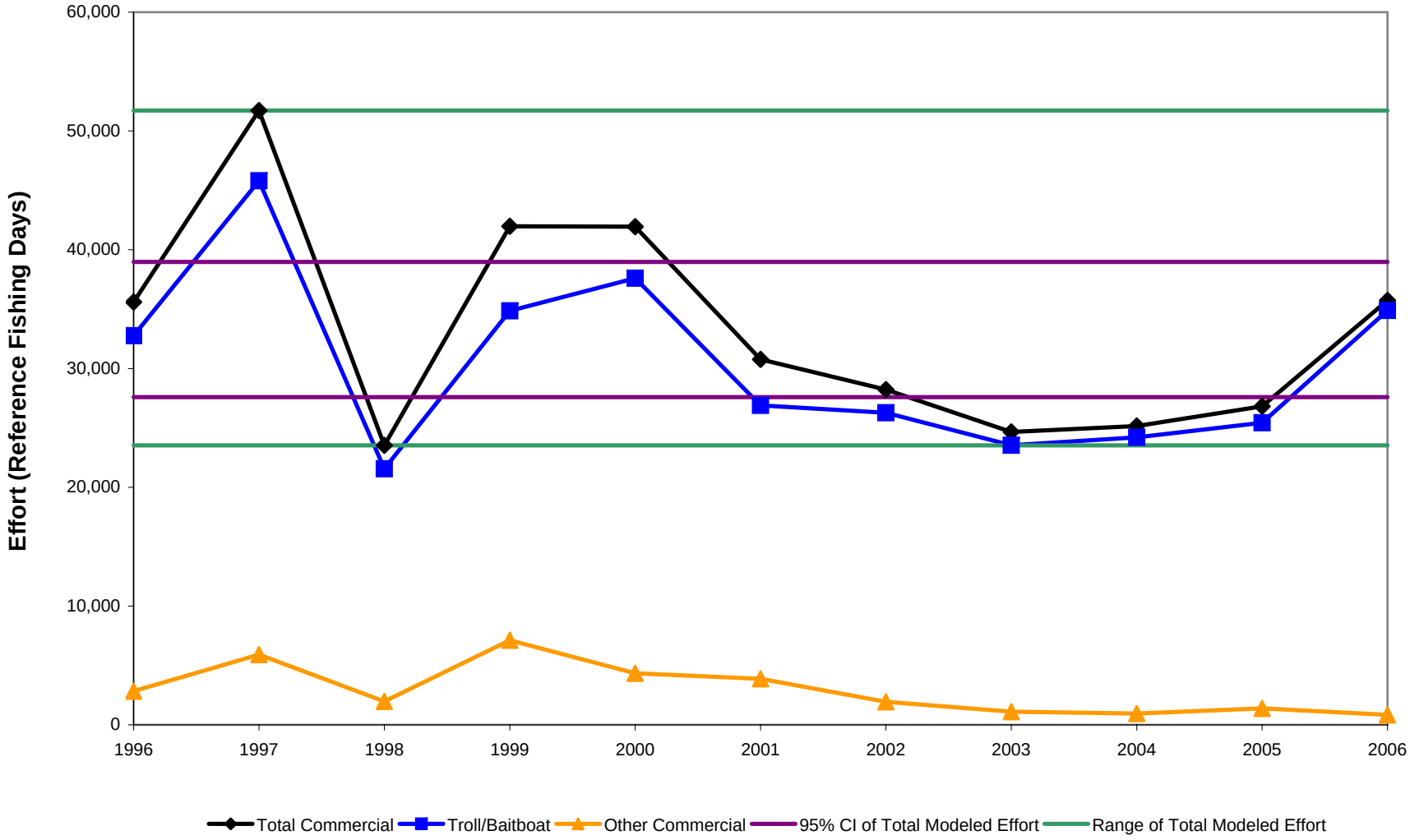
Total Effort in Modeled Reference Days: Commercial Fisheries			Band based on 95% confidence of average modeled total effort			Band based on range of total modeled effort	
Troll/Bait only	Other Commercial	Total Commercial	mean	mean - se	mean + se	min	max
32,764	2,838	35,601	33,282	27,592	38,973	23,530	51,715
45,806	5,909	51,715					
21,562	1,968	23,530					
34,851	7,122	41,972					
37,597	4,342	41,940					
26,896	3,872	30,768					
26,280	1,941	28,221					
23,540	1,112	24,652					
24,206	949	25,154					
25,435	1,381	26,816					
34,890	844	35,734					
	min	23,530					
	max	51,715					
	mean	33,282					
	var	59,006,558					
	std	7,682					
	se	2,903					
	95% CI	5,691					

Potential combination model for commercial effort:

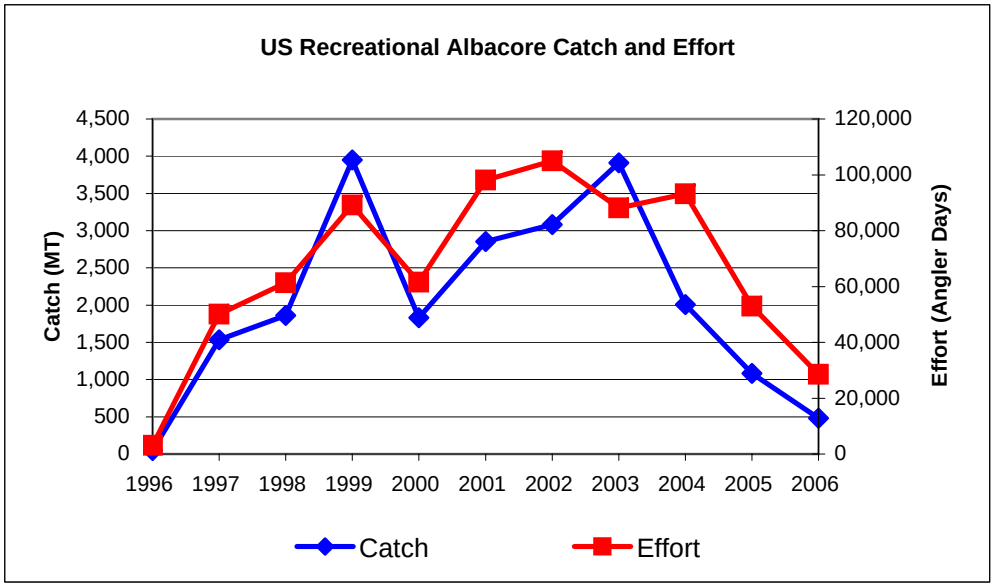
Total Modeled Effort = [Days fishing (sum of Troll, baitboat, purse seine, other)]
+ [Days fishing (gillnet)/5.3]
+ [Hooks fishing (longline)/8240]
+ [vessels fishing (Hawaii handline)/4.4]

Total not to exceed 51,715
(max of 1996-2006),
or
Total not to exceed 38,973
(max of 95% CI)
or
Total not to exceed some other threshold of recent effort

Modeled Recent US Commercial Albacore Effort



Recreational (sum of private and CPFV)		
Year	Catch MT	Effort Ang. Days
1996	46	3,045
1997	1,535	50,049
1998	1,860	61,282
1999	3,949	89,143
2000	1,830	61,497
2001	2,854	98,109
2002	3,082	105,001
2003	3,911	88,170
2004	2,009	93,145
2005	1,083	52,937
2006	481	28,505
mean	2,058	66,444



Notes:
Recreational data include fish taken in Mexico waters by CA based charter boats
CA recreational data from Recfin
CA recreational private boat average weight for 1990-1992 based on average of all other years (9.69 kg)
CA recreational CPFV average weight for 1990-1993 estimated as average for all other years (9.96 kg)
CA recreational private boat data for 1986-2003 from MRFSS and for 2004-05 from CRFS
OR recreational data from Oregon Recreational Boat Survey
OR recreational average weight = 16, 20 and 18 lbs in 2004, 2005 and 2006, respectively (used 18 lbs for other years)
WA recreational avg weight = 19.2 lbs from 2005 charter logs and 16.2 from 2006 logs; 19.2 lbs was used for 2000-2005
Recreational effort unit is one angler-day in CA, one trip in WA and OR
Washington Recreational data from Washington Ocean Sampling Program
The 2006 data are considered preliminary

Agenda Item J.3.c
HMSAS Report
April 2007

HIGHLY MIGRATORY SPECIES ADVISORY SUBPANEL REPORT ON ALBACORE FISHING EFFORT CHARACTERIZATION

The Highly Migratory Species Advisory Subpanel (HMSAS) recommends that the Pacific Fishery Management Council adopt the following definition of "current levels of effort" regarding the Inter-American Tropical Tuna Commission (IATTC) Resolution capping fishing effort on north Pacific albacore tuna fishing in the North Pacific east of 150° W latitude at "current levels."

Definition of "current level of effort": The current level of effort for the U.S. albacore fishery by all gear types in the IATTC jurisdiction of the North Pacific is defined as "a range from 1996-2006 of the number of commercial vessels that have landed any amount of albacore over that time period. For the U.S. fishery it is recognized that the U.S. has a recreational harvest of albacore that must be recognized but is not currently included in the definition of current effort."

The HMSAS recommends that a similar, if not the same definition, be used with respect to the Western and Central Pacific Fisheries Commission Resolution on North Pacific albacore.

The U.S. is doing the following in regards to effort caps on effort for North Pacific albacore fishing east of 150° W longitude:

1. Limited entry on drift gillnet and longline fisheries
2. Recreational bag limits on albacore
3. Has scaled back Canadian albacore fishing effort in the U.S. EEZ under the U.S./Canada albacore treaty
4. Attrition within the U.S. albacore fleet (no new vessels or entrants)
5. New IUU enforcement initiatives under the Magnuson-Stevens Act
6. Logbook requirements
7. U.S. albacore fishery is not subsidized in any amount

PFMC
03/20/07

Agenda Item J.3.b
Supplemental SWFSC PowerPoint
April 2007

Characterization of Recent U.S. Albacore Fishing Effort

Suzanne Kohin

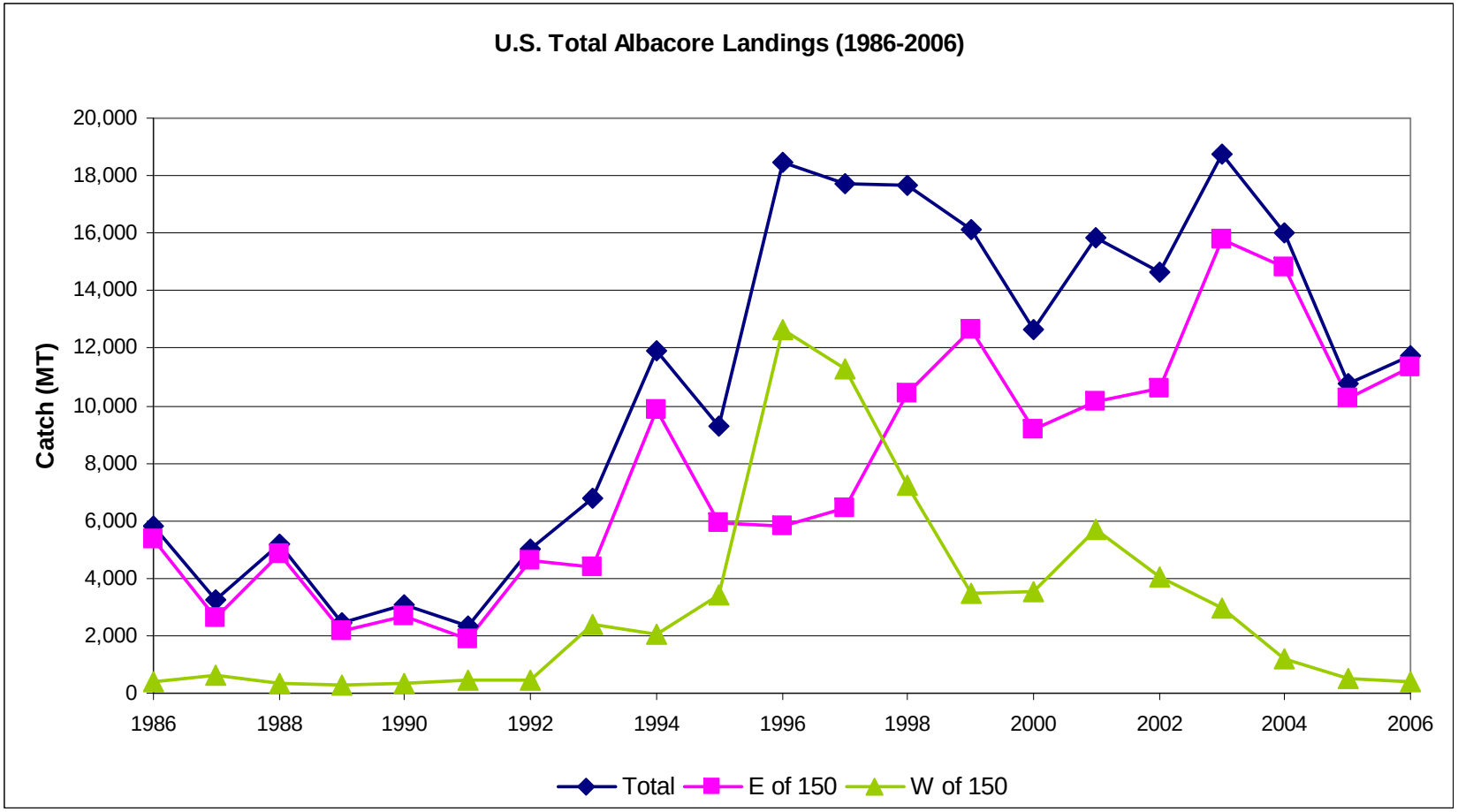
Southwest Fisheries Science Center
Highly Migratory Species Management Team

Available Fishery Data

Original data with best estimates of effort in various units

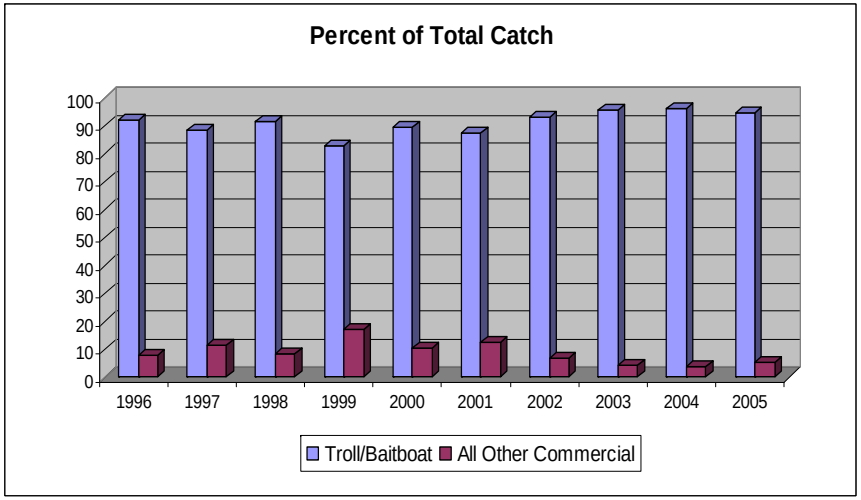
YEAR	OTHER BAITBOAT (EEZ)	GILLNET (EEZ)			LONGLINE			PURSE SEINE (EEZ)		SPORT Charter (EEZ, Mex)		SPORT Private (EEZ)		TROLL/BAITBOAT			OTHER (EEZ)	Hawaii Troll/Handline (EEZ, W of 150)		Total	West of 150 W	East of 150 W
	CATCH MT	CATCH MT	EFFORT DAYS	VESSELS NUMBER	CATCH MT	EFFORT Hooks	VESSELS NUMBER	CATCH MT	VESSELS NUMBER	CATCH MT	EFFORT DAYS	CATCH MT	EFFORT DAYS	CATCH MT	EFFORT DAYS	VESSELS NUMBER	CATCH MT	CATCH MT	VESSELS NUMBER	CATCH MT	CATCH MT	CATCH MT
1986	432	3	10,936	216			39		15	330	20,313	315		4,708	16,277	462	0	5		5,792	425	5,368
1987	158	5	8,685	193	150		37		5	115	9,057	39		2,766	14,732	518	0	6		3,239	646	2,593
1988	598	15	6,185	165	308		50		4	5	1,086	10		4,212	13,880	547	10	9		5,167	320	4,848
1989	54	4	5,950	153	249		88		3	198	20,216	31		1,860	11,482	346	23	36		2,456	292	2,163
1990	115	29	4,493	128	177	970,394	138	71	7	37	9,918			2,603	9,538	371	4	15		3,051	346	2,704
1991	0	17	4,713	119	313	11,441,302	144	0	0	10	1,890			1,845	9,420	179	71	72		2,328	450	1,878
1992	0	0	4,049	115	337	10,697,683	125	0	0	4	255			4,572	17,032	603	72	54	1,977	5,038	443	4,595
1993	0	0	5,484	128	440	12,038,774	129	0	4	4	181			6,254	21,415	518	0	71	1,987	6,769	2,374	4,395
1994	0	38	4,627	134	546	10,859,494	156	0	1	1	113	19	3,441	10,978	26,072	686	213	90	1,948	11,885	2,047	9,838
1995	80	52	3,773	106	883	13,039,899	132	0	0	14	1,150	46	5,027	8,045	25,650	464	1	177	2,020	9,298	3,399	5,899
1996	24	83	3,626	108	1,187	13,797,215	118	11	1	32	2,911	14	989	16,938	32,717	640	0	188	2,166	18,477	12,675	5,802
1997	73	60	3,019	95	1,652	14,827,349	130	2	5	717	42,319	818	88,179	14,252	45,572	1,121	1	133	2,149	17,708	11,256	6,453
1998	79	80	2,822	88	1,120	16,647,964	147	33	15	1,108	60,584	752	93,883	14,410	21,445	755	2	88	2,135	17,672	7,221	10,451
1999	60	149	356	41	1,540	18,332,090	130	48	5	2,667	88,551	1282	106,354	10,060	34,643	705	1	331	2,127	16,138	3,470	12,667
2000	69	55	1,229	49	940	21,713,196	129	4	2	1,337	61,160	493	57,679	9,645	37,331	649	3	120	1,993	12,666	3,516	9,149
2001	139	94	1,604	61	1,295	23,691,849	125	51	7	2,023	96,813	830	86,853	11,210	26,566	870	0	194	1,937	15,837	5,688	10,149
2002	381	30	1,660	52	525	27,533,505	123	4	2	2,447	104,437	635	69,700	10,387	25,350	641	0	235	1,916	14,646	4,052	10,593
2003	59	16	1,423	46	524	30,473,166	129	44	2	2,675	85,857	1236	127,835	14,102	23,442	836	0	85	1,650	18,741	2,972	15,769
2004	126	12	1,099	37	355	43,254,424	125	1	1	1,661	67,204	(347)	25,941	13,346	23,979	734	0	160	1,550	16,009	1,221	14,788
2005	(66)	(20)	1,040	38	(294)	45,649,694	125	(2)	1	1,002	39,054	(82)	13,883	(9,122)	(25,252)	549	0	183	NA	10,770	528	10,242
2006	(11)	(2)	112	14	(251)	37,630,188	123	(0)	0	337	19,306	(145)	9,199	(10,943)	(34,860)	574	0	53	NA	11,741	376	11,365

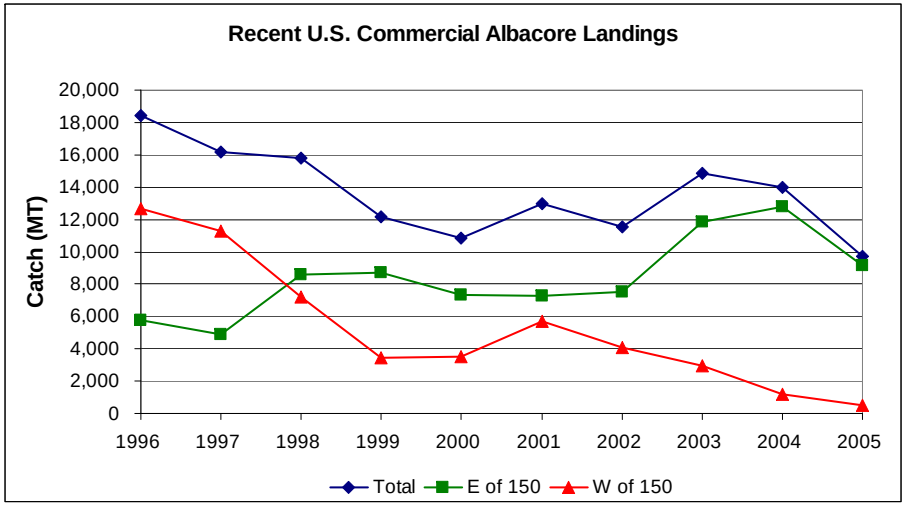
Landings Data



Relative Contributions of Commercial Fisheries

Year	Troll/Baitboat (A+G) catch (MT)	rel.%	All Other Commercial catch (MT)	rel.%
1996	16,962	92.0	1,469	8.0
1997	14,325	88.6	1,848	11.4
1998	14,489	91.6	1,323	8.4
1999	10,121	83.0	2,068	17.0
2000	9,714	89.6	1,122	10.4
2001	11,350	87.4	1,634	12.6
2002	10,768	93.1	795	6.9
2003	14,161	95.5	669	4.5
2004	13,472	96.2	528	3.8
2005	9,188	94.8	499	5.2
max	16,962	96.2	2,068	17.0
min	9,188	83.0	499	3.8
avg	12,455	91.2	1,195	8.8

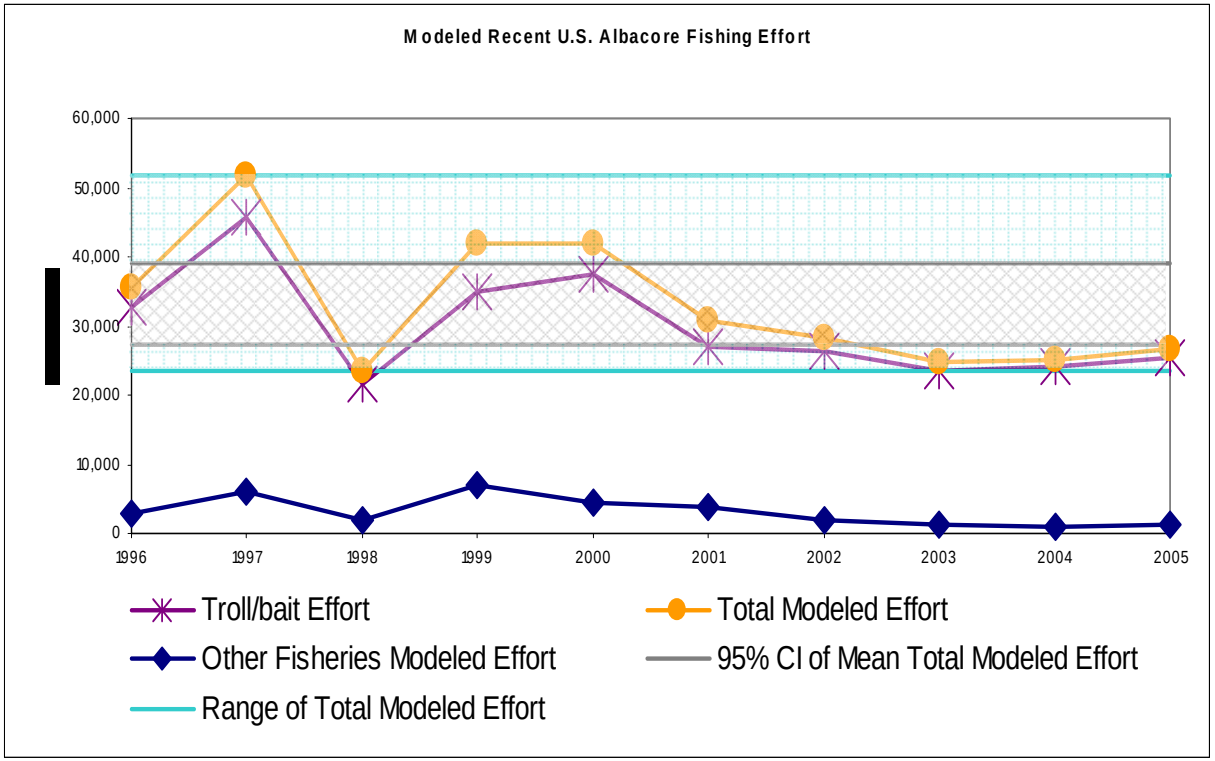




Modeled Effort North Pacific-wide

Modeled Effort (Commercial Fisheries Only, 1996-2005)

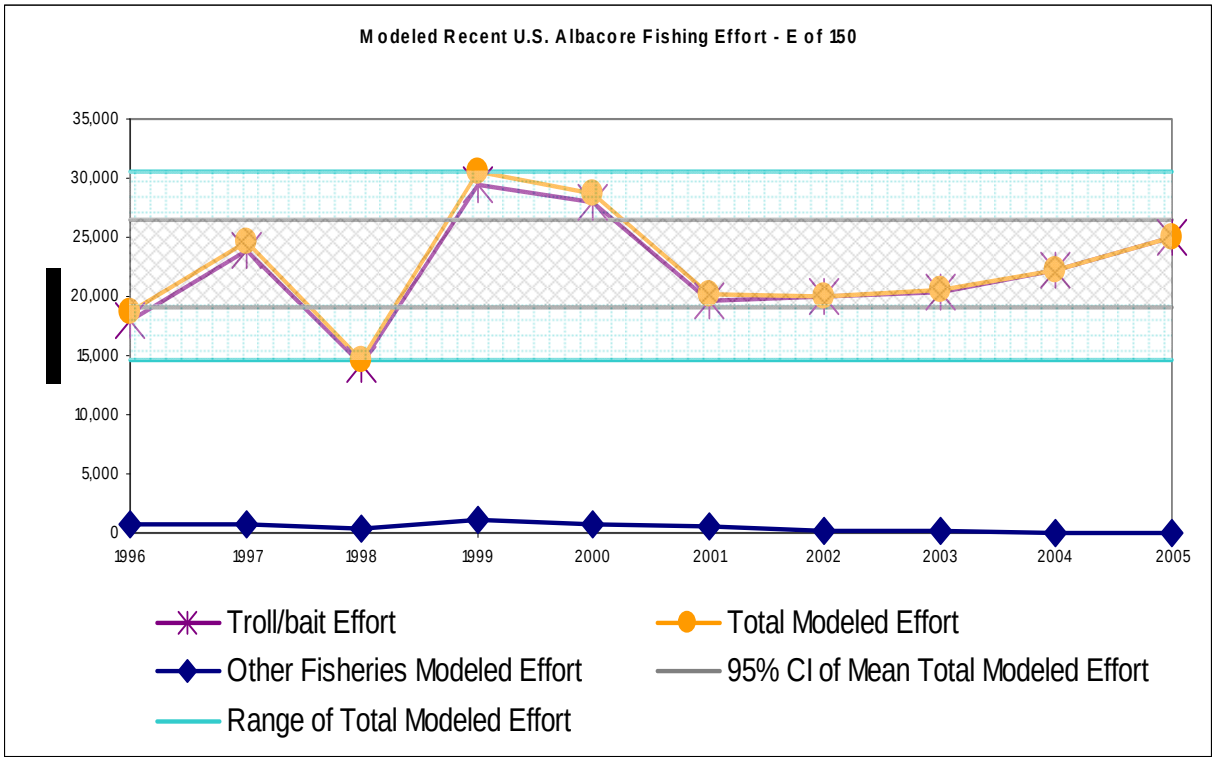
	Total Effort in Modeled Reference Days (Commercial Fisheries)			Band based on 95% confidence of average modeled total effort			Band based on range of total modeled effort	
Year	All Commercial Fisheries	Troll/bait only	Others	mean	mean - CI	mean + CI	min	max
1996	35,601	32,764	2,838	33,037	27,182	38,892	23,530	51,715
1997	51,715	45,806	5,909					
1998	23,530	21,562	1,968					
1999	41,972	34,851	7,122					
2000	41,940	37,597	4,342					
2001	30,768	26,896	3,872					
2002	28,221	26,280	1,941					
2003	24,652	23,540	1,112					
2004	25,154	24,206	949					
2005	26,816	25,435	1,381					



Modeled Effort E of 150

Modeled Effort (Commercial Fisheries E of 150 Only, 1996-2005)

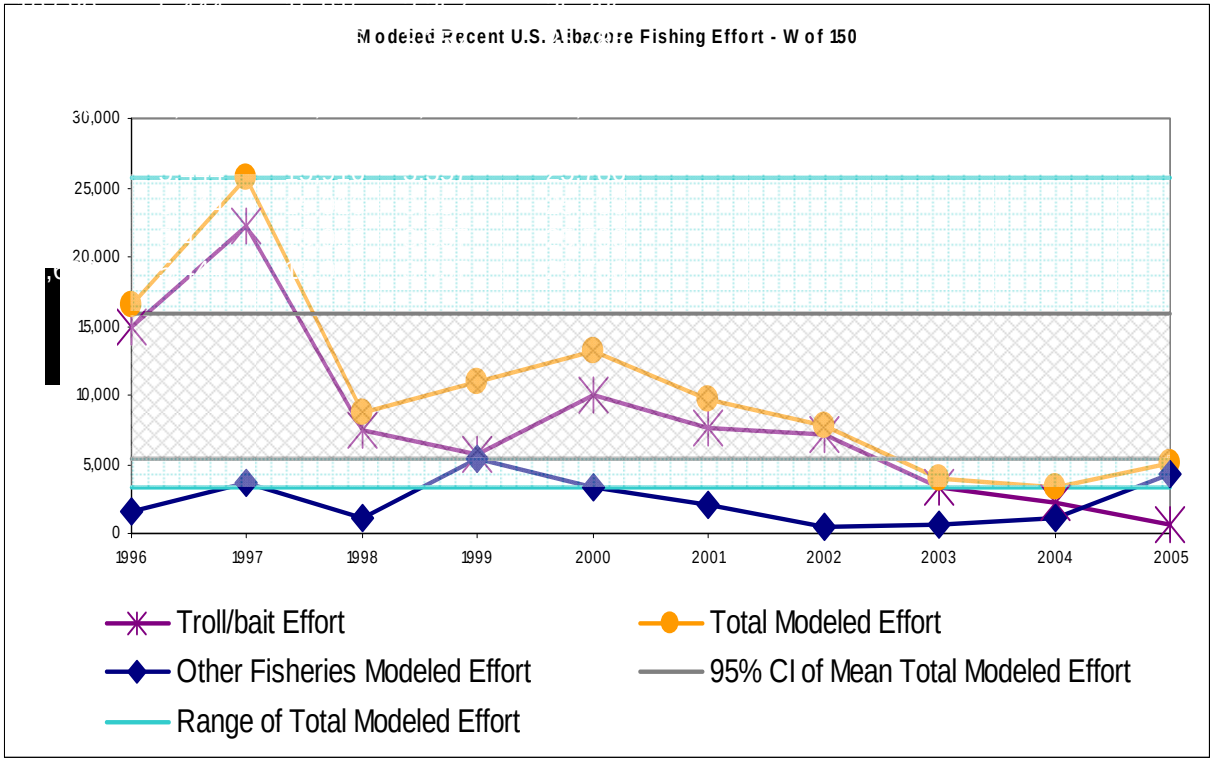
	Total Effort in Modeled Reference Days (Commercial Fisheries - E of 150)			Band based on 95% confidence of average modeled total effort			Band based on range of total modeled effort	
Year	All Commercial Fisheries	Troll/bait only	Others	mean	mean - CI	mean + CI	min	max
1996	18,616	17,957	659	22,769	19,062	26,477	14,578	30,512
1997	24,706	23,873	833					
1998	14,578	14,184	394					
1999	30,512	29,391	1,121					
2000	28,623	27,940	683					
2001	20,209	19,654	554					
2002	20,091	19,988	103					
2003	20,564	20,364	200					
2004	22,284	22,255	29					
2005	24,994	24,930	64					



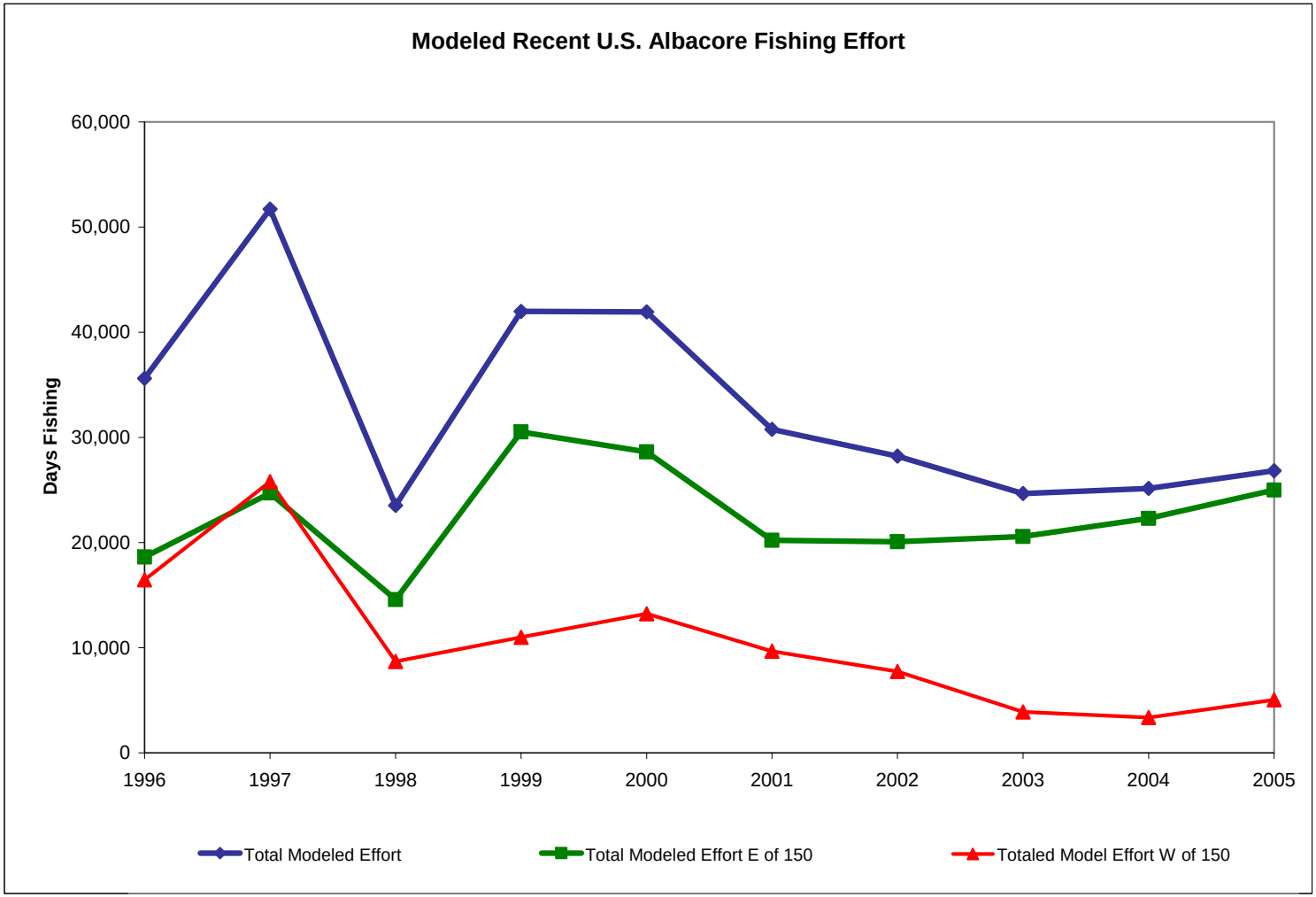
Modeled Effort W of 150

Modeled Effort (Commercial Fisheries W of 150 Only, 1996-2005)

	Total Effort in Modeled Reference Days (Commercial Fisheries - W of 150)			Band based on 95% confidence of average modeled total effort			Band based on range of total modeled effort	
Year	All Commercial Fisheries	Troll/bait only	Others	mean	mean - CI	mean + CI	min	max
1996	16,443	14,853	1,590	10,680	5,444	15,916	3,357	25,786
1997	25,786	22,166	3,620					
1998	8,685	7,495	1,189					
1999	10,994	5,667	5,327					
2000	13,217	9,924	3,293					
2001	9,667	7,572	2,095					
2002	7,737	7,222	515					
2003	3,901	3,275	626					
2004	3,357	2,177	1,180					
2005	5,040	687	4,352					

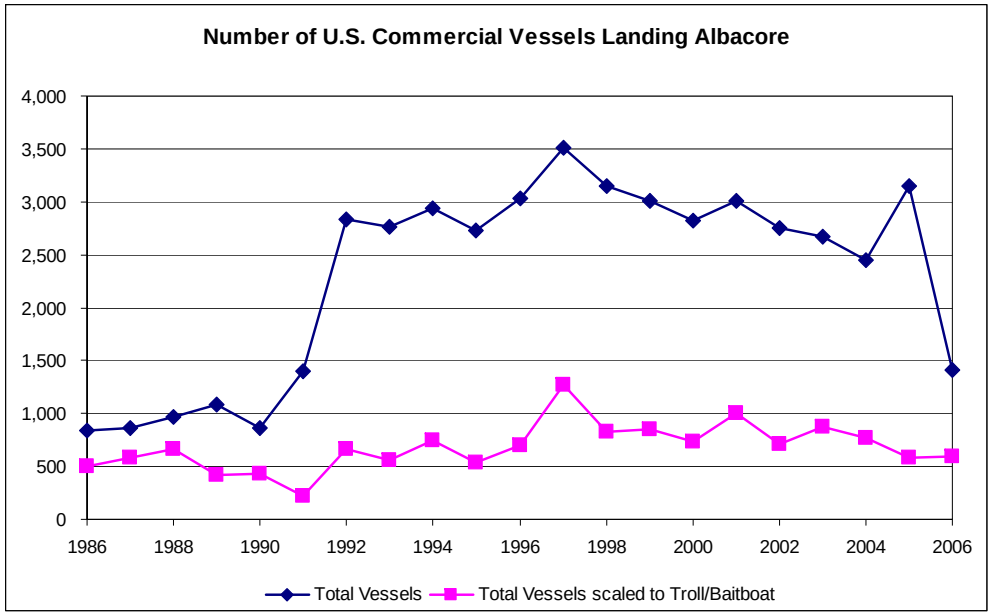


Modeled Effort by Area



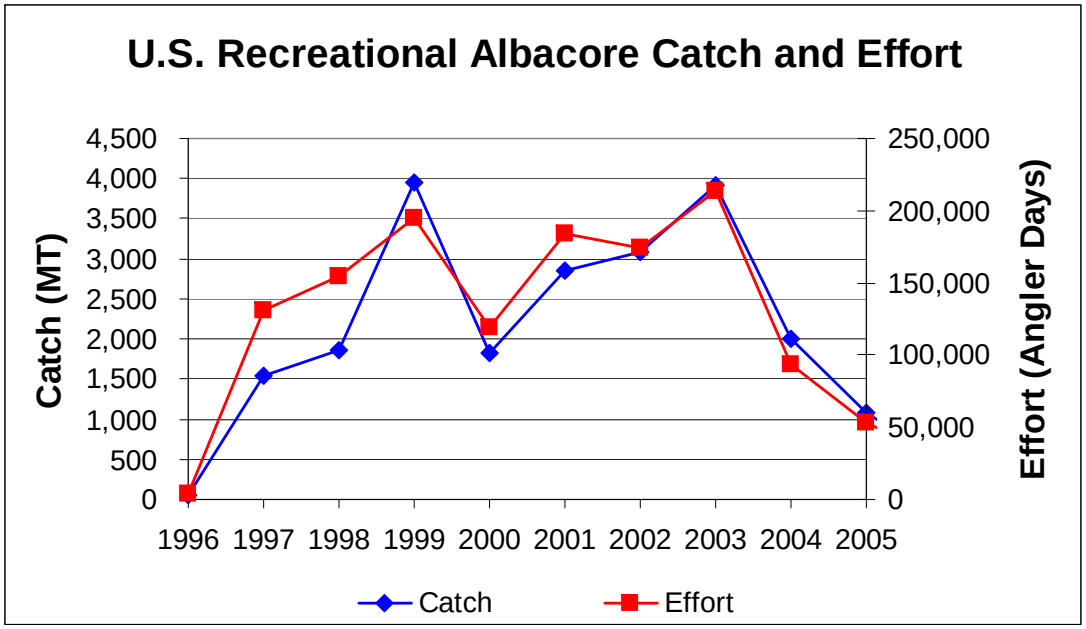
U.S. Commercial Vessels Landing Albacore

Year	Troll/Baitboat		Others			Total Commercial	
	vessels	Catch (mt)	vessels	reference vessels	Catch (mt)	vessels	reference vessels
1986	504	5,140	336	1	8	841	505
1987	548	2,924	315	30	161	862	578
1988	625	4,810	340	44	342	964	669
1989	356	1,914	726	58	312	1,082	414
1990	387	2,718	473	42	296	860	430
1991	179	1,845	1,225	46	473	1,404	225
1992	603	4,572	2,226	61	463	2,829	664
1993	518	6,254	2,248	42	511	2,766	560
1994	686	10,978	2,252	55	887	2,938	741
1995	469	8,125	2,258	64	1,113	2,727	533
1996	641	16,962	2,393	56	1,469	3,034	696
1997	1,127	14,325	2,379	145	1,848	3,506	1,272
1998	759	14,489	2,385	69	1,323	3,144	828
1999	709	10,121	2,303	145	2,068	3,012	854
2000	654	9,714	2,173	75	1,122	2,827	729
2001	881	11,350	2,130	127	1,634	3,011	1,008
2002	665	10,768	2,093	49	795	2,758	714
2003	840	14,161	1,827	40	669	2,667	879
2004	741	13,472	1,713	29	528	2,454	770
2005	553	9,188	2,592	30	499	3,145	583
2006	575	10,954	840	16	306	1,415	591



Recreational Fishery Data

Recreational (sum of private and CPFV)		
Year	Catch MT	Effort Ang. Days
1996	46	3,900
1997	1,535	130,498
1998	1,860	154,467
1999	3,949	194,905
2000	1,830	118,839
2001	2,854	183,666
2002	3,082	174,137
2003	3,911	213,692
2004	2,009	93,145
2005	1,083	52,937
2006	481	28,505
mean	2,058	122,608



Summary (and Recommendations)

- Consider commercial data only with respect to the IATTC and WCPFC resolutions
- 1996-2005 may be an appropriate time period for “recent”
- Troll/Baitboat fishery accounts for ~91% of the landings during 1996-2005
- Effort accounting for the remaining 9% of the commercial landings can be estimated based on scaling CPUEs to the Troll/baitboat CPUE
- A band encompassing the range of effort estimates should be used to describe the uncertainty associated with interannual variation and the effects of the non-target fisheries
- Additional metrics to describe recent effort include the number of U.S. vessels landing albacore and the U.S. component of North Pacific-wide fishing mortality based on the most recent stock assessment

Agenda Item J.3.c
Supplemental HMSAS Report 2
April 2007

HIGHLY MIGRATORY SPECIES ADVISORY SUBPANEL REPORT ON ALBACORE FISHING EFFORT CHARACTERIZATION

The Highly Migratory Species Advisory Subpanel (HMSAS) amends its original report which defined the current level of effort for the U.S. albacore fishery by all gear types in the Inter-American Tropical Tuna Commission (IATTC) jurisdiction of the North Pacific as, "a range from 1996-2006 of the number of commercial vessels that have landed any amount of albacore over that time period. For the U.S. fishery it is recognized that the U.S. has a recreational harvest of albacore that must be recognized but is not currently included in the definition of current effort."

Instead, the HMSAS recommends that the current level of effort for the U.S. albacore fishery within the IATTC's jurisdiction of the North Pacific be defined as "a range from 1996-2006 of the number of *troll/baitboat* vessels that have landed any amount of albacore over that time period. *The US also has minor albacore harvest by other fleets that must be considered. Other fleets with minor albacore catch include, but are not limited to longline, gillnet, purse seine, and handline fleets.* The U.S. also has a recreational harvest of albacore that must be recognized but is not presently included in the definition of current effort."

In the interest of informed decision-making and improved management, the HMSAS suggests that the Highly Migratory Species Management Team forward all relevant effort characterization information to the U.S. delegations that will be attending international sessions of the IATTC and the Western and Central Pacific Fisheries Commission. This information includes but is not limited to various effort characterization approaches such as vessel days, recent U.S. landings, fleet descriptions, etc.

PFMC
04/05/07

HIGHLY MIGRATORY SPECIES MANAGEMENT TEAM REPORT ON ALBACORE FISHING EFFORT CHARACTERIZATION

In 2005, the Inter-American Tropical Tuna Commission (IATTC) and Western and Central Pacific Fisheries Commission (WCPFC) adopted resolutions for conservation of North Pacific albacore based on concerns that recent fishing effort may be above levels that are sustainable in the long term. Both resolutions call upon their members and cooperating parties to take necessary measures to ensure that the level of fishing effort by their vessels fishing for North Pacific albacore is not increased beyond current levels, and to report all catches of North Pacific albacore to the Commissions at 6 month intervals. In addition, the WCPFC resolution requires that: "Fishing effort shall be reported in terms of the most relevant measures for a given gear type, including at a minimum for all gear types, the number of vessel-days fished."

The Council directed the Highly Migratory Species Management Team (HMSMT) to characterize recent U.S. albacore fishing effort to provide a baseline for compliance with the terms in the resolutions. The HMSMT would like to emphasize that the assignment was to identify recent levels of effort which could potentially be used by the Council and the U.S. delegation in complying with the resolutions, however not to define limits to be used to regulate the fisheries on national or international levels.

The Southwest Fisheries Science Center (SWFSC) staff, in cooperation with the HMSMT, have compiled data on albacore landings and directed fishing effort as well as incidental take of albacore in non-directed fisheries. A model was developed to combine effort estimates in vessel-days for the fishery making the largest percentage of commercial landings of albacore (the surface troll/baitboat fishery accounting for roughly 92% of recent U.S. commercial landings) with effort estimates for the minor commercial fisheries landing albacore incidentally. The HMSAS has subsequently proposed that the number of U.S. commercial vessels fishing for albacore in recent years be used as a surrogate for recent fishing effort. The Scientific and Statistical Committee (SSC) reviewed both the proposal from the HMSAS and the analysis put forth by the SWFSC and HMSMT and found neither approach satisfactory. The SSC alternatively proposed that recent U.S. fishing mortality estimates be partitioned out of the overall international fishing mortality (a product of the stock assessment) based on the U.S. relative proportion of the overall catch.

The HMSMT recognizes that there are a number of ways to describe fishing effort and that each approach described above has inherent problems. However, irrespective of the approach taken, the HMSMT feels it is important to recognize year-to-year variability. The HMSMT supports the use of a band to describe average recent effort. For example, for the vessel-days analysis prepared by the SWFSC, effort estimates for the average modeled effort were derived and a band of the range of estimates and the average ± the 95% confidence interval of the average were presented.

1) As the SSC pointed out, standardizing fishing effort to a single metric of vessel-days is problematic for widely differing fisheries; CPUEs for target and non-target fisheries can differ by greater than an order of magnitude, and non-target fisheries in particular show high year-to-year variability in CPUE. Given that the WCPFC resolution specifically requested that effort in

vessel-days be reported, the SWFSC and HMSMT analyses attempted to address this difficulty, however uncertainties remain.

2) The number of active vessels landing albacore may not provide a reliable measure of effort because not all vessels have the same capacity, operate for the same number of days, nor have the same efficiency. As with a vessel-day analysis, comparing vessel number for target and non-target fisheries is problematic.

3) While the resolutions call for submission of catch and effort data at 6 month intervals, estimates of fishing mortality derived from stock assessments are not likely to be available in time for use in management decision making. The current schedule for completing North Pacific albacore stock assessments is once every two years. Based on the latest stock assessment (completed in 2004), international fishing mortality estimates are available through 2003, with estimates for the last couple of years typically highly uncertain.

The HMSMT reviewed analyses of recent albacore fishing effort based on vessel-days, and number of vessels, and could work with the SWFSC stock assessment scientists to examine the U.S. partial fishing mortality levels through 2003. The HMSMT recommends that while not any one of the these measures alone provides a definitive estimate of recent albacore fishing effort, the Council could consider all of the information presented as descriptors of recent albacore fishing effort. The HMSMT feels that vessel number may be the least informative of these metrics for describing fishing effort.

In agreement with the HMSAS, the HMSMT recommends that the U.S. recreational fisheries not be considered in the context of compliance with the IATTC and WCPFC resolutions given the relatively low harvest and the Council's proposed recreational management measures.

PFMC
04/05/07

Agenda Item J.3.c
Supplemental SSC Report
April 2007

SCIENTIFIC AND STATISTICAL COMMITTEE REPORT ON ALBACORE FISHING EFFORT CHARACTERIZATION

The Scientific and Statistical Committee (SSC) discussed the Highly Migratory Species Management Team (HMSMT) document "Estimating recent effort for the U.S. fisheries landing albacore," agenda item J.3.b, and the Highly Migratory Species Advisory Subpanel (HMSAS) report, agenda item J.3.c. The requirement was to demonstrate that U.S. fishing effort for albacore tuna is not increasing. Neither method was satisfactory to the SSC. The SSC considers that, for this application, effort is being used as a surrogate for fishing mortality.

The HMSAS proposal provides a raw measure of effort that could not be used to demonstrate trends in fishing mortality.

Problems with the HMSMT document are more complex. The HMSMT attempted to account for all U.S. effort from nine separate fisheries. The single fishery with the most landings (79.1%) was the Troll/Baitboat fishery. This was used as the standard of comparison for other fisheries. For fisheries with effort data, effort was scaled based on the ratio of catch per unit of effort (CPUE). Fisheries without effort data were assumed to have CPUE equivalent to the Troll/Bailboat fishery. Effort was then summed across all fisheries. The major problem with this approach is the difficulty of comparing CPUE across widely differing fisheries especially in light of the high year-to-year variability in the CPUE data.

The SSC suggests an alternative procedure. First, fishing mortality for the U.S. fisheries (U.S. partial F) should be partitioned out of the overall international fishery mortality. If the U.S. partial F is stable or decreasing then the criterion of no increasing fishing mortality is satisfied. If the U.S. partial F is increasing, the segment of the fishery that is responsible can be identified by analyzing trends in fishing mortality by gear type.

PFMC
04/03/07

AMERICAN ALBACORE FISHING ASSOCIATION
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March 25, 2007

Dr. Donald McIsaac
Executive Director
Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101
Portland, OR 97220

Re: U.S. North Pacific Albacore Fishing Effort Characterization

Dear Dr. McIsaac,

I am writing on behalf of the American Albacore Fishing Association (AAFA), a nonprofit corporation of over two dozen American commercial fishing vessels that participate in the troll and/or pole & line North Pacific albacore fishery,[1] to express our support for the Council's efforts to characterize albacore fishing effort in accordance with IATTC Resolution C-05-02.[2]

AAFA acknowledges and supports the Council's efforts to develop the information necessary to characterize current U.S. fishing effort for North Pacific albacore. In addition, we appreciate the efforts of the HMS Management Team and Advisory Subpanel toward such goal and, more particularly, express our support for the "*effort band*" concept being developed and refined through the Southwest Fisheries Science Center (SWFSC).

We urge the Council to adopt for public review, the SWFSC's "*effort band*" characterization of historical U.S. North Pacific albacore fishing effort.

Our collective experience, through decades of fishing albacore off the West Coast, has shown us that factors other than mere abundance of fish can play significant roles in the

[1] AAFA is founded upon the belief that, by promoting the environmental benefits of the troll and/or pole & line fisheries and promoting the health benefits of tuna consumption, the economic viability of these traditional troll and/or pole & line fisheries can be sustained.

[2] In IATTC Resolution C-05-02, the member countries agreed to ensure that the total level of fishing effort for North Pacific albacore tuna in the Eastern Pacific Ocean not be increased beyond current levels, and to take necessary measures to ensure that the level of fishing effort by their vessels fishing for North Pacific albacore tuna is not increased;

determination of effort and catch. We believe that a well-derived and appropriately defined "*effort band*" would allow for accepted fishery variations due to market conditions, weather, gear type, and other conditions and variables.

In order to prevent the upper level of such an "*effort band*" from becoming an annual target for the fishery, any unused "effort" should be allowed to accrue to subsequent years. This practice would eliminate any effort "race" and should ensure future effort levels in accordance with historical effort.

AAFA has attended a number of Council, HMS Management Team, and HMS Advisory Subpanel meetings and actively participated in the discussion of management measures in efforts to ensure the long term sustainability of the North Pacific albacore stock.

I believe that continued efforts in compliance with the IATTC Resolution C-05-02, and the development of appropriate fishery management measures, are essential to protecting North Pacific albacore stock and the long standing tradition of albacore fishing that our members continue today.

I greatly appreciate having the opportunity to comment on this matter. If you have any questions or would like to discuss this matter further, please do not hesitate to contact me at (619) 941-2307.

Sincerely,

/Jack Webster/

Jack Webster, F/V Millie G.
AAFA president

YELLOWFIN TUNA OVERFISHING

On October 25, 2006, Council Chairman Hansen received a letter from the National Marine Fisheries Service (NMFS) Southwest Regional Administrator discussing their determination, as required by the Magnuson-Stevens Fishery Conservation and Management Act (MSA), that overfishing is occurring on the Eastern Pacific Ocean (EPO) yellowfin tuna stock. At that time, Section 304(e) of the MSA (16 U.S.C. 1854(e)) applied. It states that within one year of such a notification, "…the appropriate Council … shall prepare a fishery management plan, plan amendment, or proposed regulations for the fishery to which the identification or notice applies…" However, a new section was inserted in the MSA (§304(j)) when it was reauthorized, which likely applies to yellowfin tuna. The section reads:

> (i) INTERNATIONAL OVERFISHING.—The provisions of this subsection shall apply in lieu of subsection (e) to a fishery that the Secretary determines is overfished or approaching a condition of being overfished due to excessive international fishing pressure, and for which there are no management measures to end overfishing under an international agreement to which the United States is a party. For such fisheries—
>
> (1) the Secretary, in cooperation with the Secretary of State, immediately take appropriate action at the international level to end the overfishing; and
>
> (2) within 1 year after the Secretary's determination, the appropriate Council, or Secretary, for fisheries under section 302(a)(3) shall—
>
> (A) develop recommendations for domestic regulations to address the relative impact of fishing vessels of the United States on the stock and, if developed by a Council, the Council shall submit such recommendations to the Secretary; and
>
> (B) develop and submit recommendations to the Secretary of State, and to the Congress, for international actions that will end overfishing in the fishery and rebuild the affected stocks, taking into account the relative impact of vessels of other nations and vessels of the United States on the relevant stock.

This new language has several implications. First, it does not reference the development of a fishery management plan or plan amendment (as does section 304(e)), indicating that an FMP amendment need not be prepared to address overfishing. Instead, the Council *shall* develop recommendations for domestic regulations. Second, the issue is raised whether a proposal for domestic regulation is compulsory or if a Council may recommend that no such regulations are necessary, for example, if existing domestic regulations are considered sufficient. Third, it states the Council shall submit recommendations through the Secretary (NMFS) to, in this case, the Inter-American Tropical Tuna Commission (IATTC) for international actions to end overfishing. It is unclear whether such recommendations should be proposed just once or on an ongoing basis. (Under Agenda Item J.5, the Council will discuss procedures for the ongoing provision of advice to regional fishery management organizations such as the IATTC.)

The Council should also consider recent and ongoing activity by the IATTC with respect to yellowfin tuna overfishing. On February 5-6, 2007, the IATTC held an ad hoc meeting to discuss conservation measures for both yellowfin and bigeye tunas. Attachment 1 is a summary of the meeting prepared on behalf of the U.S. delegation. Attachment 1 includes the proposal put forward by the U.S. delegation to address overfishing of bigeye and yellowfin tuna. Attachment 2 is a background paper prepared by IATTC staff discussing past and potential conservation

measures to address overfishing. Attachment 3, also prepared by IATTC staff, presents information on catches of yellowfin tuna in 2006. As outlined in that paper, a key issue is the substantial decline in the average weight of yellowfin tuna being caught, especially in purse seine fisheries targeting floating objects (generally, artificial fish aggregating devices, or FADs, deployed by the purse seine vessels themselves). It is also worth noting that West Coast landings of yellowfin tuna—in 2005, 286 mt by commercial fisheries, according to the highly migratory species (HMS) Stock Assessment Fishery Evaluation (SAFE)—are tiny in comparison. As discussed in Attachment 1, the ad hoc meeting made several recommendations for further analysis and deferred further discussion of conservation measures until after the next round of stock assessments to be produced in May 2007. (The 8th Working Group on Stock Assessments meeting is currently scheduled for May 7–11.) Thus, at this time it is very difficult to predict the types of measures the IATTC may adopt to address overfishing of these stocks. Any such action will occur at the June 18–29, 2007, annual meeting in Cancun, Mexico, which immediately follows the June Council meeting.

Because of these developments, at their February 7–8, 2007, meeting the Highly Migratory Species Advisory Subpanel and Highly Migratory Species Management Team (HMSMT) strongly recommended that the Council defer the adoption of alternatives to address yellowfin tuna overfishing from the April meeting to a later Council meeting. Instead, at this time the Council may wish to discuss and obtain guidance on the implications of section 304(i) in the reauthorized MSA. As part of this discussion, the Council could clarify what domestic regulations, if any, would be appropriate. Under Agenda Item J.6 the Council will have the opportunity to formulate recommendations to the U.S. delegation for the June 2007 annual IATTC meeting for conservation measures the delegation should propose for adoption. Under the current agenda item, the Council may wish to clarify whether that action would satisfy section 304(i)(2)(B) (assuming the Secretary determines this section is applicable to yellowfin tuna), considering that such recommendations may be made on an ongoing (multi-annual) basis, and, if not, what additional actions would be necessary. Based on Council direction, the HMSMT will develop a preliminary set of alternatives or proposals for the Council to consider and adopt for public review at a future Council meeting.

Council Action:

Consider statutory changes and pending IATTC action that may affect the Council's response to yellowfin tuna overfishing, and provide guidance on the next appropriate steps to address the issue.

Reference Materials:

1. Agenda Item J.4.a, Attachment 1: Summary – Inter-American Tropical Tuna Commission's February 2007 Meetings.
2. Agenda Item J.4.a, Attachment 2: Document AH-05, Review of IATTC Management. Measures for Tunas in the Eastern Pacific Ocean, and Current Management Options.
3. Agenda Item J.4.a, Attachment 3: Document AH-04, Catches of Yellowfin Tuna in 2006.

Agenda Order:

a. Agenda Item Overview — Kit Dahl
b. Reports and Comments of Advisory Bodies
c. Public Comment
d. **Council Action:** Identify a Course of Action to Address Yellowfin Tuna Overfishing

PFMC
03/19/07

Summary – Inter-American Tropical Tuna Commission's February 2007 Meetings

The Inter-American Tropical Tuna Commission (IATTC) held an ad hoc meeting of the Commission, February 5 and 6, 2007. Subsidiary meetings rounded out the week and included the Working Group on Finance, and the Bycatch Working Group. (Current IATTC information may be found on the Commission's website at: www.iattc.org.)

Ad Hoc IATTC Meeting:

The focus of this meeting was to explore future options for the conservation and management of bigeye and yellowfin tunas. The Secretariat (Dr. Allen) made a presentation based on preliminary 2006 yellowfin tuna catch data. Yellowfin tuna catches are in significant decline and possible reasons for this include low average size of fish caught, lower recruitment, overfishing, and decreased catchability. The Untied States put forward a proposal of conservation measures for analysis (Appendix 1). Though many management options were discussed, the Commission concluded that in-depth discussion and proposals of resolutions should wait until after the round of stock assessments due in May, 2007. In the end the Plenary recommended that the IATTC Scientific Staff provide the following information and analysis:

- Work to refine critical areas for juvenile bigeye tuna and juvenile yellowfin tuna and consider the conservation value of closing these areas to purse seine fishing periodically or year round;

- Produce estimates of Total Allowable Catch (TAC) limits both on a single year and a multi-year basis;[1]

- Compile the practical and administrative issues raised regarding potential use of per country catch allocations or Individual Fishing Quotas (IFQs) for vessels;

- Update on statistics from fishing year 2006 in light of the current management Resolution;

- Consider the current fishing capacity in the eastern Pacific Ocean (EPO) and examine the relationship to conservation measures needed at current capacity to the conservation measures that would be necessary if the Commission implemented the Capacity Plan and reduced the purse seine fleet to the target capacity levels;

- Prepare a report of implementation of VMS requirements by Parties;

- Research fishing methods and gear that may increase escapement of small fish;

- Investigate the impact of fishing effort on adult stocks of yellowfin tuna (this is a part of the IATTC scientific standard analysis); and

[1] Several conservation scenarios were discussed contemplating using critical juvenile areas in concert with a TAC.

- Summarize available information on the impacts from planting of Fish Aggregating Devices (FADs), describe areas were FADs should not be placed because of the fish of catching juvenile tunas, determine the increase in vulnerability of tunas since the development of the FAD fishery, and determine the number of FADs placed.

8th Working Group on Finance:

The working group examined a series of factors regarding the formula which constitutes a contribution formula. Discussions included an expansion of the categories of Gross National Income (GNI) per capita in the formula to better express the differences between the different levels of economic development of the members. The delegation of El Salvador presented new categories for consideration, but this did not obtain consensus. There was recognition by the meeting that there was value in having the weighting factors be equivalent to GNI categories. A proposal was made to base the catch element on an average of several years instead of the most recent year, but no agreement was reached on this. While there was consensus that the expansion of GNI categories was a step forward, discussion at the meeting revealed that there remain some issues to be resolved before it could be agreed. Some members believed that the expansion of the range of GNI categories should be associated with an increase of the base fee, or a reduction or elimination of the weight given to utilization as currently defined. Other members, while supporting an expansion of the GNI categories, stressed the importance of retaining the element of utilization as a significant factor in the formula. Some of the alternatives were examined using a model spreadsheet.

The balance in the formula between the weight given to base fees and operational fees was also an issue that needed further attention in considering the entirety of the formula. There was also an understanding that, if a contribution formula could be agreed at this stage, it would be reviewed at such time as the entry into force of the Antigua Convention. The Working Group on Finance did not reach consensus on a formula to recommend to the Commission. The Working Group on Finance will meet again in June 2007.

6th Bycatch Working Group:

Sea turtles

Martin Hall presented a regional program to reduce sea turtle bycatch. Preliminary statistics suggest that use of circle hooks reduces turtle hooking rate by about 2 turtles per 1000 hooks. Additionally, that use of polypropylene line produces more entanglements than monofilament. Martin noted that contrary to the results in the rest of the region, circle hooks have a significantly reduced catch rate in the Peruvian and Ecuadorian mahi-mahi fisheries, so efforts to introduce circle hooks into those mahi-mahi fisheries are unlikely to be successful.

Spain reported that their swordfish fishery results in an average of 8 sea turtle mortalities per million hooks. They also noted that with respect to bait, turtles tend to swallow hooks more deeply when hooks are baited with squid versus other baits.

The United States reminded the Bycatch Working Group (BWG) that the Resolution regarding a *Program to Mitigate the Impact of Fishing on Sea Turtles* (C-04-07) will expire this year. The United States also stated that they would resubmit their Sea Turtle Resolution in June 2007.

Seabirds

The BWG recommended that the Stock Assessment Working Group continue progress on developing an assessment of the impact of incidental catch of seabirds resulting from the activities of all the vessels fishing for tunas and tuna-like species, in the EPO. This assessment should include but is not limited to the following: collaborations with various seabird experts, such as BirdLife International and the Agreement on the Conservation of Albatrosses and Petrels (ACAP) and its advisory bodies; identification of fisheries and areas of overlap with breeding and foraging seabird species where incidental catch may potentially occur; available information from CPCs on the levels of incidental catch of seabird species in its IATTC fisheries.

The BWG recommended that the Stock Assessment Working Group consider what appropriate and cost-effective seabird mitigation measures might be for pelagic longline vessels fishing in the IATTC Area. This consideration should include coordination with the Western and Central Pacific Fishery Commission (WCPFC), which recently adopted a binding conservation measure for seabird mitigation measures. This coordination with WCPFC should include its Scientific Committee and Technical and Compliance Committee, which are charged with arriving at minimum technical specifications for these measures.

Further the BWG recommended that the Stock Assessment Working Group work with other Region Fishery Management Organizations (e.g. WCPFC, ICCAT, CCAMLR, CCAMLR, IOTC) in establishing consistent approaches to the incidental catch of seabirds, such as in the areas of assessments, monitoring incidental catch, and the development and use of effective and practicable mitigation measures.

Sharks

The BWG discussed the current *Resolution on the Conservation of Sharks Caught in Association with Fisheries in the Eastern Pacific Ocean* (C-05-03). The Secretariat reported that only the United States has submitted the required annual reports. The BWG asked that all Parties submit their required shark data and the Joint Working Group on Compliance review this delinquency.

Other Bycatch

Spain presented results of research on numerous experimental models of FAD construction. Because so many different designs were used, sample sizes were small, but results for some designs suggested a win-win result, producing more tuna and reduced bycatch (including only one tangled turtle and no mortalities.)

Spain presented initial results of research that attempted to use acoustic instruments to determine species and size composition of schools associated with FADs.

Other issues:

- 2007 Meeting Venue- Mexico and Panama made a joint announcement that the 2007 annual meetings of the AIDCP and IATTC in June will take place in Cancun, Mexico. Panama will host the meetings in June 2008.

- Several sessions of the virtual working group on the selection of the next Director of the IATTC were held. Parties still have not completely agreed on the wording for a vacancy announcement, but expect the two parties with remaining issues to work toward a mutual

agreement in the immediate future. Parties would like to interview candidates before the annual meetings in June 2007.

- No decisions were made with respect to the selection of a Chair for the June 2007 Commission meetings. This issue was very contentious last year and accounted for a significant amount of lost meeting time. However, one of the two parties that competed for Chair last year will be the host of this year's meeting, which may reduce resistance to a Mexican Chair for the 2007 meetings.

Appendix 1 **February 2007**

United States Proposal of Conservation Measures for Analysis

The goals of this proposal are to:

A. Control yellowfin total catch,
B. Reduce mortality of small yellowfin tuna and bigeye tuna.

Proposal:

1. This proposal is applicable in 2008, 2009, and 2010 to all purse-seine vessels and large scale tuna longline vessels (LSTLVs) fishing for yellowfin, bigeye, and skipjack tunas.

2. The area bounded by 90°W meridian, 120°W meridian, 6°N parallel and 10°S parallel shall be closed to all purse-seine fishing for tunas in the eastern Pacific Ocean (EPO) for the duration of this proposal.

3. A total allowable catch (TAC) for yellowfin tuna in the Inter-American Tropical Tuna (IATTC) Convention Area shall be established at the recommendation of the Director.

4. When 75% of the TAC of yellowfin tuna catch is reached, the area(s) identified by the Secretariat as having increased small yellowfin tuna catches shall be closed to all purse-seine fishing for tunas and yellowfin tuna landings from outside the closed area will be limited to 15% of the total landings.

5. Current control techniques for longline fishing will be continued and the catch levels will be reviewed in light of current stock assessments.

INTER-AMERICAN TROPICAL TUNA COMMISSION
COMISIÓN INTERAMERICANA DEL ATÚN TROPICAL

AD-HOC MEETING

LA JOLLA, CALIFORNIA (USA)
5-6 FEBRUARY 2007

DOCUMENT AH-05

REVIEW OF IATTC MANAGEMENT MEASURES FOR TUNAS IN THE EASTERN PACIFIC OCEAN, AND CURRENT MANAGEMENT OPTIONS

1. INTRODUCTION

This paper has been prepared to provide the Commission with a summary of the management measures for yellowfin and bigeye tunas that it has adopted since 1966, and to review options it could consider for the future.

Section 2 reviews management measures applied from 1966 until 2007, and Section 3 summarizes the results of the Workshop on Management Strategies, held in October 2006. The final section discusses options for future management, taking account of the most recent recommendations.

2. REVIEW OF MEASURES APPLIED BY THE IATTC

During 1966-1979, the IATTC successfully used a closure of the purse-seine fishery in the Commission's Yellowfin Regulatory Area (CYRA) after a total allowable catch (TAC) limit for yellowfin tuna was reached, and subsequently used similar measures during 1998-2001. There were a number of elaborations on the theme of a closure once the yellowfin TAC was estimated to have been reached; probably the most significant for the purposes of this paper were special allowances for (a) small vessels and developing countries without well-developed fisheries to take additional amounts of yellowfin, and (b) vessels fishing for other species to take a small amount (less than 15%) of yellowfin as an incidental catch after the TAC had been reached. The allowances were first introduced in 1973 and became more significant over time until 1979. The growth of the allowances reflected the interest of the coastal countries in expanding their fisheries.

During the period many nations established 200-mile exclusive economic zones (EEZs), and this led to negotiations about quotas being allocated to participants. The negotiations were ultimately unsuccessful, and their failure led to a lack of agreement on the conservation of yellowfin. Between 1980 and 1986 it was not possible to reach agreement on the implementation of conservation measures; each year a TAC was agreed, but not implemented. The fleet size declined after 1981, and during 1988-1997 the catches were less than the recommended TACs. By the time conservation measures became necessary again in 1998, the composition of the fleet had changed dramatically and the issue of special allocations of catch was not taken up again.

In the years preceding 1968 the fishery expanded offshore, and it was thought that estimates of the maximum sustainable yield (MSY) based on historical data were underestimated. To test this, the Commission established a three-year adaptive management program: in 1969 it set a TAC that was greater than the estimated MSY, with the proviso that the fishery would be closed if the catch rate dropped significantly. This trial established that the expansion of the fishery was associated with greater production from the stock, and subsequent TACs were set at a base conservative level to which increments could be added, at the discretion of the Director, if the data showed that such increments would not harm the stock. This proved to be a useful approach to allow real-time adjustments of the TAC. After conservation measures became necessary again, the use of a base TAC and discretional increments continued from 1998 to 1999 and in 2001. The history of those increments is shown in Table 1.

The closure of the CYRA was generally a successful management measure because:

- 90% of the yellowfin catch was taken by purse-seine,
- fishing outside the CYRA caught large yellowfin, catches of which had a relatively small impact on the stock,
- purse-seine fishing that targeted skipjack was not affected by the closure.

In 1998, the IATTC introduced its first measure to control purse-seine catches of bigeye by prohibiting sets on floating objects after 45,000 t of bigeye had been taken (Resolution C-98-05). A similar measure was adopted in 1999 (Resolution C-99-06), and provisionally for 2000 (Resolution C-99-09).

However, a very strong recruitment of bigeye in 1998 produced very large catches in 2000, which would have led to the fishery on floating objects being closed in the middle of the year, with very serious repercussions on the catches of skipjack. Consequently, the Commission re-visited Resolution C-99-09, and eventually closed the fishery on floating objects from 15 September to 15 December 2000 (Resolution C-00-02).

During the brief period when management measures were in force for bigeye, two difficulties arose. The first was determining in advance the appropriate TAC for bigeye; this was particularly important because bigeye formed a lesser component of the purse-seine catches in sets on floating objects. While stopping fishing for bigeye too early might not have been serious from the point of view of catches of bigeye, it would have been a more serious issue if skipjack catches were curtailed unnecessarily.

The objectives of management measures for bigeye, and the means of achieving them, have varied. During the 1990s, the initial concern with purse-seine catches of bigeye on fish-aggregating devices (FADs) was that the fishery particularly selected small bigeye. The Commission tended to equate purse-seine caught bigeye with small or immature bigeye, and restrictions were aimed at reducing all purse-seine catches. However, in 2000, the bigeye taken by purse-seine vessels were medium-sized, indicating that the fishery could catch a wider range of sizes than hitherto thought. In 2001, the bigeye closure was modified to be triggered by the estimated catch of bigeye less than 60 cm in length (Resolution C-01-06). There was also an emerging problem in monitoring sets on floating objects: even with vessels carrying an observer, there was a trend for vessels to make sets near floating objects and to claim that those sets were on unassociated schools.

In addition, the use of FADs, which were spread throughout the fishery, started to produce catches of small bigeye and, to a lesser extent, yellowfin, outside the CYRA. A CYRA closure was not effective for bigeye, and its rationale for yellowfin was weakened.

As a result of these issues, in 2002 the management measures for purse-seine fishing were switched from TAC-based measures for the CYRA to measures to limit fishing effort for the entire EPO. The recommended reductions in effort for bigeye and yellowfin were comparable, and the conservation resolution for 2002 (Resolution C-02-04) simply closed the whole EPO to purse-seine fishing during the month of December.

In 2003, the December closure, established by Resolution C-03-12, was limited to an area of the EPO that was thought to contain a large part of the fishery in association with FADs (Figure 1).

In a subsequent analysis of the effect of the closed area (Document SAR-5-06), it was determined that the reduction in catch attributable to the closure was negligible, and that, overall, the closure was ineffective. This was because the closure was too short and the area too small, and the fleet was able to catch as much yellowfin and bigeye in regions outside the closed area as it would have if the area were not closed.

Resolution C-03-12 also established that the fishery in the entire EPO would be closed to purse-seining from 1 August to 11 September 2004. This period was chosen because it would achieve the greatest reduction of catches of small bigeye relative to the reduction of skipjack catch: the time of year made

little difference for yellowfin catches. The Resolution also required that each CPC's[1] longline catches of bigeye in 2004 be restricted to the level of 2001; this was the first binding limit on longline catches in the eastern Pacific. At its meeting in June 2004, the Commission debated the most appropriate period for a closure, and eventually adopted Resolution C-04-09, which established an additional six-week closure from 20 November to 31 December, with each CPC having to adopt one of the two closures for its purse-seine fleet, and extended the closures to 2005 and 2006; they were subsequently extended to 2007 (Resolution C-06-02).

An assessment of the effect of the closures in 2004 and 2005 at the 2006 Working Group on Stock Assessment Review Group (Document SAR-7-12) showed that reductions in fishing effort for each set type in 2004 and 2005 were different to those in 2003, and none of them was sufficient to reduce effort to the MSY level. This was in part due to the growth of the purse-seine fleet, and also because many vessels scheduled their normal maintenance during the closure period, and so would not have been fishing anyway.

Resolution C-04-09 also established specific longline catch limits for bigeye for China, Chinese Taipei, Japan, and Korea during 2004-2006, and required other CPCs to limit their catches to the level of 2001; for 2007, that was changed to the greater of 500 t or their catch in 2001 (Resolution C-06-02).

Management measures have generally followed scientific advice closely. The exceptions were before 1966, when members were not able to implement the required domestic legislation; during 1980-1987, when TACs were agreed but allocation negotiations broke down; and during 2003-2006, when the measures applied were less restrictive than recommended by the staff.

3. MANAGEMENT MEASURES OF OTHER TUNA COMMISSIONS

While the circumstances for each of the four other tuna commissions[2] and most of the stocks they administer differ, it may be useful to briefly note the management practices used for yellowfin and bigeye (southern bluefin in the case of CCSBT) in the other organizations. For convenience, the term CPC is used to describe members and cooperating non members of these other organizations.

The most common management measure in the other tuna commissions is a defined or implied quota for each CPC. The quota for each CPC is explicit for southern bluefin tuna in CCSBT, and for bigeye tuna in ICCAT for the CPCs with the largest catches. In other cases (IOTC for bigeye, and WCPFC for yellowfin and bigeye), CPC quotas are limited to recent catch levels.

ICCAT requires that CPCs fishing for yellowfin, and those fishing for bigeye without a quota, restrict their levels of fishing effort.

In addition to other measures, ICCAT maintains a closed area during November of each year for fishing by purse-seiners and pole-and-line vessels to protect juvenile bigeye.

4. THE WORKSHOP ON MANAGEMENT STRATEGIES, OCTOBER 2006

The Stock Assessment Working Group held a workshop in October 2006 to review management options for the IATTC. The report of the meeting discusses the following six options, presenting advantages and disadvantages of each one, especially with regard to likely success, effectiveness, effect on bycatch, practicality in implementation, and research required to assess its potential.

1. Closed season
2. Spatial closure

[1] CPCs: IATTC Parties and cooperating non-Parties, fishing entities or regional economic integration organizations

[2] The Commission for the Conservation of Southern Bluefin Tuna (CCSBT), the International Commission for the Conservation of Atlantic Tunas (ICCAT), the Indian Ocean Tuna Commission (IOTC), the Western and Central Pacific Fisheries Commission (WCPFC)

3. Catch quotas
4. Size limits
5. Particular restrictions on FADs
6. Individual Vessel Quotas
7. Capacity limits

It was concluded that the existing 6-week closure, while apparently acceptable to the IATTC members and their industries, is insufficient for yellowfin and bigeye conservation because there is too much fishing capacity in the EPO. Therefore, either additional management measures should be implemented, or the duration of the closure should be extended. Approaches that involve industry in a proactive rather than punitive way are more likely to be successful. One approach would be to provide a positive incentive for industry to develop methods to reduce bigeye catch by permitting some vessels to fish for skipjack associated with FADs during the closed period. This could require a designed program with scientists and observers on board to test methods that avoid bigeye catch. Another possibility is to allow all vessels to continue fishing after the catch limit has been reached, provided their catches of yellowfin andigeye are kept below acceptable limits.

5. OPTIONS FOR THE FUTURE

The Commission has adopted separate measures for longline fishing and purse-seine fishing because of the different nature of the fisheries. Because of the nature of the operation, the staff has no suggestions to modify the current method of quotas for each CPC used to limit longline fishing.

Of the possible options for future management of the purse-seine fishery for yellowfin and bigeye, the staff recommends the following for consideration. The options refer to recommendations from the staff this year only to provide a guide to the extent of the measure that might be needed. The staff's recommendations for 2007 will be informed by the decisions from this meeting and the latest stock assessments.

1. Continuation of the present system of closure of the EPO to purse-seining for a period of time during the year. This has been used during 2004-2007 in lieu of the previous TAC. It is based on estimates of target fishing mortality, and can be made more precise than target catches. However, the practice of reducing the fishing season by the same amount as the desired reduction in fishing mortality has not achieved the reductions in fishing mortality sought for yellowfin. The staff recommendations for 2006 were that the closure should be for a period of 69 days. Because reaching the MSY fishing effort requires a greater reduction for bigeye than for yellowfin, additional measures would be needed for the former.

2. Closure of an area of the EPO to fishing on floating objects for a time to reduce the catches of bigeye. This would work in conjunction with Option 1 above, assuming that the closure is not sufficient to for the conservation of bigeye. To be effective, such a closure would involve a large area, for example between 6°N and 10°S and 90° and 120°W (Figure 2), for a significant period.

3. Individual catch limits for purse-seine vessels. Such a measure provides an incentive for captains to reduce their catches of bigeye while maintaining catches of other species. This can be done by moving away from areas in which there are relatively high concentrations of bigeye, or by modifying fishing techniques. This measure has been previously considered, unfavorably, with a fixed catch per vessel. It would also be possible to assign an individual quota to each vessel based on its previous history.

4. Set TACs for yellowfin and bigeye, and allow vessels to continue fishing after the TAC has been approached, providing that the fraction of yellowfin and bigeye in their catch does not exceed specified limits, for example 15% for yellowfin and 3% for bigeye. The ratio would be calculated for each vessel at the end of each fishing trip, based on the observer estimates of species

composition. The Director would be required to determine when the TAC was approached, taking account of the amounts of each species estimated to be taken while fishing after the closures. The TACs could be set with an initial conservative level that could be increased by the Director, if his analysis of the data indicated that no harm would be done to the stock.

These options could be combined with a program of investigation, as suggested by the Management Strategies Workshop; this would provide the opportunity to develop methods to reduce bigeye catches by permitting some vessels to fish for skipjack associated with FADs during the closed period, with a designed program and with scientists and observers on board, to test methods that avoid bigeye catch.

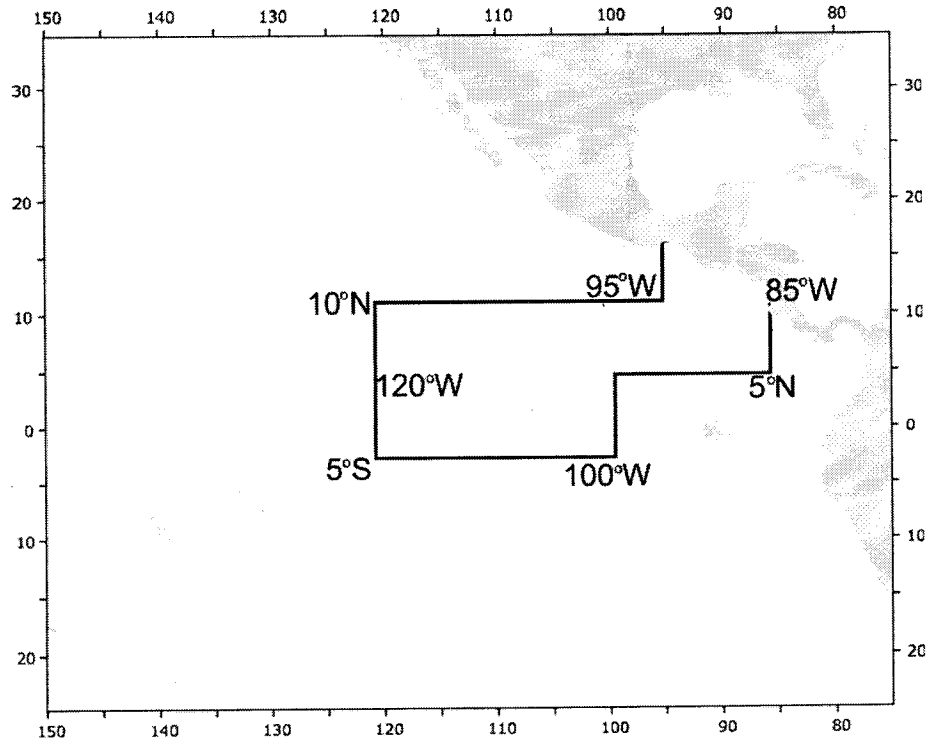

FIGURE 1. Closure zone established by Resolution C-03-12 on tuna conservation.

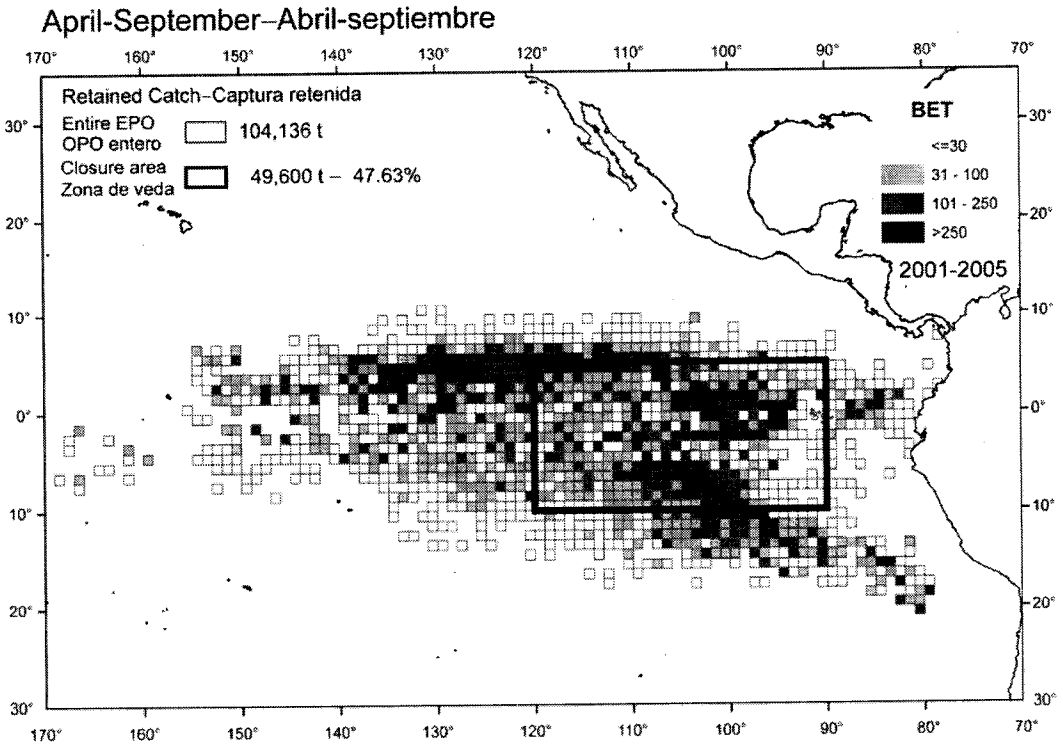

FIGURE 2. Retained catches of bigeye, in metric tons, 2001-2005, and potential closure area.

TABLE 1. Base TACs for yellowfin in the EPO and discretionary increases, in metric tons, 1971-2001.

	Base TAC	**Increments in resolution**
1971	127,000	2 * 9,100
1972	108,900	2 * 9,100
1973	117,900	3 * 9,100
1974	158,800	2 * 9,100
1975	158,800	2 * 9,100
1976	158,800	2 * 9,100
1977	158,800	18,100 +13,600
1978	158,800	18,100 +13,600
1979	158,800	18,100 +13,600
1998	210,000	3 * 15,000
1999	225,000	3 * 15,000
2000	240,000/265,000	
2001	250,000	3 * 20,000

INTER-AMERICAN TROPICAL TUNA COMMISSION
COMISIÓN INTERAMERICANA DEL ATÚN TROPICAL

AD-HOC MEETING

LA JOLLA, CALIFORNIA (USA)
5-6 FEBRUARY 2007

DOCUMENT AH-04

CATCHES OF YELLOWFIN TUNA IN 2006

This report commenting on the decline in the catch of yellowfin tuna was sent to CPCs at the end of last year.

The catch of yellowfin tuna during the first half of 2006 was the lowest since the 1980s. The assessment presented at the 74th meeting of the IATTC in June 2006 indicated that the annual recruitment during 2002-2004 was close to the average for 1983-2004, and that the recruitment for 2005 was relatively strong. The estimates of recruitment for the most recent years are rather imprecise, however. On a quarterly basis, the recruitment was estimated to be relatively weak during the first and second quarters of 2005, but strong during the third quarter of that year.

The staff's advice was that, while the current fishing effort (taking account of the recent increase in the size of the purse-seine fleet) was greater than that that would produce the average maximum sustainable yield (AMSY), the stock was not overfished. It seemed then that the most likely explanation for the low catches of yellowfin during early 2006 was reduced catchability of the fish.

The analyses have recently been updated to include data for the first half of 2006. These updated estimates indicate weaker recruitment for the first quarter of 2003 through the second quarter of 2005 than had previously been estimated. However, the recruitment during the third and fourth quarters of 2005 appears to have been strong. The weaker recruitment during 2003, 2004, and the first half of 2005 appears to have caused a decline in the biomass of the stock, which is now below the level that would produce the AMSY.

In addition, the average size of yellowfin in the catch has been reduced as the fleet appears to be switching its effort from offshore areas, where larger fish predominate in the catches, to inshore areas, where smaller fish are more common. It also appears that some vessels that ordinarily direct their effort mostly toward yellowfin have been directing it more toward skipjack and bluefin. The change is illustrated in the table below, which shows the catches in the first semester of 2001-2006 by set type, and the average weights of yellowfin in those catches. The catch in the first semester of 2006 declined precipitously for sets on dolphin-associated fish offshore, moderately for sets on dolphin-associated fish inshore, only slightly for sets on unassociated fish, and not at all for sets on fish associated with floating objects.

Year	Floating objects		Unassociated		Dolphin, inshore		Dolphin, offshore	
	Catch (t)	Average weight (kg)	Catch (t)	Average weight (kg)	Catch (t)	Average weight (kg)	Catch (t)	Average weight (kg)
2001	47,332	9.3	58,037	12.4	45,252	17.8	71,392	30.4
2002	20,835	4.9	39,182	15.4	64,231	23.3	92,290	31.1
2003	15,184	5.2	52,357	8.5	65,619	13.2	86,193	29.3
2004	11,263	5.6	50,978	9.1	47,398	13.4	60,572	30.6
2005	11,880	4.2	50,925	5.9	45,772	14.6	63,574	20.3
2006	12,832	2.9	43,001	5.4	30,597	13.0	21,932	22.1

During the first two quarters of 2006, the average weights of the yellowfin from the two apparently strong

2005 cohorts (from the 3rd and 4th quarters) ranged from 2 to 7 kg. The fish were taken in sets on floating objects and unassociated schools, and comprised more than half of the catch of yellowfin in that time. Normally, most of the catch of yellowfin is taken in sets associated with dolphins. The cohorts from the 3rd and 4th quarters of 2005 will not become well represented in sets on schools associated with dolphins in inshore areas until the first quarter of 2007.

It is still too early to know whether the new 2005 cohorts are really strong, or whether they are being exploited at a high rate. This should become clear in the stock assessment performed in 2007. If those cohorts turn out to be only average, the outlook will be low catches and the risk that fishing effort will remain directed at young fish, leading to a long-term reduction in the abundance of larger yellowfin associated with dolphins.

HIGHLY MIGRATORY SPECIES ADVISORY SUBPANEL REPORT ON YELLOWFIN TUNA OVERFISHING

The Highly Migratory Species Advisory Subpanel concurs with the Highly Migratory Species Management Team report on Agenda Item J.4.b, Supplemental HMSMT Report, and on Agenda Item J.6.b, Supplemental HMSMT Report on yellowfin tuna considerations.

PFMC
04/06/07

Agenda Item J.4.b
Supplemental HMSMT Report
April 2007

HIGHLY MIGRATORY SPECIES MANAGEMENT TEAM REPORT ON YELLOWFIN TUNA OVERFISHING

The Highly Migratory Species Management Team (HMSMT) reviewed the letter from the National Marine Fisheries Service (NMFS) stating that under the reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) in 2006, new language addresses how the U.S. must respond when a stock is determined to be overfished or approaching a condition of being overfished due to excessive international fishing pressure, and for which there are no management measures to end overfishing under an international agreement to which the U.S. is a party. Under the reauthorized MSA (new section §304(i)), within one year of notification of the conditions indicated above, the Council must develop recommendations for domestic regulations to address the relative impact of fishing vessels of the United States on the stock, and to submit those recommendations to NMFS. The relative impact of U.S. fishing vessels on yellowfin tuna in the eastern Pacific Ocean is minimal - roughly 1% of the eastern Pacific Ocean overall catch. The Council has met the requirement to address domestic impacts on yellowfin tuna through the fishery management plan process and is expected to participate in future implementation of domestic regulations through involvement with NMFS in implementing conservation and management resolutions under the Tuna Conventions Act. Should the characteristics of the U.S. fisheries change such that a greater impact on yellowfin tuna stocks occurs in the future, then the Council may need to direct the HMSMT to reevaluate the need for additional domestic regulation.

A second requirement under the reauthorized MSA (§304(i)) is that the Council provide recommendations to be submitted to the Secretary of State and Congress for international actions that will end overfishing and rebuild the affected stocks, taking into account the relative impact of vessels of other nations and vessels of the United States on the relevant stock. Regarding this requirement, the HMSMT will provide recommendations under Agenda Item J.6.

PFMC
04/06/07

Agenda Item J.4.b
Supplemental NMFS Report
April 2007

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802- 4213

MAR 3 0 2007

Dr. Donald McIsaac
Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101
Portland, Oregon 97220

Don,

Dear Dr. McIsaac:

This is to inform you that the Pacific Fishery Management Council (Council) is not required to prepare a fishery management plan (FMP) amendment to address eastern Pacific Ocean (EPO) yellowfin tuna (*Thunnus albacares*) overfishing under Section 304 (16 U. S. C. 1854(e)(3)) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) as stated in my letter October 25, 2006. The Magnuson-Stevens Fishery Conservation and Management Reauthorization Act (MSRA) of 2006 addresses international overfishing by adding section 304(i) to the MSA. This new section requires the Secretary to immediately take appropriate action at the international level to end overfishing for fisheries that NMFS has determined: (a) to be overfished or approaching a condition of being overfished due to excessive international fishing pressure, and (b) for which there are no management measures to end overfishing under an international agreement to which the United States is a party. NMFS interprets "no management measures" to mean the absence of management measures that are adequate to stop overfishing for purposes of the MSA and its implementing regulations. NMFS determined that both of these conditions exist, and therefore, subsection 304(i) governs the MSA mandate to end overfishing in the case of EPO yellowfin tuna. While the Council is not required to prepare an FMP amendment, it must undertake two tasks under section 304(i)(2).

The first task, under section 304(i)(2)(A), necessitates developing recommendations for domestic regulations addressing the relative impact of fishing vessels of the United States on the stock, and submit such recommendations to NMFS. Based on Inter-American Tropical Tuna Commission (IATTC) data for years 2000-2005, the estimated U.S. average catch of EPO yellowfin tuna by the commercial and recreational sectors combined was approximately 1.0 percent of the total catch. Thus, fishing mortality on the EPO yellowfin tuna stock stems predominantly from non-U.S. fleets in the EPO, and any unilateral management to end overfishing by the United States would have a proportionally diminutive effect in terms of reducing fishing mortality and ending overfishing. However, the United States is party to the IATTC and must implement domestic regulations that fulfill the conservation objectives adopted by IATTC. Since the 1970s, the United States has addressed the relative impacts of U.S. fishing on EPO yellowfin tuna by implementing annual or multi-annual conservation and management

resolutions under the Tuna Conventions Act (16 U.S.C. 951–961 and 971 *et seq.*). While the Council has not been directly involved with the regulatory process under this Act for implementing resolutions adopted by the IATTC and endorsed by the United States, it does have the opportunity to comment on draft regulations prepared by NMFS. NMFS will strive to provide adequate notice to the Council for soliciting their input on future domestic regulations addressing the conservation resolutions adopted by the IATTC as well as the Western and Central Pacific Fisheries Commission.

The second task required under section 304(i)(2)(B) is to develop and submit recommendations to the Secretary of State, and to the Congress, for international actions that will end overfishing in EPO yellowfin fisheries and rebuild the affected stocks. These recommendations must take into account the relative impact of vessels of other nations compared to vessels of the United States, and, as mentioned previously, the relative impact of U.S. fishermen is negligible. NMFS is aware that the Council provided recommendations in 2006 to the General Advisory Committee (GAC) to the U.S. delegation to the IATTC and to the U.S. Commissioners to the IATTC. This section of the MSA now formalizes this role previously played by the Council in providing recommendations to end overfishing.

The GAC will be meeting in Long Beach, California on May 30, 2007, and NMFS encourages the Council's participation. To this end, the agency applauds the Council's efforts in moving forward with developing a Council Operating Procedure (COP) for providing HMS management recommendations, in concert with the Western Pacific Fishery Management Council through the appropriate U.S. delegations, the IATTC and the Western and Central Pacific Fisheries Commission. It is my understanding that the COP will be consistent with the Memorandum of Understanding as described at section 503(f) in the MSRA

In closing, NMFS appreciates the Council's involvement in international fisheries and welcomes its contribution in seeking ways to end overfishing of HMS stocks.

Sincerely,

Rod

Rodney R. McInnis
Regional Administrator

cc: F – William T. Hogarth, Ph.D.
F/PIR – William Robinson
F – Rebecca Lent, Ph.D.
F/SF – Alan Risenhoover

COUNCIL OPERATING PROCEDURE FOR HIGHLY MIGRATORY SPECIES RECOMMENDATIONS TO REGIONAL FISHERY MANAGEMENT ORGANIZATIONS

One of the provisions in Amendment 1 to the Fishery Management Plan for U.S. West Coast Fisheries for Highly Migratory Species (HMS FMP), which the Council adopted in November 2006, authorizes the Council to develop a Council Operating Procedure (COP) to facilitate effective coordination and communication of management advice, in concert with the Western Pacific Fishery Management Council (WPFMC) and through the appropriate U.S. delegation, between the Councils and regional fishery management organizations (RFMOs) involved in HMS management in the Pacific Ocean. Although Amendment 1 is currently under Secretarial review by National Marine Fisheries Service, there is nothing preventing the Council with proceeding to develop and implement a COP for this purpose.

At their February 7–8, 2007, meeting the Highly Migratory Species Management Team and Highly Migratory Species Advisory Subpanel reviewed a draft proposed COP and provided comments. Based on those comments a revised draft COP is attached (Attachment 1). The Council should review the draft COP, identify further revisions, and decide if it should be made available for formal public review. At a future meeting the Council would then take final action to adopt the COP.

The Council has also asked the Highly Migratory Species Advisory Subpanel and Highly Migratory Species Management Team to consider who should serve on the newly formed advisory committee to the U.S. Commissioners for the Western and Central Pacific Fisheries Commission (WCPFC) established at §503(d) of the Western and Central Pacific Fisheries Convention Implementation Act. However, if this advisory committee is constituted in similar fashion to the Inter-American Tropical Tuna Commission General Advisory Committee (GAC), then specific representation will not be identified (beyond those seats already identified in the Act). The members would be selected by the Secretary of Commerce through an open nomination process. The IATTC GAC charter states members will "…fairly represent the various groups concerned with the fisheries in the regulatory area of the Convention to Establish the Inter-American Tropical Tuna Commission… including fishermen, vessel owners, processors, environmental non-governmental organizations, and others concerned with fisheries covered by the Convention, all of whom shall be well informed concerning fisheries of the Convention area." At the March 2006, meeting the Council was advised that nominations were being solicited for the IATTC General Advisory Committee for new three-year terms; however, at that time the Council chose not to propose any nominations. The draft COP contains language encouraging the Council to make nominations to the two respective advisory committees when seats become open and outlines qualifications the Council should consider in making such nominations.

The draft COP references the memorandum of understanding (MOU) between certain Regional Fishery Management Councils (RFMCs: PFMC, WPFMC, and NPFMC) and the Secretaries of Commerce and State clarifying Council participation on U.S. delegations, providing formal recommendations on management measures, and coordinating positions with the U.S. delegations to RFMOs. This is also a provision of the Western and Central Pacific Fisheries Convention Implementation Act (§503(f)). Additional information on the potential contents of

such an MOU will be provided as a supplemental attachment, consequent to a meeting of the Executive Directors of the there Pacific RFMCs May 19–20.

In order to improve communication between the Pacific Council and the WPFMC on matters of mutual interest, the HMSMT has been developing means to increase ties with their counterparts, the Pelagics Plan Team (PPT). For example, a joint video conference is planned during the PPT's next meeting. The HMSMT also recommends that one of their members attend the PPT's annual meeting, which this year will be held April 17–19.

Council Task:

Review draft operating procedure, identify revisions, and consider adopting the operating procedure for public review. Provide guidance on measures to increase cooperation between the Pacific Council and the WPFMC.

Reference Materials:

1. Agenda Item J.5.a, Attachment 1: Draft Council Operating Procedure, Highly Migratory Species Recommendations to Regional Fishery Management Organizations.

Agenda Order:

a. Agenda Item Overview — Kit Dahl
b. Reports and Comments of Advisory Bodies
c. Public Comment
d. **Council Action:** Adopt Council Operating Procedure For Public Review And Make Related Recommendations.

PFMC
03/20/07

Draft

Agenda Item J.5
Attachment 1
April 2007

COUNCIL OPERATING PROCEDURE
Highly Migratory Species Management Recommendations to Regional Fishery Management Organizations

Approved by Council:
Reviewed:

PURPOSE

To facilitate effective coordination and communication of management advice, in concert with the Western Pacific Fishery Management Council (WPFMC) and through the appropriate U.S. delegation, between the Councils and regional fishery management organizations (RFMOs) involved in HMS management in the Pacific Ocean. This Operating Procedure will be consistent with the Memorandum of Understanding described at §503(f) in the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 (MSARA).

BACKGROUND

Highly migratory species are wide-ranging, likely to be fished by multi-national fleets beyond U.S. waters, have productivity potentials ranging from very low to very high, and can seldom be directly surveyed for abundance. Their management usually requires international cooperation, for which there must be active U.S. participation at international forums. The principal forum is the Inter-American Tropical Tuna Commission (IATTC), a multi-lateral organization, which, through its member nations and parties, manages HMS in the eastern Pacific Ocean, generally east of 150° W longitude. The IATTC normally holds an annual meeting in June, during which parties may adopt resolutions outlining measures to be implemented through member states and parties (e.g., by domestic regulation). For pan-Pacific stocks the Council may interact with the Western and Central Pacific Fisheries Commission (WCPFC), which, through agreement by member states and parties, has jurisdiction over HMS in the Pacific Ocean generally west of 150° W longitude. The WCPFC normally holds its annual meeting in December. In addition, one of the five U.S. Commissioner seats for this organization is reserved for the chairman or member of the Pacific Council. Because many of the species in the management unit are also within the management unit for the WPFMC's Fishery Management Plan for Pelagic Fisheries of the Western Pacific Region, there also may be a need to coordinate management advice with that Council. This operating procedure outlines measures to facilitate the communication of recommendations from the Council to RFMOs and for the Council to consider RFMO actions requiring a response within the domestic management framework.

PARTICIPATION IN RFMO MEETINGS

Subject to the Memorandum of Understanding referenced in§503(f) of the MSARA, the Council participates in the U.S. delegations to Pacific Ocean RFMOs and is included in all delegation meetings. Participation may include Council members, members of the HMSMT and HMSAS, and Council staff.

REVIEW OF STOCK ASSESSMENTAND OTHER SCIENTIFIC INFORMATION

NMFS SWFSC will provide a report to the Council annually on stock assessments completed in the previous year and any other scientific reports relevant to issues taken up by RFMOs (e.g., bycatch, fleet capacity). The SWFSC will also report on upcoming stock assessments and/or reports to facilitate Council planning. (Stock assessments for HMS are typically prepared by organizations outside the purview of the Council, such as the IATTC, International Scientific Committee for Tuna and Tuna-like Species, and the Scientific Committee of the WCPFC.) The Council may ask its SSC to review and provide advice on stock assessments. If a stock assessment will form the basis for a Secretarial status determination (i.e., overfishing or overfished) the SSC will be given an opportunity to review and report, and the Council to comment, before the status determination is formally communicated.

The RFMO science issues report will normally be delivered at the **September** or **November** Council meeting.

RECOMMENDATIONS TO THE IATTC – U.S. SECTION

The HMSMT will prepare a report containing draft recommendations for a Council position on issues that will be addressed at the next annual IATTC meeting. The HMSAS will review this report and provide their comments. They may provide a separate set of recommendations or combine them with those made by the HMSMT. The HMSMT may solicit input from the WPFMC's Pelagics Plan Team.

The Council will consider the HMSMT and HMSAS reports and any other relevant information and finalize Council recommendations to the U.S. Section to the IATTC. These recommendations will be forwarded to the U.S. Section through the NMFS SW Regional Administrator with copies made to the Chair of the General Advisory Committee for the IATTC and the Executive Director of the WPFMC.

The development of recommendations to the IATTC will normally occur at the **April** Council meeting. In some circumstances the Council may need to revisit their recommendations at the **June** Council meeting because of extraordinary developments. Because the IATTC annual meeting normally occurs shortly after the June Council meeting, special arrangements may be needed to communicate revised recommendations to the U.S. Section. This could be accomplished by inviting U.S. Commissioners to the June meeting and/or having Council members, advisory body members, or staff attend the IATTC meeting as part of the U.S. delegation.

IATTC MEASURES – DOMESTIC IMPLEMENTATION

The NMFS SW Regional Administrator will report to the Council on any action by the IATTC that requires the implementation of domestic management measures under the HMS FMP. The report may include the time period within which Council action is required.

Depending on the type of action required, the Council follows established procedures (in either the Council Operating Procedures or the FMP) for an FMP amendment, regulatory adjustment within the FMP framework, or other type of action.

The Regional Administrator's report on IATTC activities will normally be delivered at the **September** Council meeting.

RECOMMENDATIONS TO THE WCPFC – COUNCIL COMMISSIONER

Section 503(a) of the Magnuson-Stevens Reauthorization Act of 2006 states that one of the five Commissioners for the WCPFC will be the chairman or member of the Pacific Council. The Council will forward its advice through this Commissioner for the development and negotiation of the U.S. position on issues before the WCPFC. Subject to the Memorandum of Understanding referenced in§503(f) of the MSARA, other members of the Council, members of the HMSMT and HMSAS, and Council staff may join the U.S. delegation.

The HMSMT will prepare a report containing advice for the Council with respect to issues that will be addressed at the next annual WCPFC meeting. The HMSAS will review this report and provide their comments. They may provide a separate set of recommendations or combine them with those made by the HMSMT. The HMSMT may solicit input from the WPFMC's Pelagics Plan Team.

The Council will review the HMSMT and HMSAS reports and any other relevant information and formulate any recommendations for the Council member serving on the U.S. Commission. Recommendations formulated by the Council also may be communicated to the Executive Director of the WPFMC in advance of the WCPFC annual meeting.

The development of recommendations to the Commissioner will normally occur at the **November** Council meeting.

WCPFC MEASURES – DOMESTIC IMPLEMENTATION

The NMFS SW Regional Administrator will report to the Council on any action by the WCPFC that requires the implementation of domestic management measures under the HMS FMP. The report may include the time period within which Council action is required.

Depending on the type of action required, the Council follows established procedures (in either the Council Operating Procedures or the FMP) for an FMP amendment, regulatory adjustment within the FMP framework, or other type of action.

The Regional Administrator's report on WCPFC activities normally will be delivered at the **April** Council meeting.

ADJUSTMENTS TO THE TIMING OF COUNCIL ACTIVITIES

Although Council meetings at which RFMO-related activities will normally occur have been identified in this COP, the Council may reschedule these activities as appropriate.

NOMINATIONS FOR RFMO ADVISORY COMMITTEES

Advisory committees to the U.S. Commissioners for both the IATTC and WCPFC have been established under U.S. law (§953 of the Tuna Conventions Act and §503(d) of the Western and Central Pacific Fisheries Convention Implementation Act, respectively). IATTC Advisory Committee members serve for a three-year term; the WCPFC Advisory Committee members serve for a two-year term. Members are selected by the Secretary of Commerce (WCPFC) or State (IATTC) from nominees who represent various groups concerned with fisheries in the respective RFMO regions. When nominations are solicited, the Council may propose nominees. Council nominees should be active in the Council process and willing to present viewpoints consistent with any Council policies related to HMS management, in addition to representing the viewpoints of their own group. In identifying nominees, the Council should consider representatives from the following groups: commercial troll fishery for North Pacific albacore tuna, West Coast recreational fisheries for HMS species, West Coast HMS processors, and non-governmental conservation organizations. West Coast HMS processors may include companies that have facilities and operations in areas other than the West Coast, but have some West Coast presence (for example, their company headquarters).

Memorandum of Understanding
Regarding
Regional Fishery Management Council Participation
in
International Regional Fishery Management Organizations Governing
Pacific Ocean Highly Migratory Species

3-22-2007 Draft

I. Parties

A. The parties to this Memorandum of Understanding (MOU) are the United States (US) Department of Commerce (DOC), the US Department of State (DOS), the Western Pacific Fishery Management Council (Western Pacific Council), the Pacific Fishery Management Council (Pacific Council) and the North Pacific Fishery Management Council (North Pacific Council).

II. Purpose

A. In accordance with Title V, Section 503(f) of the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 (MSRA), the purpose of this MOU is to clarify the roles of the Western Pacific, Pacific, and North Pacific Councils (collectively, the Councils) with regard to international efforts by the United States to manage highly migratory species (HMS) in the Pacific Ocean, including

1. participation in US delegations to international fishery organizations in the Pacific Ocean, including government-to-government consultations;
2. providing formal recommendations to the DOC and DOS regarding necessary measures for both domestic and foreign vessels fishing for HMS species;
3. coordinating positions within the US delegation for presentation to the appropriate international fishery organization; and
4. recommending those domestic fishing regulations that are consistent with the actions of the international fishery organization, for approval and implementation under the Magnuson-Stevens Fishery Conservation and Management Act.

III. Participation in US Delegations to International Fishery Organizations in the Pacific Ocean, including Government-to-Government Consultations

A. Participation in US delegations.

1. The Western Pacific and Pacific Councils shall participate, and the North Pacific Council shall be afforded the opportunity to participate, directly in US delegations to meetings of the Inter American Tropical Tuna Commission (IATTC) and its subsidiary bodies. Such participation shall include at least one individual designated by a Council. Participation may include two or more individuals designated by a Council if such participation is consistent with the total size of the US delegation and of capable of significant contributions to the needs of the US delegation, in the judgment of the designated Head of the US Delegation.

2. The Western Pacific and Pacific Councils shall participate directly in the US delegation to meetings of the Western and Central Pacific Fisheries Commission (WCPFC) and its subsidiary bodies in accordance with the provisions with section IV of this MOU. The North Pacific Council shall be afforded the opportunity to participate directly in US delegations to WCPFC meetings.

B. The Western Pacific and Pacific Councils shall participate, and the North Pacific Council shall be afforded the opportunity to participate, directly in US delegations to Government-to-Government consultations regarding WCPFC and IATTC issues. In cases where a Council is represented by a Commissioner to the organization in question, that Commissioner, or that Commissioner's designated representative, shall represent the Council in the Government-to-Government consultation. In cases where there is no Commissioner from the Council in question, the Council shall designate a representative. For the purposes of this section, Council representatives are considered to be Government personnel in bi-lateral or other Government-to-Government meetings.

C. The Western Pacific and Pacific Councils shall participate, and the North Pacific Council shall be afforded the opportunity to participate, directly in US delegations any noticed meeting of an international forum, in addition to the IATTC and WCPFC, dealing with fishery management issues on HMS stocks associated with a respective Council.

IV. Providing Formal Recommendations to the US DOC and DOS regarding Necessary Measures for both Domestic and Foreign Vessel Fishing for Pacific HMS Species

A. The IATTC forum.

1. The Councils may, at any time, provide formal recommendations to DOC and DOS Secretaries regarding necessary measures for the conservation and management of the HMS stocks under the purview of the IATTC.

i. Such formal recommendations prior to two weeks before any noticed meeting shall be submitted in writing.

ii. Such formal recommendations subsequent to two weeks prior to any noticed meeting and the conclusion of the meeting activities, including any direct follow-up activities, may be presented orally or in writing.

iii. Such formal recommendations of any Council, if completed in a manner timely to any meetings of the GAC (GAC) of the IATTC, shall be forwarded to the GAC of the IATTC for their analysis and recommendations to the US delegation.

B. The WCPFC forum.

1. The Councils shall provide formal recommendations towards the development of a US position on WCPFC issues through the Western Pacific Council and Pacific Council Commissioners seats.

C. When MSAR section 304(i) applies, the Councils will submit recommendations to the US DOC and DOS in accordance with the process established in that section.

V. Coordinating Positions within the US Delegation for Presentation to the Appropriate International Fishery Organization

A. The US DOC and DOS shall notify and advise the Councils of upcoming meetings of the WCPFC and IATTC and subsidiary bodies, or other international HMS fishery organizations, or preliminary precursory planning meetings for such meetings, in a timely fashion so as to provide the opportunity for Councils to develop and submit relevant recommendations in advance of the meetings.

B. To optimize coordination at the US stakeholder level in the IATTC forum, the Pacific Council and the Western Pacific Council shall be provided one seat each on the IATTC GAC.

C. To optimize coordination at the US stakeholder level in the WCPFC forum, the Pacific Council and the Western Pacific Council shall be provided and the following seats on the WCPFC Advisory Committee (AC), with each seat allowed one designee in cases of their absence:

1. The Chair Western Pacific Council Advisory Committee;
2. An official of the fisheries management authority of American Samoa;
3. An official of the fisheries management authority of Guam;
4. An official of the fisheries management authority of Northern Marianna Islands;
5. Pacific Council area albacore troll fishery representative;
6. Pacific Council area commercial fish processor;
7. Pacific Council conservation group representative;
8. Pacific Council recreational fishery representative;
9. Western Pacific Council long line fishery representative;
10. Western Pacific Council troll fishery representative;
11. Western Pacific Council hook and line fishery representative;
12. Western Pacific Council conservation group representative;
13. Western Pacific Council commercial fish processor representative;
14. A staff officer of the Pacific Council; and
15. A staff officer of the Western Pacific Council.

D. The US position at WCPFC proceedings, including a formal proposal or motion, shall be determined by majority vote of the five US WCPFC Commissioners.

VI. Recommending Domestic Fishing Regulations that are Consistent with the Actions of the International Fishery Organization, for Approval and Implementation under the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 et seq.)

A. Representatives of the Councils, DOS and DOC will communicate as soon as practicable after each meeting of the respective plenaries of the WCPFC or the IATTC to discuss whether and what regulatory actions might be needed to ensure domestic fishing regulations are consistent with the decisions of the two organizations and under what legal authority(ies) such regulatory actions should be taken. To the extent practicable, and consistent with Section 505 of the WCPFC Implementation Act, domestic regulations to implement international fisheries agreements will be approved and implemented under the MSAR.

VII. Miscellaneous Matters

A. If any new international fishery organizations are formed that have a substantial interest in HMS in the Pacific, the Councils, DOS and DOC will review this MOU and reach agreement on any alterations or additional provisions within six months.

B. If the Antigua Convention is fully ratified by US Congressional and Executive branch action, the elements of this MOU that refer to the IATTC shall apply to the Antigua

C. Convention provisions, unless implementing legislation significantly alters existing US responsibilities, protocols, or procedures, in which case the provisions of Section VII.A. shall be implemented.

D. This MOU shall be reviewed for efficacy of the mechanisms and established protocols on a regular basis.

E. While attending meetings of the IATTC, WCPFC, or other Regional Fishery Management Organization dealing with HMS in the Pacific Ocean,

1. the appointed Council representative Commissioners and the Council Executive Directors shall have like privileges and immunities as accorded a diplomatic agent under the appropriate Act and in conformity with international law, and
2. appointed members to advisory bodies shall have like privileges and immunities as are accorded to members of the administrative and technical staff of a mission under the appropriate Act and in conformity with international law.

VIII. Agreement

The terms of this MOU are agreed to and remain in effect until notice of termination by any party with six months notice. By authorized signature and date,

Department of Commerce:

_____	_____	_____
Signature	Title	Date

Department of State:

_____	_____	_____
Signature	Title	Date

Western Pacific Fishery Management Council:

_____	_____	_____
Signature	Title	Date

Pacific Fishery Management Council:

_____	_____	_____
Signature	Title	Date

North Pacific Fishery Management Council:

_____	_____	_____
Signature	Title	Date

HIGHLY MIGRATORY SPECIES ADVISORY SUBPANEL REPORT ON COUNCIL OPERATING PROCEDURE FOR MAKING HIGHLY MIGRATORY SPECIES RECOMMENDATIONS TO REGIONAL FISHERY MANAGEMENT ORGANIZATIONS

Memorandum of Understanding

The Highly Migratory Species Advisory Subpanel (HMSAS) reviewed the draft Memorandum of Understanding (MOU) in conjunction with the reauthorized Magnuson-Stevens Fishery Conservation and Management Act (MSA) and recommends that the MOU be amended to allow for broader and more balanced stakeholder representation on the Western and Central Pacific Fisheries Commission (WCPFC) Advisory Committee. Specifically, the HMSAS is concerned that the MOU is biased towards the Western Pacific region. As such, HMSAS advises the Council to amend Section V.C of the MOU to: (1) designate an additional seat for the Chair of the Pacific Fishery Management Council's HMSAS; and (2) replace the seat for one Pacific Council area albacore troll fishery representative with two or three commercial-at-large fisheries representatives from the Pacific region. Likewise, the three seats allocated to representatives of the Western Pacific longline, troll, and hook and line fisheries should be re-designated more generally as two or three commercial-at-large fisheries seats.

Council Operating Procedures

The HMSAS also reviewed the draft Council Operating Procedure (COP) document which is designed to facilitate coordination and communication of management advice between the Regional Fishery Management Councils and the Regional Fishery Management Organizations (RFMOs) that operate in the Pacific. Attached to this report and incorporated by reference is a red-line version of the draft COP document.

Magnuson-Stevens Act Reauthorization

The HMSAS submits these initial comments with regard to annual catch limit accountability measures under Agenda Item J.5. These comments apply equally and should be considered along with other comments on Agenda Item C.2. HMSAS members expressed the following concerns:

(1) Does Section 104(b) of the reauthorized MSA exempt HMS fisheries that are managed internationally from the Council's jurisdiction (Section 303(a)(15)), and thus is the Council responsible or able to establish annual catch limits?
(2) If HMS fisheries are not exempt from Section 303(a)(15), then are they exempt due to the current measures of the IATTC & WCPFC qualifying as measures "provided under international agreement?"

The HMSAS would like clarification about how these new provisions of the Magnuson-Stevens Act will affect this Council's authority to set regulations for U.S. HMS fisheries, and if that new authority will, in some way, disadvantage U.S. vessels relative to the fleets of other nations.

PFMC 04/06/07

Agenda Item I.5
Attachment 1
April 2007

COUNCIL OPERATING PROCEDURE
Highly Migratory Species Management Recommendations to Regional Fishery Management Organizations

Approved by Council:
Reviewed:

PURPOSE

To facilitate effective coordination and communication of management advice, in concert with the Western Pacific Fishery Management Council (WPFMC) and through the appropriate U.S. commissions, U.S. advisory committees and, to the extent practicable, the members of the U.S. delegation, between the Councils and regional fishery management organizations (RFMOs) involved in HMS management in the Pacific Ocean. This Operating Procedure will be consistent with the Memorandum of Understanding described at §503(f) in the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006.

BACKGROUND

Highly migratory species are wide-ranging, likely to be fished by multi-national fleets beyond U.S. waters, have productivity potentials ranging from very low to very high, and can seldom be directly surveyed for abundance. Their management usually requires international cooperation, for which there must be active U.S. participation at international forums. The principal forum is the Inter-American Tropical Tuna Commission (IATTC), a multi-lateral organization, which, through its member nations and parties, manages in HMS in the eastern Pacific Ocean, generally east of 150° W longitude. The IATTC normally holds an annual meeting in June, during which parties may adopt resolutions outlining measures to be implemented through member states and parties, for example by domestic regulation. The Western and Central Pacific Fisheries Commission (WCPFC), through agreement by member states and parties, has jurisdiction over HMS in the Pacific Ocean generally west of 150° W longitude. The WCPFC normally holds its annual meeting in December. In addition, one of the five U.S. Commissioner seats for this organization is reserved for the chairman or member of the Pacific Council. Many of the species in the management unit are also within the management unit for the WPFMC's Fishery Management Plan for Pelagic Fisheries of the Western Pacific Region there is a need to coordinate management advice with the WPFMC. This operating procedure outlines measures to facilitate the communication of recommendations from the Council to RFMOs and for the Council to consider RFMO actions requiring a response within the domestic management framework.

PARTICIPATION IN RFMO MEETINGS

Subject to the Memorandum of Understanding referenced above, representatives of the Council participate in the U.S. delegations to Pacific Ocean RFMOs and are included in all delegation meetings. Participation may include Council members, members of the HMSMT and HMSAS, and Council staff.

REVIEW OF STOCK ASSESSMENTAND OTHER SCIENTIFIC INFORMATION

NMFS SWFSC will provide a report to the Council annually on stock assessments completed in the previous year and any other scientific reports relevant to issues taken up by RFMOs (e.g., bycatch, fleet capacity). The SWFSC will also report on upcoming stock assessments and/or reports to facilitate Council planning. (Stock assessments for HMS are typically prepared by organizations outside the purview of the Council, such as the IATTC, International Scientific Committee for Tuna and Tuna-like Species, and the Scientific Committee of the WCPFC.) The Council may ask its SSC to review and provide advice on stock assessments. If a stock assessment will form the basis for a Secretarial status determination (i.e., overfishing or overfished) the SSC shall be directed to review and report, and the Council to comment, before the status determination is formally communicated.

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The RFMO science issues report will normally be delivered at the **September** or **November** Council meeting.

RECOMMENDATIONS TO THE IATTC – U.S. SECTION

The HMSMT will prepare a report containing draft recommendations for a Council position on issues that will be addressed at the next annual IATTC meeting. The HMSAS will review this report and provide their comments. They may provide a separate set of recommendations or combine them with those made by the HMSMT. To promote greater coordination and communication between the WPFMC and the PFMC, the HMSMT shall solicit input from the WPFMC's Pelagics Plan Team.

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The Council will review the HMSMT and HMSAS reports and any other relevant information and finalize Council recommendations to the U.S. Section to the IATTC. These recommendations will be forwarded to the U.S. Section through the NMFS SW Regional Administrator with copies made to the Chair of the General Advisory Committee for the IATTC and the Executive Director of the WPFMC.

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The recommendations to the IATTC will normally be forwarded after the **April** Council meeting. In some circumstances the Council may need to revisit their recommendations at the **June** Council meeting because of extraordinary developments. Because the IATTC annual meeting normally occurs shortly after the June Council meeting, special arrangements may be needed to communicate revised recommendations to the U.S. Section. This could be accomplished by inviting U.S. Commissioners to the June meeting and/or having Council members, advisory body members, or staff attend the IATTC meeting as part of the U.S. delegation.

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IATTC MEASURES – DOMESTIC IMPLEMENTATION

The NMFS SW Regional Administrator will report to the Council on any action by the IATTC that requires the implementation of domestic management measures under the HMS FMP. The report may include the time period within which Council action is required.

Depending on the type of action required, the Council follows established procedures (in either the Operating Procedures or the FMP) for an FMP amendment, regulatory adjustment within the FMP framework, or other type of action.

The Regional Administrator's report on IATTC activities will normally be delivered at the **September** Council meeting.

RECOMMENDATIONS TO THE WCPFC – COUNCIL COMMISSIONER

Section 503(a) of the Magnson-Stevens Reauthorization Act of 2006 states that one of the five Commissioners for the WCPFC will be the chairman or member of the Pacific Council. The Council will forward its advice through this Commissioner for the development and negotiation of the U.S. position on issues before the WCPFC. Subject to the Memorandum of Understanding referenced above, other members of the Council, members of the HMSMT and HMSAS, and Council staff may join the U.S. delegation.

The HMSMT will prepare a report containing advice for the Council with respect to issues that will be addressed at the next annual WCPFC meeting. The HMSAS will review this report and provide their comments. They may provide a separate set of recommendations or combine them with those made by the HMSMT. To promote greater coordination and communication between the WPFMC and the PFMC, the HMSMT shall solicit input from the WPFMC's Pelagics Plan Team.

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The Council will review the HMSMT and HMSAS reports and any other relevant information and formulate any recommendations for the Council member serving on the U.S. Commission. Recommendations formulated by the Council also may be communicated to the Executive Director of the WPFMC in advance of the WCPFC annual meeting.

The development of recommendations to the Commissioner will normally occur at the **November** Council meeting.

WCPFC MEASURES – DOMESTIC IMPLEMENTATION

The NMFS SW Regional Administrator will report to the Council on any action by the WCPFC that requires the implementation of domestic management measures under the HMS FMP. The report may include the time period within which Council action is required.

Depending on the type of action required, the Council follows established procedures (in either the Operating Procedures or the FMP) for an FMP amendment, regulatory adjustment within the FMP framework, or other type of action.

The Regional Administrator's report on WCPFC activities normally will be delivered at the **April** Council meeting.

ADJUSTMENTS TO THE TIMING OF COUNCIL ACTIVITIES

Although Council meetings at which RFMO-related activities will normally occur have been identified in this COP, the Council may reschedule these activities as appropriate.

NOMINATIONS FOR RFMO ADVISORY COMMITTEES

Advisory committees to the U.S. Commissioners for both the IATTC and WCPFC have been established under U.S. law (§953 of the Tuna Conventions Act and §503(d) of the Western and Central Pacific Fisheries Convention Implementation Act, respectively). IATTC Advisory Committee members serve for a three-year term; the WCPFC Advisory Committee members serve for a two-year term. Members are selected by the Secretary of Commerce (WCPFC) or State (IATTC) from nominees who represent various groups concerned with fisheries in the respective RFMO regions. When nominations are solicited, the Council may propose nominees. Council nominees should be active in the Council process and willing to present viewpoints consistent with any Council policies related to HMS management, in addition to representing the viewpoints of their own group. In identifying nominees, the Council should consider representatives from the following groups: commercial West Coast HMS fisheries, West Coast recreational fisheries for HMS species, West Coast HMS processors, and nongovernmental conservation organizations. West Coast HMS processors may include companies that have facilities and operations in areas other than the West Coast, but have some West Coast presence (for example, their company headquarters).

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HIGHLY MIGRATORY SPECIES MANAGEMENT TEAM REPORT ON COUNCIL OPERATING PROCEDURE FOR MAKING HIGHLY MIGRATORY SPECIES RECOMMENDATIONS TO REGIONAL FISHERY MANAGEMENT ORGANIZATIONS

The purpose of the Council Operating Procedure (COP) is to facilitate coordination and communication of highly migratory species (HMS) management advice between U.S. fishery management councils, the appropriate U.S. delegation and regional fishery management organizations (RFMOs). The COP should be consistent with any Memorandum of Understanding (MOU) among relevant U.S. parties, authorized by the MSA reauthorization.

The Highly Migratory Species Management Team (HMSMT) recommends the Council approve the draft COP for public review. Although the HMSMT has no specific comments on the MOU, the HMSMT highlights that interagency coordination and information exchange is key to effective HMS management and conservation.

The HMSMT recommends that the Council take full advantage of opportunities to nominate west coast stakeholders in HMS management fora. The HMSMT also appreciates that the Council member nominated as a Commissioner to the Western and Central Pacific Fisheries Commission (WCPFC) has considerable HMS expertise and encourages the Council to consider similar expertise critical for future appointments.

To foster communication and coordination, the HMSMT would like to designate a team member as a liaison to U.S. management fora for HMS, including participating in the U.S. delegation to the IATTC and the Western Pacific Fishery Management Council's (WPFMCs) Pacific Pelagics Team (PPT) annual meeting. It should be noted that the HMSMT will meet via teleconference with the PPT in mid-April to discuss longline fisheries, tuna conservation measures, and other HMS issues.

The HMSMT notes that the timing of the Council and IATTC meetings can make it difficult for the Council to develop effective recommendations and communicate them in a timely way to the IATTC. The Council meets in April and June, just prior to the June IATTC meeting. However, stock assessment results are typically available in May each year. Given the very short time to prepare and submit a letter to the IATTC, the HMSMT encourages dialogue between members of the U.S. delegation and the Council at its June meeting to account for assessment results and any other new information. The COP specifies that the HMSMT report to the Council in April, although it is likely that the team will be considering assessment results and developing recommended management measures throughout the year.

HMSMT recommends that the Council:

1) Approve the COPs as drafted for public review.
2) Maximize opportunities for west coast stakeholder participation on RFMO Advisory Committees, through available nomination processes to foster broader and timely communication and coordination on HMS issues with other national and international fishery management bodies.
3) Support designation of a HMSMT member to serve as a liaison on HMS issues to other bodies, including the WPFMC and tuna RFMOs.
4) Invite members of the U.S. IATTC delegation to the June Council meeting to discuss Council conservation recommendations.

Agenda Item J.5.b
Supplemental LC Report
April 2007

LEGISLATIVE COMMITTEE REPORT ON COP FOR MAKING HIGHLY MIGRATORY SPECIES RECOMMENDATIONS TO REGIONAL FISHERY MANAGEMENT ORGANIZATIONS

The Legislative Committee (LC) reviewed the draft Memorandum of Understanding (MOU) on highly migratory species fisheries (Agenda Item J.5.a, Supplemental Attachment 2) and public comment forwarded by Mr. Peter Flournoy regarding the role of the General Advisory Committee (GAC) to the Inter-American Tropical Tuna Commission (IATTC).

The LC recommends that the MOU be amended in two places:

- In Part III by adding a statement that the Chair of the GAC be made part of the U.S. delegation to the IATTC.
- In Part V.C.5 by deleting "albacore troll" and inserting "highly migratory species commercial."
-

The LC believes that these changes will allow broader representation to international bodies regulating highly migratory species fisheries.

PFMC
04/05/07

COUNCIL RECOMMENDATIONS ON CONSERVATION MEASURES TO BE CONSIDERED BY THE INTER-AMERICAN TROPICAL TUNA COMMISSION

The Inter-American Tropical Tuna Commission (IATTC) will hold its annual meeting June 18–29 in Cancun, Mexico. Both the Pacific-wide bigeye tuna stock and the separate eastern and western Pacific yellowfin tuna stocks continue to be subject to overfishing and may be approaching or have reached an overfished condition. They have also been declared subject to overfishing by the Secretary of Commerce. Because U.S. catches are modest in comparison to other national fleets, the problem can only be resolved through multi-lateral agreements made at the IATTC.

The previous agenda item outlined procedures whereby the Council could provide recommendations on a regular basis that would contribute to any positions U.S. delegations might advance at the regional fishery management organization (RFMO) level. Furthermore, because measures to end overfishing must be adopted at this level, providing such recommendations is a key component of any Council effort to respond to the requirements of the Magnuson-Stevens Act for these stocks. It may be recalled that the Council developed recommendations at the April 2006 meeting which were sent to the National Marine Fisheries Service Southwest Regional Administrator for consideration by the U.S. delegation in advance of the June 2006 IATTC meeting. Although the Council has not yet finalized a formal operating procedure covering the development of such recommendations, it is still possible and appropriate to do so under the current agenda topic.

As outlined in Agenda Item J.4.a, Attachment 1, more information relative to conservation measures will become available from the May 7–11 meeting of the IATTC's Stock Assessment Working Group. For that reason, the Council may wish to revisit any recommendations it develops now at the June Council meeting. However, one of the problems with delaying consideration to that time is that the IATTC meeting occurs the following week, making the typical, formal process of communicating recommendations by letter impractical. The Council may wish to discuss other mechanisms for providing of advice to the U.S. delegation. Several key members of the U.S. delegation (Mr. David Hogan and Mr. Rod McInnis) sit on the Council. Additional members of the delegation could be invited to the June Council meeting in order to facilitate a discussion on recommended positions the delegation may take before the IATTC.

To summarize, at this meeting the Council may wish to develop a preliminary set of recommendations for the U.S. delegation to the IATTC relative to bigeye and yellowfin tuna overfishing (and any other relevant issues). These recommendations could be formally forwarded to the NFMS Southwest Region Administrator and the chairman of the General Advisory Committee (which is scheduled to meet on May 30). In addition to the preliminary recommendations, the letter could include a request for a joint meeting of the Council and the U.S. delegation (or key members thereof) at the June Council meeting in order to verbally communicate any changes or refinements to the Council's recommendations.

Council Task:

Identify recommendations to the U.S. delegation to the IATTC on measures to conserve bigeye and yellowfin tuna. Consider mechanisms to allow refinement of these recommendations at the June 2007 Council meeting.

Reference Materials:

None.

Agenda Order:

a. Agenda Item Overview — Kit Dahl
b. Reports and Comments of Advisory Bodies
c. Public Comment
d. **Council Action:** Identify recommendations to the U.S. delegation to the IATTC on measures to conserve bigeye and yellowfin tuna.

PFMC
03/16/07

Agenda Item J.6.b
Supplemental HMSMT Report
April 2007

HIGHLY MIGRATORY SPECIES MANAGEMENT TEAM REPORT REGARDING COUNCIL RECOMMENDATIONS ON CONSERVATION MEASURES TO BE CONSIDERED BY THE INTER-AMERICAN TROPICAL TUNA COMMISSION

The Highly Migratory Species Management Team (HMSMT) discussed the development of a preliminary set of recommendations for the Council to give the U.S. delegation to the Inter-American Tropical Tuna Commission (IATTC) relative to bigeye and yellowfin tuna overfishing (and any other relevant issues).

The HMSMT agrees with the suggestion in the Agenda Item J.6, Situation Summary to develop a preliminary set of recommendations based on currently available information. However, the HMSMT notes that information relevant to any recommendations on domestic regulation or international management measures may be impacted by new information which emerges from the May meeting of the IATTC's Stock Assessment Working Group and the June meeting of the IATTC. This suggests currently focusing on a process for communicating actions or measures to regional fishery management organizations, rather than adopting specific measures at this time in the form of a Fishery Management Plan amendment.

The HMSMT recognizes that IATTC resolutions adopted to date have failed to adequately address the problems of bigeye and yellowfin tuna overfishing. Key areas of concern include current capacity controls which may not be adequate to meet stated conservation goals, overcapacity in the fisheries, no requirements to register fish aggregating devices and high take levels of juvenile yellowfin and bigeye tunas.

Because the U.S. catches are minor in comparison to those of other fleets, the overfishing problem cannot be solved through unilateral domestic regulatory measures by the U.S., and can only be resolved through multi-lateral agreements made at the IATTC. The HMSMT suggests that it may be necessary for the Council to encourage the U.S. international delegation to address this problem more forcefully in order to effectively address the situation.

Under the Magnuson-Stevens Act, the Council is required to develop international recommendations to address overfishing of yellowfin tuna (YFT) in the eastern Pacific Ocean (EPO). This would include developing and submitting recommendations to the Secretary of State, and to the Congress, for international actions that will end overfishing in EPO YFT fisheries, as mandated under Section 304(i)(2)(B) of the newly reauthorized Magnuson-Stevens Act.

The February 2007 U.S. proposed alternatives for expanded area-time closures for tropical tunas (Agenda Item J.4.a, Attachment 1) may be an important conservation measure that merits further study. Additional conservation measures for consideration should include alternative mechanisms for more effective international governance, including vessel monitoring systems, combinations of area-time closures with other management action, capacity controls and mechanisms to enforce compliance. Pending Council guidance, the HMSMT is prepared to address these issues more fully following the June IATTC meeting.

PFMC 04/06/07