APPENDIX G

Comment Analysis Report

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LIST OF ACRONYMS AND ABBREVIATIONS

ABC	Acceptable Biological Catch
ACC	Alaska Coastal Current
AD	Automatic Differentiation
ADF&G	Alaska Department of Fish and Game
AEB	Aleutians East Borough
AFA	American Fisheries Act
AFSC	Alaska Fisheries Science Center
AKAPAI	Alaska Peninsula and Aleutian Islands
AKKO	Alaska Kodiak Region
AKR	Alaska Region
AKSC	Southcentral Alaska
AKSE	Southeast Alaska
AP	Advisory Panel
APA	Administrative Procedure Act
APAI-SPs	Alaska Peninsula and Aleutian Islands Shore Plants
APEC	Asia Pacific Economic Cooperation
APICDA	Aleutian Pribilof Island Community Development Association
A-R-S-O	Atka Mackerel-rockfish-sablefish-other Groundfish Species
AYK	Arctic-Yukon-Kuskokwim
BBEDC	Bristol Bay Economic Development Corporation
BiOp	Biological Opinion
BSAI	Bering Sea/Aleutian Islands
BSP	Bering Sea Pollock
BSP-SPs	Bering Sea Pollock Shore Plants
BTLC	Bird Treatment and Learning Center
CAFF	Conservation of Arctic Flora and Fauna
CAR	Comment Analysis Report
CBSFA	Central Bering Sea Fishermen's Association
CCAMLR	Convention for the Conservation of Antarctic Marine Living Resources
CDQ	Community Development Quota
CEQ	Council on Environmental Quality
CFIVSA	Commercial Fishing Industry Vessel Safety Act
CFR	Code of Federal Regulations
CFZ	Contiguous Fishing Zone
CG	Central Gulf of Alaska
CHSSA	Chinook Salmon Savings Area
cm	Centimeters
cm/sec	Centimeters per Second
CMSA	Consolidated Metropolitan Statistical Area
COAR	Commercial Operations Annual Report
CP	Catcher Processor
CPUE	Catch-per-unit-effort
CV	Catcher Vessel
CVM	Contingent Valuation Method
CVRF	Coastal Villages Region Fund
CWT	Coded Wire Tag
CZMA	Coast Zone Management Act
DAH	Domestic Annual Harvest

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

DAP	Domestic Annual Processing
DCED	Alaska Department of Community and Economic Development
DDT	Para-dichlorodephenyltrichloroethane
DFA	Directed Fishing Allowance
DOC	Department of Commerce
DSR	Demersal Shelf Rockfish
EA	Environmental Assessment
EAI	Eastern Aleutian Islands
EARIR	Environmental Assessment and Regulatory Impact Review
EBS	Eastern Bering Sea
EEZ	Economic Exclusion Zone
EFH	Essential Fish Habitat
EFP	Exempted Fishing Permit
EG	Eastern Gulf of Alaska
EIS	Environmental Impacts Statements
EIT	Echo-integrated-trawl
EJ	Environmental Justice
ENSO	El Nino - Southern Oscillation
EO	Executive Order
EPA	U.S. Environmental Protection Act
EPAP	Ecosystem Principles Advisory Panel Recommendations on Ecosystem-based Management
ESA	Endangered Species Act
ESUs	Evolutionary Significant Units
EVOS	*Exxon Valdez* Oil Spill
FAO	Food and Agriculture Organization
FEIS	Final Environmental Impact Statement
FEP	Fisheries Ecosystem Plan
FGCV	Fixed Gear Catcher Vessels
FLAT	Flatfish
FLP	Floating Inshore Processors
FMP	Fishery Management Plan
FMUs	Fisheries Management Units
FOCI	Fisheries Oceanography Coordinated Investigations
FPA	Federal Power Act
FR	Federal Regulation
FRFA	Final Regulatory Flexibility Analysis
ft	Feet/Foot
FT-CPs	Fillet Trawl Catcher Processors
FTE	Full Time Equivalent
FWCA	Fish and Wildlife Coordination Act
FY	Fiscal Year
G&H	Gut-and-head
GEF	Global Environmental Facility
GFOP	Groundfish Observer Program
GHL	Guideline Harvest Level
GLM	Generalized Linear Model
GOA	Gulf of Alaska
HACCP	Hazard Analysis and Critical Control Point

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

HAPC	Habitat Area of Particular Concern
HT-CPs	Head-and-gut Trawl Catcher Processors
ID	Identification
IFQ	Individual Fishing Quota
IMALF	Incidental Mortality of Albatross in Longline Fisheries
INPFC	International North Pacific Fisheries Commission
IPHC	International Pacific Halibut Commission
IR/IU	Improved Retention/improved Utilization
IRFA	Initial Regulatory Flexibility Analysis
ISO	International Organization for Standardization
ISWG	Interagency Seabird Working Group
IWC	International Whaling Commission
JV	Joint Venture
JVP	Joint Venture Processor
kg	Kilograms
KIB	Kodiak Island Borough
km	Kilometers
km2	Square Kilometers
K-SPs	Kodiak Shore Plants
L-CPs	Longline Catcher Processors
LCVs	Longline Catcher Vessels
LLP	License Limitation Program
LOA	Length Overall
LP	Linear Programming Constrained Optimization Algorithm
m	Meters
MARPOL	International Convention for the Prevention of Pollution from Ships
mb	Millibar
MCA	Marine Conservation Alliance
mm	Millimeters
MMPA	Marine Mammal Protection Act
MPA	Marine Protected Areas
MRB	Maximum Retainable Catch
MSA	Magnuson-steven Fishery Conservation and Management Act
MSST	Minimum Stock Size Threshold
MSY	Maximum Sustainable Yield
mt	Metric Tons
N	North
NAS SF	National Academy of Sciences Policy Recommendations for Sustainable Fisheries
NEPA	National Environmental Policy Act
NFS	Northwest Food Strategies
NFWF	National Fish and Wildlife Foundation
nm	Nautical Miles
nm2	Square Nautical Miles
NMFS	National Marine Fisheries Service
NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NOAA Fisheries	National Marine Fisheries Service
NORPAC	Noaa Fisheries Observer Database
NPAFC	North Pacific Anadromous Fish Commission

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

NPFMC	North Pacific Fishery Management Council
NPFVOA	North Pacific Fishing Vessel Owner's Association
NPI	North Pacific Index
NPO	North Pacific Ocean
NPOA	National Plan of Action
NPRB	North Pacific Research Board
NRC	National Research Council
NS&T	National Status and Trends Program
NSEDC	Norton Sound Economic Development Corporation
NSG	National Standard Guidelines
OCSEAP	Outer Continental Shelf Environmental Assessment Program
OFL	Overfishing Level
OMB	Office of Management Budget
OPA	Oil Pollution Act of 1990
ORCO	Oregon Coast
OSCURS	Ocean Surface Current Simulations
OY	Optimal Yield
PBR	Potential Biological Removal
PCB	Polychlorinated Biphenyls
PCC	Pollock Conservation Cooperative
PCOD	Pacific Cod
P-CPs	Pot Catcher Processors
PCVs	Pot Catcher Vessels
PICES	North Pacific Marine Science Organization
PLCK	Pollock
POP	Pacific Ocean Perch
PPA	Preliminary Preferred Alternative
PRA	Paperwork Reduction Act
PRD	Protected Resources Division
PSC	Prohibited Species Catch
PSG	Pacific Seabird Group
PSR	Pelagic Shelf Rockfish
psu	Practical Salinity Unit
PWS	Prince William Sound
QA	Qualitative Analysis
RACE	Resource Conservation Assessment Engineering
RD	Regional Direction
RFA	Regulatory Flexibility Act
RIR	Regulatory Impact Review
ROD	Record of Decision
RPA	Reasonable and Prudent Alternative
RPN	Relative Population Numbers
RPW	Relative Population Weight
SAFE	Stock Assessment and Fishery Evaluation
SC-SPs	Southcentral Slaska Shore Plants
SEBSCC	Southeast Bering Sea Carrying Capacity
SEIS	Supplemental Environmental Impact Statement
SEO	Southeast Outside District
SE-SP	Southeast Alaska Shore Plants

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

SFA	Sustainable Fisheries Act
SIAWG	Seabird Inter-agency Working Group
SoC	Secretary of Commerce
SP	Shore Plant
SPR	Spawning Biomass Per-recruit
SSC	Scientific and Statistical Committee
SSL	Steller Sea Lion
ST-CPs	Surimi Trawl Catcher Processors
STWG	Seabird Technical Working Group
TAC	Total Allowable Catch
TALFF	Total Allowable Level of Foreign Fishing
TCVs	Trawl Catcher Vessels
U.S.	United States
U.S.S.R.	Soviet Union
USC	United States Code
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VDE	Voluntary Dockside Examination
VIP	Vessel Incentive Program
VMP	Vessel Monitoring Program
VMS	Vessel Monitoring System
W	West
W/C	Western/central
WAIW	Washington Inland Waters
WG	Western Gulf of Alaska
WPR	Weekly Production Report
WSGP	Washington Sea Grant Program
YDFDA	Yukon Delta Fisheries Development Association
°C	Degrees Celsius
µM	Micro Meters

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Introduction

The Role of Public Comment

The National Environmental Policy Act (NEPA) is a procedural law intended to facilitate better government decisions concerning the development of our lands and oceans. The law has an environmental emphasis. Drafters of the law believed that by requiring a process designed to provide decision-makers with the best information available about a proposed action and its various alternatives, fewer adverse environmental impacts would occur. NEPA does not dictate protection of the environment, but instead assumes that common sense and good judgement will result in the development of the nation's resources in a way that minimizes adverse impacts to our environment. This is achieved by requiring an open, public process whereby the responsible government agency, combined with the stakeholders associated with a particular natural resource and development project, all pull together relevant information for use in making decisions.

Solicitation of public comment on proposed Fishery Management Plans (FMPs), their amendments, and proposed rule-making by the National Marine Fisheries Service (NOAA Fisheries) is required under NEPA. Further NOAA Fisheries must "assess and consider [the resulting public] comments both individually and collectively." Most importantly, such comments are viewed by NOAA Fisheries as critical in helping managers to shape responsible plans for our nation's fishery resources that best meet the NOAA Fisheries mission, the ten National Standards of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), the goals of NEPA, and the interests of the American public. During the formal comment period the public can review and comment on a draft plan's alternative proposals for achieving stated NOAA Fisheries goals. The comment period described in this document is part of a broader effort of public involvement and agency consultation described in Sections 1.5 and 1.6 of the *2004 Final Alaska Groundfish Programmatic Supplemental Environmental Impact Statement* (hereafter referred to as the Final PSEIS). The comments received are analyzed and the results considered by NOAA Fisheries management while developing the Final PSEIS. For a more complete discussion of how NOAA Fisheries addresses public comments, see "*Comment Analysis Process*" of this Comment Analysis Report (CAR).

The Public Comment Period and the Comment Analysis Report

The *2003 Draft Alaska Groundfish Programmatic Supplemental Environmental Impact Statement* (hereafter referred to as the 2003 Draft PSEIS) was released for public review on August 29, 2003. This ten volume, 7,300 page report, revised and improved the *2001 Draft Alaska Groundfish Programmatic Supplemental Environmental Impact Statement* (hereafter referred to as the 2001 Draft PSEIS), to provide a more comprehensive environmental review of the Bering Sea and Aleutian Islands (BSAI) and Gulf of Alaska (GOA) groundfish fisheries and their management by the North Pacific Fishery Management Council (the Council) and NOAA Fisheries. Such an environmental impact statement (EIS) of a long established fisheries program had never been prepared before. Given its significance as a precedent-setting analysis, and in light of on-going litigation, and a number of environmental issues, the 2003 Draft PSEIS has been subjected to extensive public review.

The public comment period was originally scheduled to end on October 15, 2003. However, at the request of a number of public stakeholders, the comment period was extended and finally closed on November 6, 2003 for a total comment period of 70 days. During the public comment period a number of public hearings were held on the 2003 Draft PSEIS in Anchorage, Kodiak, and Juneau, Alaska; in Seattle, Washington; and in Silver Spring, Maryland. All combined, only nine people provided oral testimony on the 2003 Draft PSEIS, however approximately 13,400 submissions were posted on the E-Comments website or mailed to NOAA Fisheries by the deadline.

What is the Response to Public Comments?

NEPA requires government agencies to include in a Final EIS all the substantive comments received on the Draft. However, if the comments are exceptionally voluminous, as in this particular circumstance, the law does allow for summaries to be included in the final document instead. The Final document must include responses to the comments or comment summaries, and if changes to the Draft document are made as a result of those comments, indication of where they were made in the document.

This CAR serves as the Public Comment Summary and Response to Comment document for the 2003 Draft PSEIS. It presents the methodology used by NOAA Fisheries in reviewing and sorting the comments, and it presents a synthesis of all comments that address a common theme. As will be described in the following sections of this report, a careful and deliberate approach has been undertaken to ensure that all substantive public comments are reviewed, considered, and responded to.

As a result of public comment on the 2003 Draft PSEIS, NOAA Fisheries decided to release a Final PSEIS in June 2004. The CAR of the comments on the 2003 Draft PSEIS is consequently appended to this Final.

The Analysis of Public Comment on the Alaska Groundfish Fisheries 2003 Draft Programmatic SEIS

All letters, comment forms, transcripts of public hearings and electronically received submissions on the 2003 Draft PSEIS were read and given unique Submission ID#. All submissions received by mail were sent an acknowledgment of NOAA Fisheries' receipt of the comment submission. Public comments were reviewed and entered into a database developed for this project called "Testimony Tracker". Demographic information was identified for each submission or testimony. These were then examined by a minimum of two reviewers and each substantive comment within each submission or testimony was given a unique comment ID#. The majority of the 13,402 submissions received by NOAA Fisheries were received via NOAA Fisheries' E-Comment website. Of these, only 6,721 of the submissions were from commenters who provided their name and address only and no comment text. There were later determined to be the result of a request for petition-like signature from a non-government organization website. Thus, the total number of submissions with an assigned tracking submission number is 8,157. Of these, 2,467 specific substantive comments were identified and entered into the database for tracking and synthesis. These comments were coded by issue categories, with many comments receiving more than one issue code. Fifteen issue categories, derived from public scoping, were used to organize the public comments by theme.

This process of tracking and synthesizing public comments has been extensively used by other government agencies who work with NEPA or utilize an extensive public process in their decision-making. The outcome of this phase included identifying statements of public concern and preparing the narrative summary, supported by sample quotes from actual comment submissions. Public concerns were derived directly from submissions and through a review of the comment database. Each public concern presents, in a simple statement, a unique theme found in the body of public comment. The public concern statement is worded

from the point of view of the commenters, providing decision-makers with a clear sense of the public's intention. Concern statements are not intended to replace actual comment submissions or sample quotes. Rather, they summarize for the reader the range of comments on the specific topic in which they are interested. Please refer to Attachment B to find the location of the response(s) to your comment(s).

During the process of identifying statements of concern, all comments were treated equally. They were not weighted by organizational affiliation or other status of commenters; and it did not matter if an idea was expressed by thousands of people or by a single person. The emphasis is on the content of the comments rather than who wrote them, or how many people agree with them. All public concerns identified by the project team are included in this volume. While general statistics are documented on the regional distribution of commenters and their major issue areas of concern, no effort has been made to tabulate the number of people for or against a specific aspect of the 2003 Draft PSEIS. In the interests of producing a Final PSEIS that both meets the mission of NOAA Fisheries and best serves all stakeholders, all comments will be considered equally on their merits.

How to Use This Document

The following parts of Section I further describe the process undertaken to review and synthesize the public comments. Additionally, an overview of the public comments provides general statistics that illustrate the geographic distribution of commenters on the 2003 Draft PSEIS, and the range of issue areas covered. The statistics also inform the reader of the number of form letters submitted.

Section II contains the product of comment synthesis: approximately 200 statements of public concern. These are organized by themes or issue categories, to aid the reader. The issue categories themselves are defined and discussed in further detail in another section of this document. The Section II layout is illustrated in Figure 1 below. Each issue category begins with an overview of the range of public concerns represented. The statements of concern are then grouped by subheading. Each statement is assigned an identification number based on the three digit code for the issue category (e.g., AKN for Alaska Native Issues), and numbered consecutively. Where necessary, the statement is supplemented by additional text that elaborates on the statement or indicates specific concern variations included within that statement. Every statement is illustrated with one to three sample quotes pulled from the actual comment submissions, and attributed to an organization or individual, and if known, their city and state (NOAA Fisheries does not require commenters to give their address.) Finally, NOAA Fisheries has responded to each statement of concern.

The CAR has attempted to eliminate unnecessary duplication of statements of concern between issue categories. As a result, in cases where a statement of concern could feasibly be allocated to more than one category, a decision was made to place it in the one that appeared most logical to the Comment Analysis Team. If the reader is searching for a particular statement of concern, he or she may be advised to check all related categories. Please refer to Attachment B for instructions on how to find the response(s) to your comment(s).

Figure 1. Sample Layout of Comment Analysis Report Section II

Issue Category (e.g., Alternatives)

Overview

Overall summary of the public concerns raised within that issue category.

Subheading within the Issue Category (e.g., New Alternatives)

ALT 01:
Statement of Concern, a succinct summary of the comments' key emphasis.

(OPTIONAL) Additional text to further explain the concern, or to encompass specific comment variations captured within the grouping

SAMPLE QUOTE(S)

- Example from an actual comment submission

Organization or Name *City, State (if known)*

Agency Response

Response from NOAA Fisheries to the statement of concern.

Comment Analysis Process

The analysis of Public Comment on the 2003 Draft PSEIS was a multi-stage process that included coding, sorting and summarizing public comment submissions and testimony into categories of statements of concern. The process is explained in detail below, and is represented visually in Diagram 1.

Public Comment Period

Submissions and testimony were received electronically via the NOAA Fisheries E-Comment website and in hard copy form at the NOAA Fisheries Alaska Regional Office in Juneau. The Public Comment Period occurred between August 29, 2003 and November 6, 2003. Numerous types of public comments were delivered including electronic submissions, individual letters, recorded testimony, joint/group submissions, and form letters.

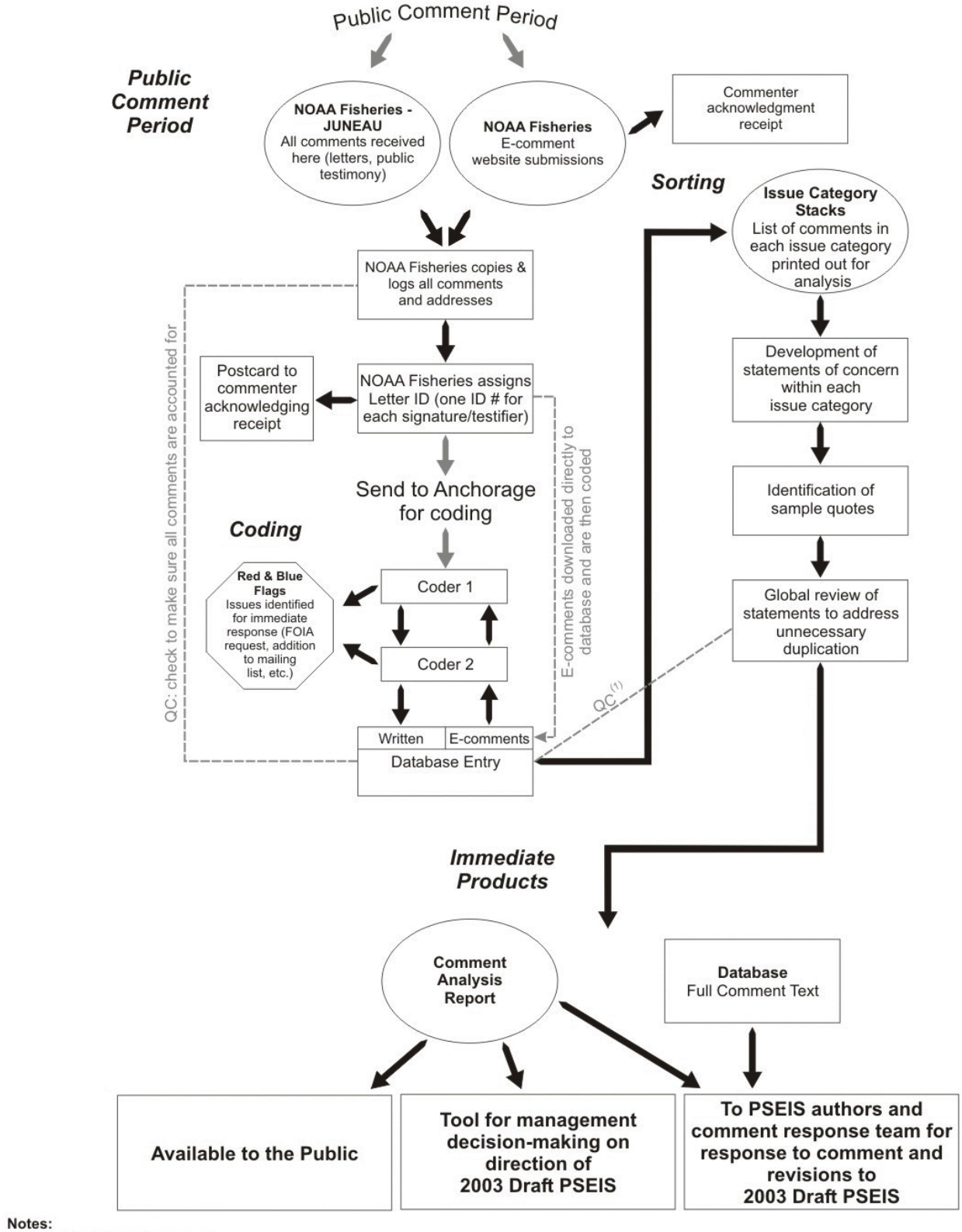
All comments were logged into a comprehensive database, referred to as the Testimony Tracker, following specific standardized processes for entering the following information associated with each comment: sender's name, address, affiliation (if any), type of comment (i.e. form letter or individual comment), date submitted, and comment text. Each submission was assigned a unique set of numbers representing the type of comment, submission, and form letter. Each organization or individual received a unique number, even in the cases where more than one individual signed the same submission.

Coding

Each submission was initially reviewed by a minimum of two coders. The purpose of this step was to first, capture time-dependent information in a submission and flag the text with a specific color-coded issue flag. Requests for additional information, copies of the document, or changes to the mailing list, were identified with a blue flag. If the submission included information requiring immediate management response, the submission was given a red flag. When flags were assigned, the submissions were copied and sent to appropriate response focal points.

Secondly, the coding phase was used to divide each submission or transcript into a series of 'comments', each having a unique Comment ID number. The goal of this process was to ensure that each sentence and paragraph in a comment submission containing substantive content pertinent to the 2003 Draft PSEIS was entered into the Testimony Tracker database designed for this project. Substantive content constituted assertions, suggested alternatives or actions, data, background information or clarifications relating to the 2003 Draft PSEIS document or its preparation. In identifying the 'comments', coders attempted to section out single-themed blocks (usually sentences or paragraphs) in order to minimize duplication of issues within a single 'comment'; although this was not always possible. Coders assigned each 'comment' to one or more issue categories, discussed in further detail below.

Diagram 1. Process of Comment Analysis



Notes:
(1) QC: check to make sure all comments are assigned to at least one statement of concern.

Sorting and Analysis

Once all the coded comments were in the Testimony Tracker database, the Comment Analysis Team received a compilation of all the comments within each issue category. An analysis of the stack resulted in a series of statements of concern. These statements were then organized by sub-issues. Statements of concern are frequently supported by additional text to further explain the concern, or alternatively to capture the specific comment variations within that grouping. Appropriate sample quotes were taken from the database to illustrate each statement of concern.

The final step in the sorting process was a global review of the statements of concern to minimize unnecessary duplication. Where possible, similar statements were combined into one statement and placed in an issue category best fitting the overall concern.

Response

Response to comments was a two step process. NOAA Fisheries has included in this document an official response to each public concern statement listed in the Draft CAR. Additionally, where appropriate, the PSEIS project team has addressed public comments regarding the restructuring of the 2003 Draft PSEIS, including new analysis of revised alternatives. References to changes in the document resulting from public comments are indicated in the CAR response.

Quality Control

Various procedures were established in the analysis process to prevent a submission or comment from being inadvertently omitted. The first quality control check was conducted by comparing the full comment text database in Anchorage to the list of Submission ID#s assigned in Juneau. Although the highest Submission ID# assigned is 13,402, in fact only 8,157 submissions/testimony exist. This is due primarily to electronic submissions received without comment text, and duplicate submissions received in Juneau. Communication and cross-checking between the two lists has ensured that all logged submissions received during the comment period are included in the database. Those that were submitted after the deadline were further cross-checked against substantive comments already in the database, and were found to contain no new unique substantive comments. Additionally, regular cross-checks were made of the database to ensure that all comments are attributed to at least one statement of concern.

Work Products

An immediate product of the comment analysis process was the Draft CAR, which includes the sorted and analyzed public comments without the responses from NOAA Fisheries. The Draft CAR will be made available to NOAA Fisheries decision-makers, to determine appropriate actions in the implementation of the Final PSEIS.

The Testimony Tracker database, which contains the full coded text of each unique public comment submission/testimony, has been used by the PSEIS authors and the project team for the analyses contained in the Final PSEIS for public release. Although summary and groupings of comments is helpful for the public and agency understanding of the issues of controversy, it was necessary for the authors and the response team to consult the full text of the comments to make necessary clarifications to the document and to incorporate additional data and references.

Issues Identified from Public Concerns

In order to effectively screen public concerns, NOAA Fisheries identified a wide range of potential issue categories for comment on the 2003 Draft PSEIS. Fifteen issue categories were developed for coding based on an examination of issues raised during public scoping, and the chapter structure of the 2003 Draft PSEIS. Each oral or written testimony was coded using one or many of the following categories:

- Alaska Native Issues
- Bycatch (Discards)
- Comment Acknowledged
- Ecosystem Health and Management
- Editorial and Document Management
- Economic and Socioeconomic Effects
- Habitat
- Harvest Management
- Legal Compliance and Public Process
- Marine Mammals
- Monitoring and Enforcement
- Marine Protected Areas
- Identifying a Preferred Alternative
- Research
- Seabirds

For a more complete understanding of each issue, refer to the overviews, statements of concerns, summaries, and supporting quotes in Section II of this document.

Alaska Native Issues (AKN) – Includes comments on the analysis of the cultural and social impacts of the alternatives on Alaska Natives and their involvement/consultation in the 2003 Draft PSEIS/groundfish fisheries management process; as well as Environmental Justice and the incorporation of Traditional Knowledge into the document.

Bycatch (BYC) – Includes comments on bycatch limits, bycatch reduction, bycatch analyses, the Observer Program, and the need for additional bycatch data and information. Includes comments regarding the quality of bycatch data in the 2003 Draft PSEIS and the way in which NOAA Fisheries assesses risk and uncertainty of non-target species.

Comment Acknowledged (ACK) – Includes comments that are outside the scope of the 2003 Draft PSEIS or do not present information to be considered in revising the 2003 Draft PSEIS.

Ecosystem Health and Management (ECO) – Includes comments relating to the need to maintain a healthy food web and lasting prey species, and the need for healthy oceans and an ecosystem-based approach to fishery management, as well as comments addressing climatic and oceanographic variability.

Editorial & Document Management (EDI) – Includes comments relating to the organization and editorial improvement of the document.

Economic & Socioeconomic Effects (ESE) – Includes comments on the effects of the alternatives on coastal villages, communities and community development quota (CDQ) groups, or specific vessel types, and the analysis of allocation issues, overcapitalization and the "race for fish", as well as other economic and socioeconomic issues.

Habitat (HAB) – Includes comments on the effects on habitat of particular gear types such as bottom trawling, and concerns relating to the designation and maintenance of habitat.

Harvest Management (HMM) - Includes comments on the process to determine total allowable catch levels, and the treatment of uncertainty within the process, allowable limits of acceptable biological catch, optimum yield, the theoretical basis of MSY-based management and proposed alternative management theories, and on the analysis of target groundfish fisheries in the 2003 Draft PSEIS.

Legal Compliance and Public Process (LCP) – Includes comments on the legal adequacy of the 2003 Draft PSEIS, the 2003 Draft PSEIS public process including government-to-government consultation, Environmental Justice, and issues relating to the scope of the 2003 Draft PSEIS and its alternatives.

Marine Mammals (MAM) – Includes comments and suggestions on the analysis of the effects of the fisheries on one or several species of marine mammals, including localized depletion and temporal and spatial effects.

Monitoring and Enforcement (MON) – Includes comments regarding NOAA Fisheries' systems for enforcement of groundfish fishery regulations and their existing monitoring programs.

Marine Protected Areas (MPA) – Includes comments advocating or critiquing the creation or analysis of marine protected areas, regeneration zones, closure/no-take zones and all comments related to geographically-defined protected regions.

Identifying a Preferred Alternative (PAL) - Includes comments that support or reject the preferred alternative, that suggest new preferred alternatives, or that generally critique the preferred alternative's direct/indirect analysis.

Research (RES) - Includes comments that call for a specific plan of research to account for existing scientific uncertainty.

Seabirds (SEA) - Includes comments regarding the analysis of the effects of the groundfish fisheries on seabirds.

Public Comment Overview

The 2003 Draft PSEIS attracted a total of 13,402 public comments. This total includes all letters and E-Comments submitted to NOAA Fisheries during the public comment period, as well as testimony provided at the various public hearings held on the 2003 Draft PSEIS throughout Alaska, the Pacific Northwest and Washington D.C.

The majority, 90% (11,966), of all public comments on the PSEIS was received via NOAA's E-Comment Web site (see Table 1 and Figure 2). Of these, 56% (6,721) of the submissions were from commenters who provided their name and address only and no comment text (see Table 2). These were later determined to be the result of a petition drive on the National Environmental Trust website where only signatures, no comment text, were submitted. Only those submissions with actual comment text were assigned a letter number in the Testimony Tracker database. Thus, the total number of submissions with an assigned letter number is 8,157 (see Table 3).

Table 1. Breakdown of Submissions on the 2003 Draft PSEIS by Source.

(All Submissions)

Source of Submissions	**Number of Submissions**
E-Comments Web site	11,966
Written Submissions	1,427
Public Hearing Testimony	9
TOTAL	13,402

Table 2. Breakdown of E-Comments on the 2003 Draft PSEIS.

E-Comments	**Number of Submissions**
E-Comments without comment text	6,721
E-Comments with comment text	5,245
TOTAL	11,966

Table 3. Breakdown of Submissions on the 2003 Draft PSEIS by Type.

Type of Submissions	Number of Submissions
Public Hearing Testimony	9
Personalized Letters	4,070
Form Letters	4,073
Joint Submissions	5
TOTAL	8,157

*Includes only those submissions with comment text.

The total number of public comments does not necessarily indicate that 13,402 people have commented on the 2003 Draft PSEIS, as no attempt has been made to account for duplication of names. Indeed, some people submitted one or more written letters, used the website and/or testified at a public hearing; each of these comments were included in the total. Figure 3 presents the distribution of submissions by type. Approximately 50% of the submissions were form letters while approximately 50% came from personalized or individual submissions. A very small amount resulted from public testimony (0.1%).

Form Letters

The organized response campaigns for the 2003 Draft PSEIS were significant. Just over half of all submissions received were form letters that were made available to commenters by various interested parties. Two different form letters were received, submitted as mail-in postcards or into the E-comments online comment form (see Table 4). The two form letters were based on template letter formats provided by environmental groups through newsletters and websites.

Table 4. Breakdown of Form Letters on the 2003 Draft PSEIS.

Form Letter Number	Number of Submissions
F1	1,200
F2	2,873

Geographical Distribution

Comments on the 2003 Draft PSEIS came from all fifty United States, the District of Columbia, and fifty-five foreign countries including Canada, various European countries, Asia, South America and Australia. The majority of submissions, however, came from individuals or groups with United States domestic addresses (Figure 4). Figure 5 illustrates the breakdown of submissions among the United States and its territories. This figure does not include those E-Comment submissions without text. California submitted the highest number of letters, with 1,222, followed by New York (586), Florida (457), Texas (369) and Pennsylvania (342), while Alaska made 279 submissions.

Figure 2. Breakdown of Submissions on the 2003 Draft PSEIS by Source.

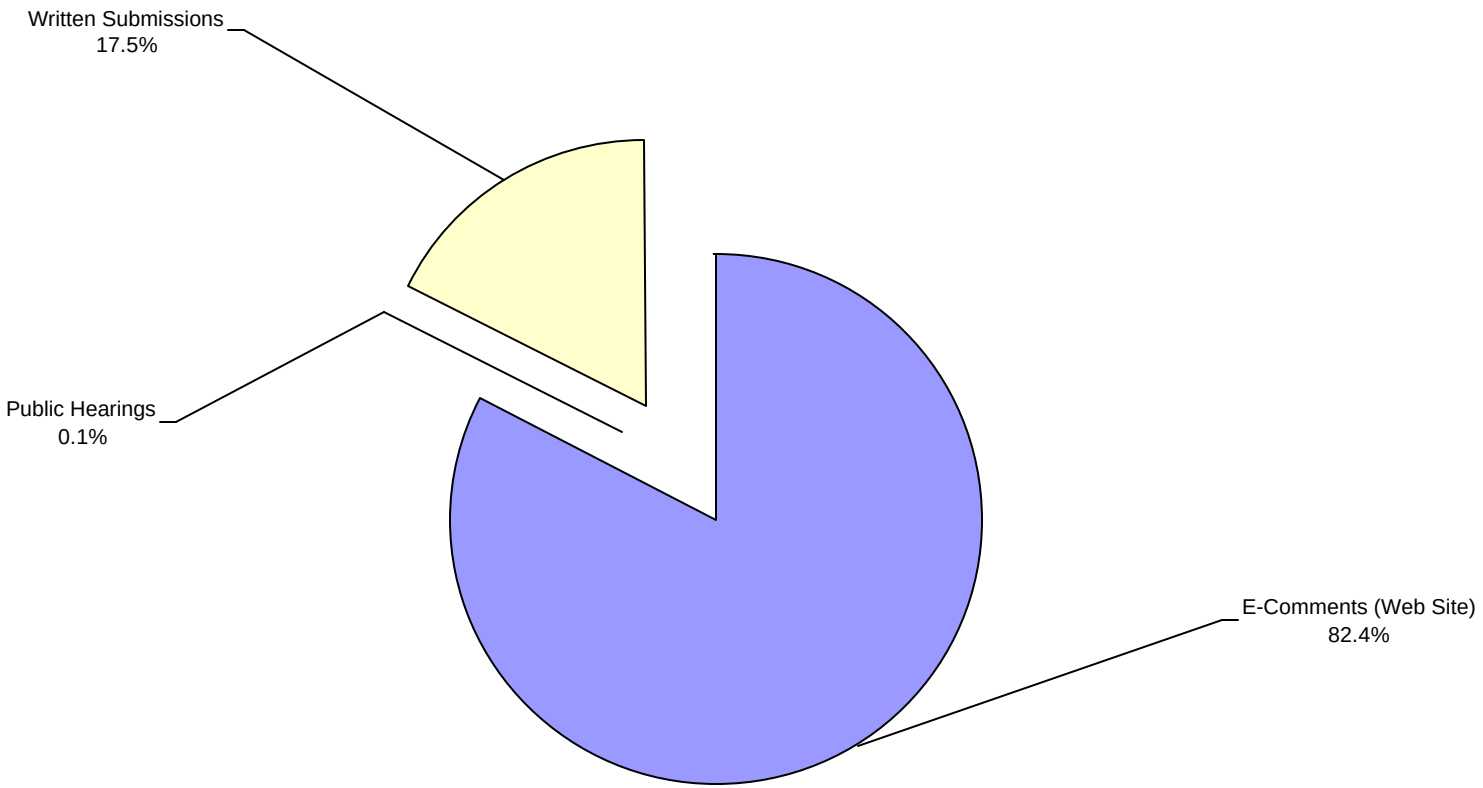


Figure 3. Distribution of Submissions by Type on the 2003 Draft PSEIS.

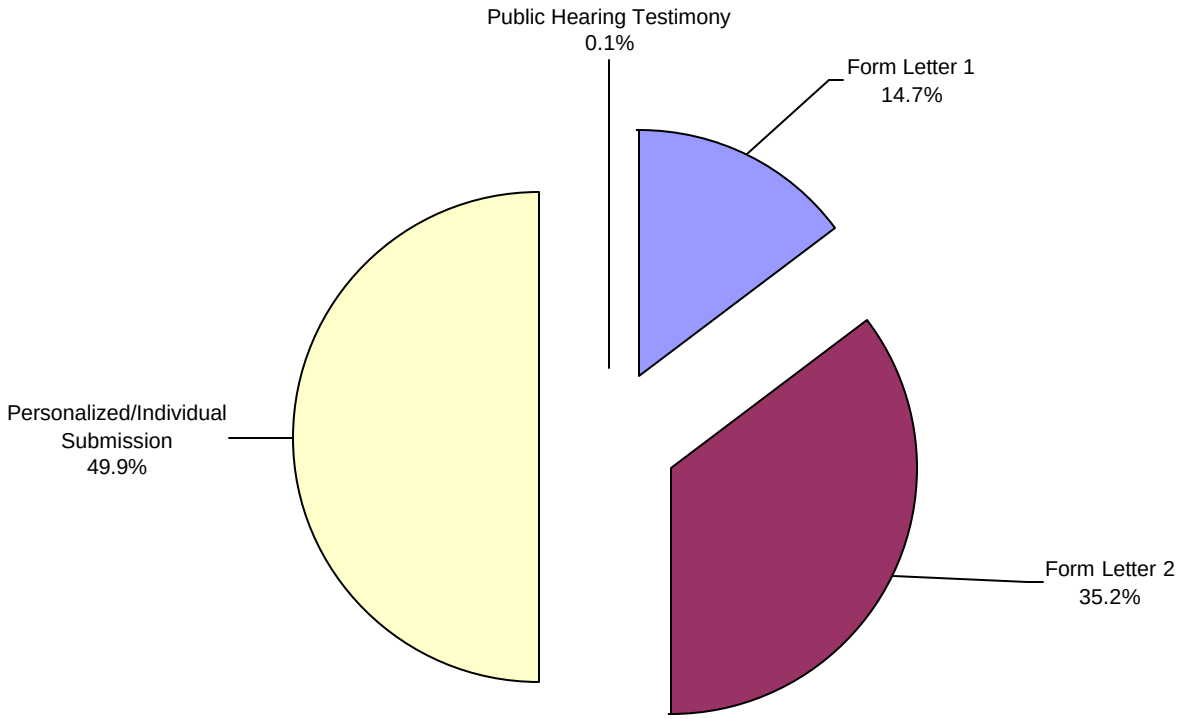


Figure 4. Distribution of Submissions by Region on the 2003 Draft PSEIS.

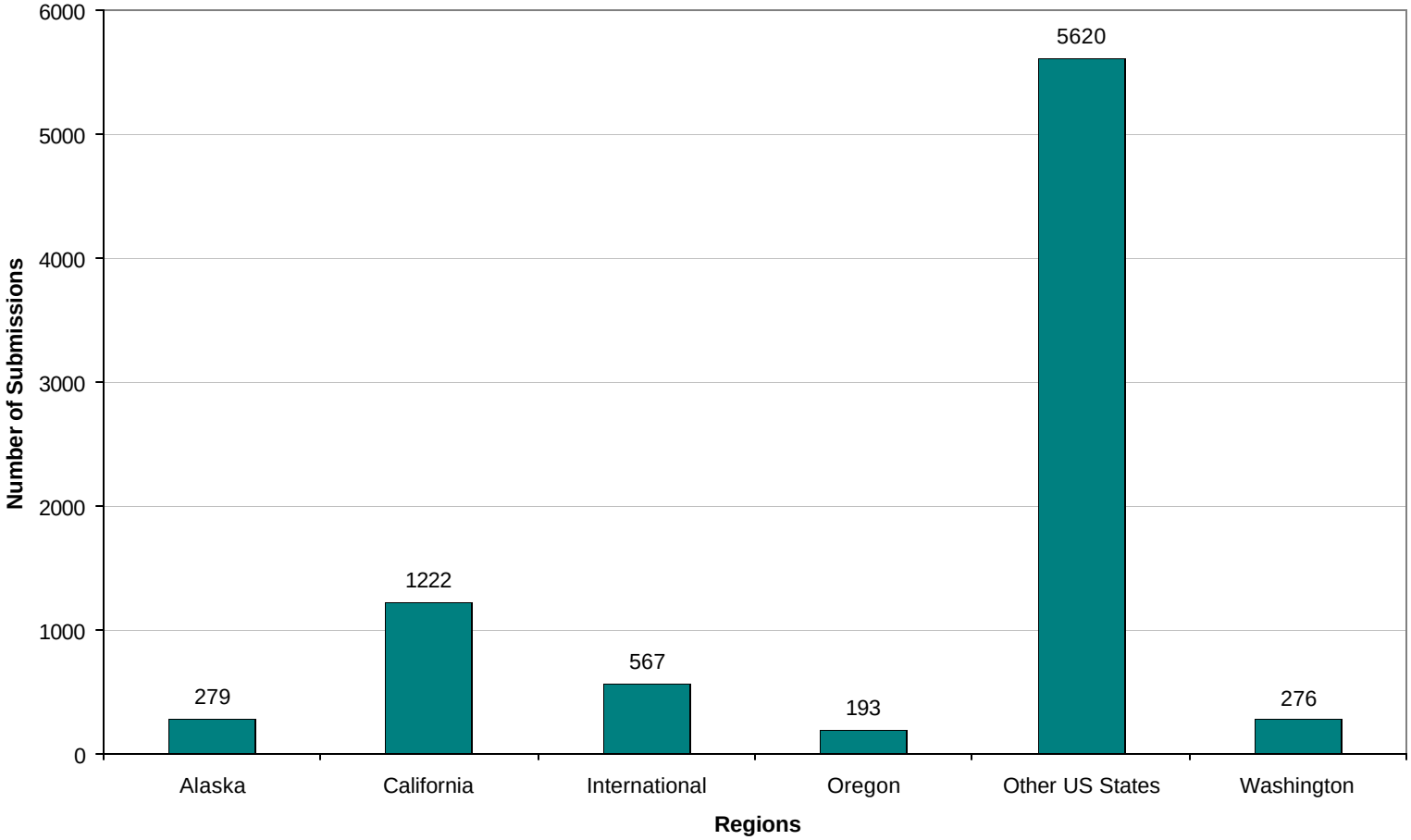
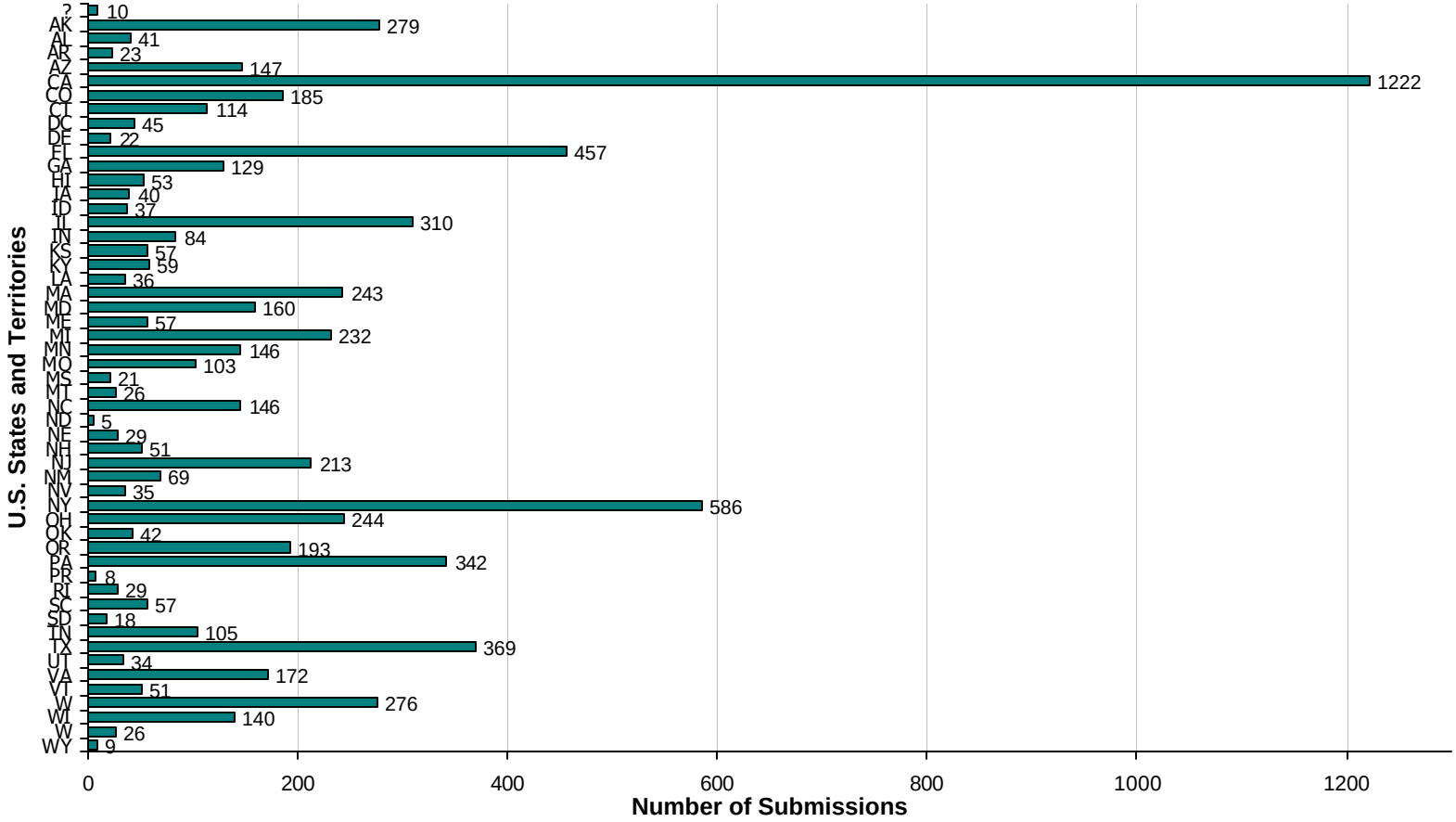


Figure 5. Domestic Distribution of Submissions on the 2003 Draft PSEIS*.

*Includes all written submissions, public hearing testimony and only those E-comments with comment text.



Substantive Comments

Substantive comments were identified in each unique E-comment, written submission, and oral testimony submitted on the 2003 Draft PSEIS. The 8,155 submissions on the PSEIS that contained text resulted in 6,706 coded comments, of which 2,477 are considered substantive, i.e. all categories except for Comment Acknowledged (see Figure 6). Each of these substantive comments was coded according to a specific issue. As a result, each form letter (F1 and F2) was broken down only once into substantive comments, although any personalization of the form letter by an individual commenter was also coded as an additional substantive comment.

Regionally, the majority (45% or 1143) of substantive comments came from submissions with addresses from Alaska and the Pacific Northwest, while 50% (1235) of substantive comments came from outside Alaska. Substantive comments also came from foreign countries (see Table 5 and Figure 7). The substantive comments were often double- or multi-coded, where a particular paragraph or section from a submission presented multiple issues or concerns.

Table 5. Breakdown of Substantive Comments by Region.

Region	Number of Substantive Comments	Percent of Coded Comments
Alaska	944	38%
California	254	10%
International	100	4%
Oregon	30	1%
Other US States	982	40%
Washington	166	6%

Comment Acknowledged

The Comment Acknowledged category contains the largest number of comments (4,229), which includes subject matter determined not to be substantive. For example, many commenters expressed their opinions that NOAA Fisheries should 'Save our seas' or 'The Bering Sea is more than a source for fish sticks' or that 'NOAA Fisheries is doing a good job'. All of these comments were determined not to be substantive under NEPA and warranted only a Comment Acknowledged response.

Top Issues

Following the review and coding of all submissions received, several thematic issues were identified. These issues cover the most common areas of concern about the 2003 Draft PSEIS as synthesized from the range of public comments. Although major issues, they by no means represent the totality of comments resulting from the public comment period.

As expected, the greatest number of substantive comments deal with identifying a Preferred Alternative (1103). Comments in this category include those that support or reject a specific alternative and its analysis, as well those that advocate a new alternative(s). Other categories with a large number of comments include Ecosystem (269), Harvest Management (220), and Legal Compliance & Public Process (182), Marine Mammals (140), and Habitat (130). Figure 8 shows the top ten issues commented on by Alaskans while Figure 9 presents the number of comments by issue code as a percentage of the regional total.

Suggested Changes to the Preliminary Preferred Alternative

Several public comments suggested specific changes to the PPA policy objectives and bookends. These comments are addressed under the issue category Identifying a Preliminary Preferred Alternative (PAL). Attachment C provides a list of these public comments. The Marine Conservation Alliance joint submission provided specific suggestions for changes to the PPA policy objectives and bookends. The excerpt from their submission that focuses on PPA changes is also included separately as Attachment D. Attachment E is an excerpt from the Alaska Oceans Program joint submission and presents the policy objectives and bookends proposed as a new Preferred Alternative. While Attachment E does not provide specific changes to the existing PPA presented in the 2003 Draft PSEIS, it has been highlighted in this CAR for purposes of response to comments and is referred to as the Oceans Alternative.

Figure 6. Distribution of Coded Comments on the 2003 Draft PSEIS by All Issue Categories.

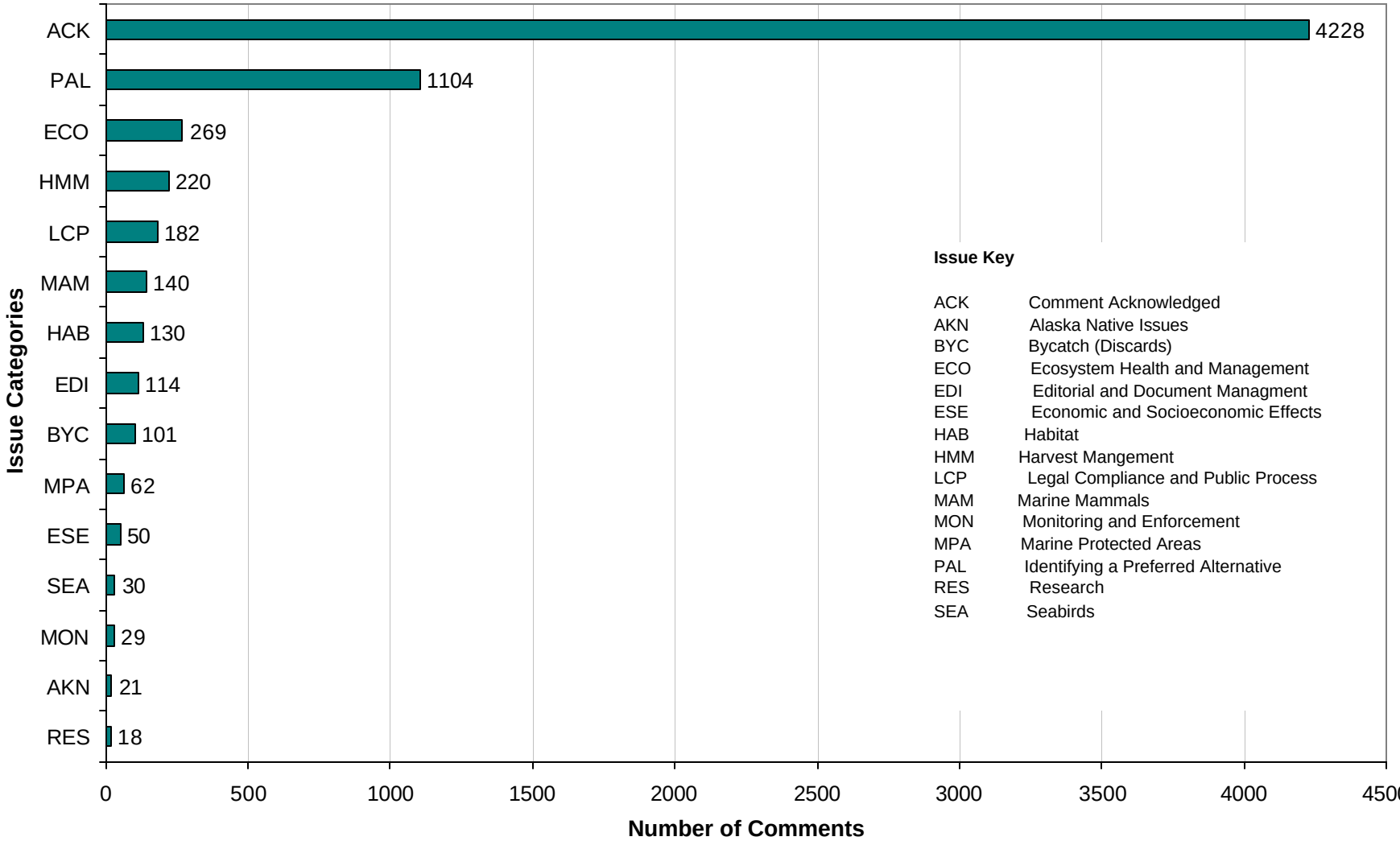


Figure 7. Regional Distribution of Substantive Comments on the 2003 Draft PSEIS.

*Substantive comments do not include "ACK" (Comment Acknlowledged)

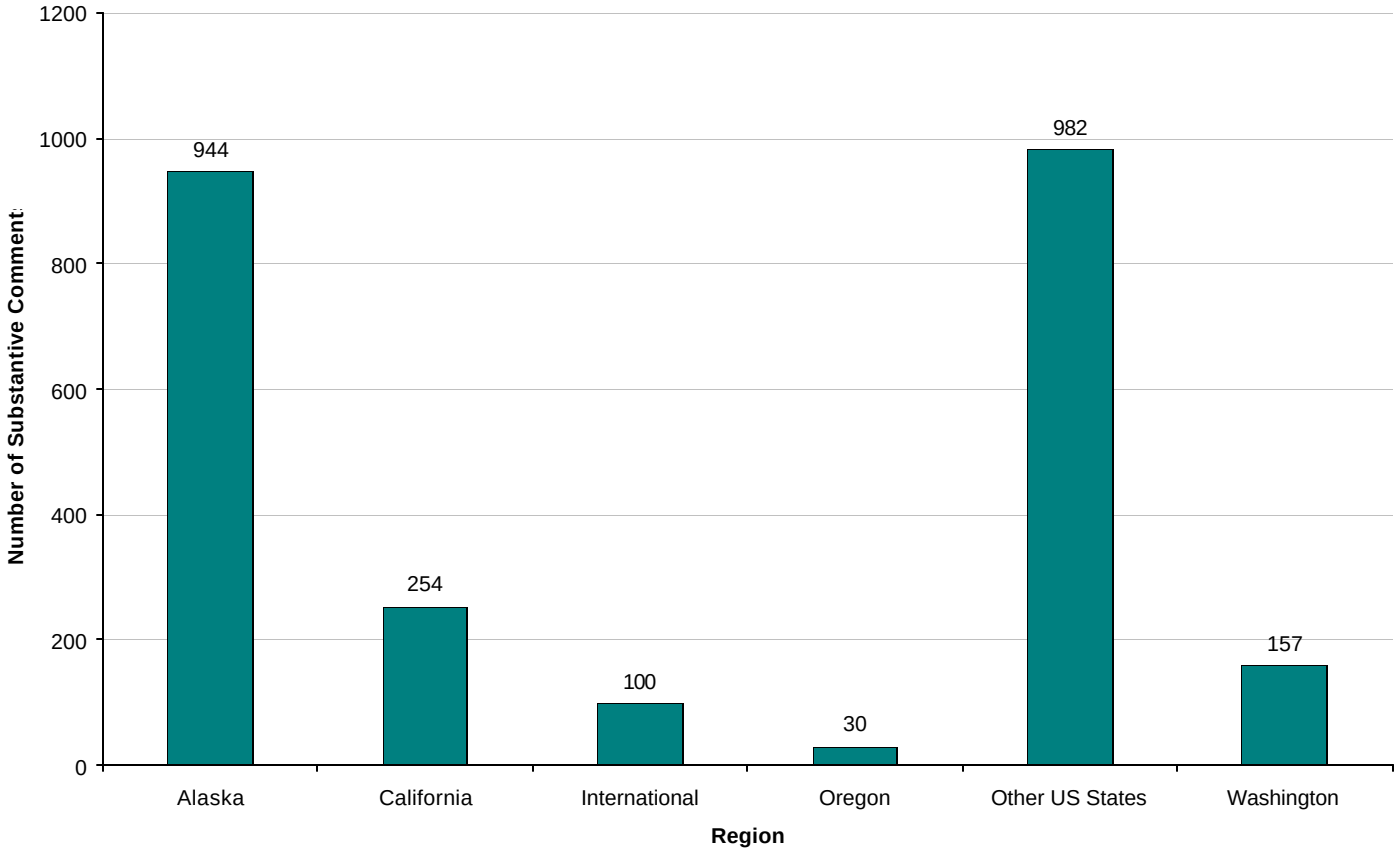


Figure 8. Top Ten Issues of Alaska Commenters by Substantive Comment* on the 2003 Draft PSEIS.

*Substantive comments do not include "ACK" (Comment Acknlowledged)

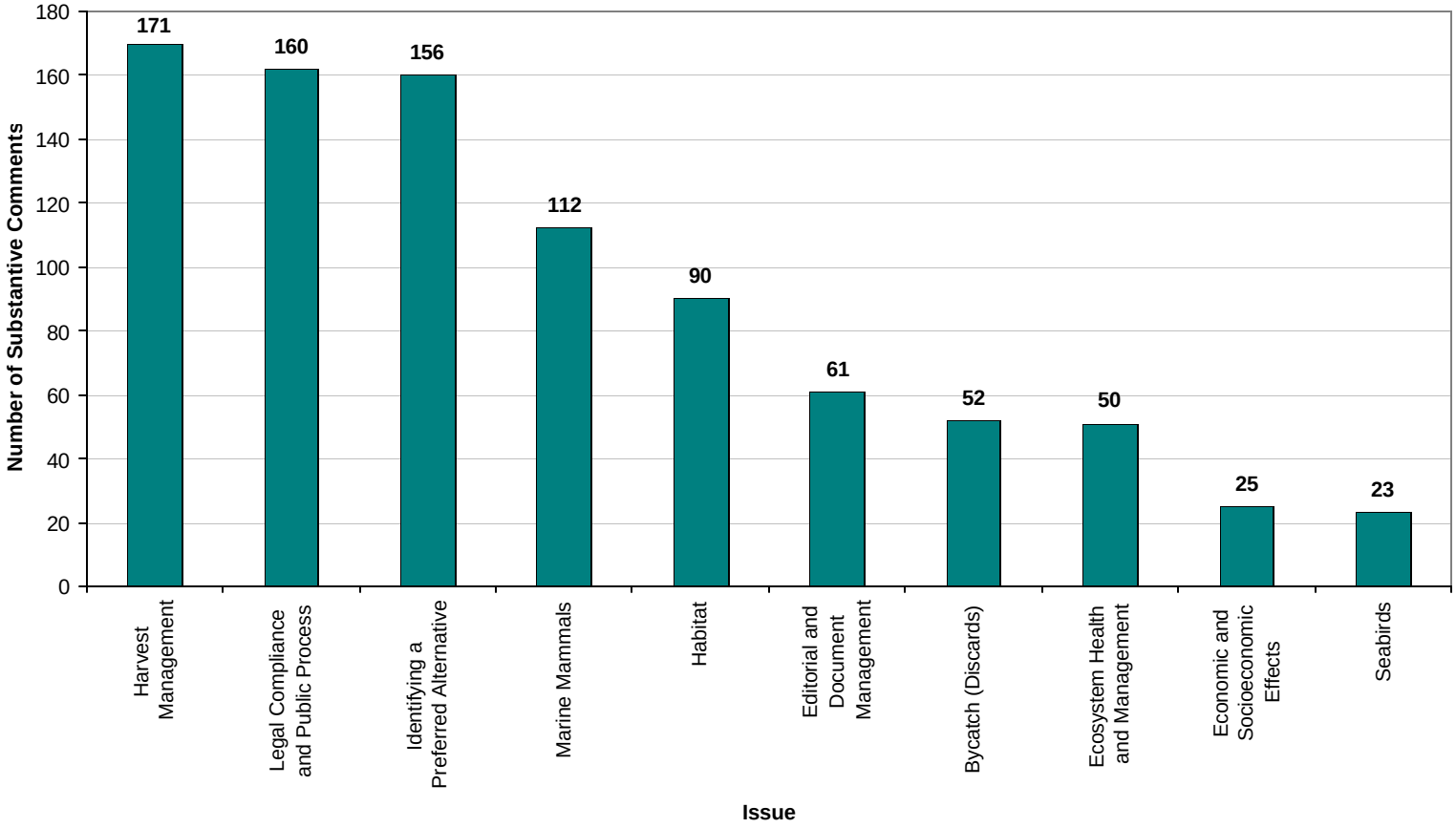
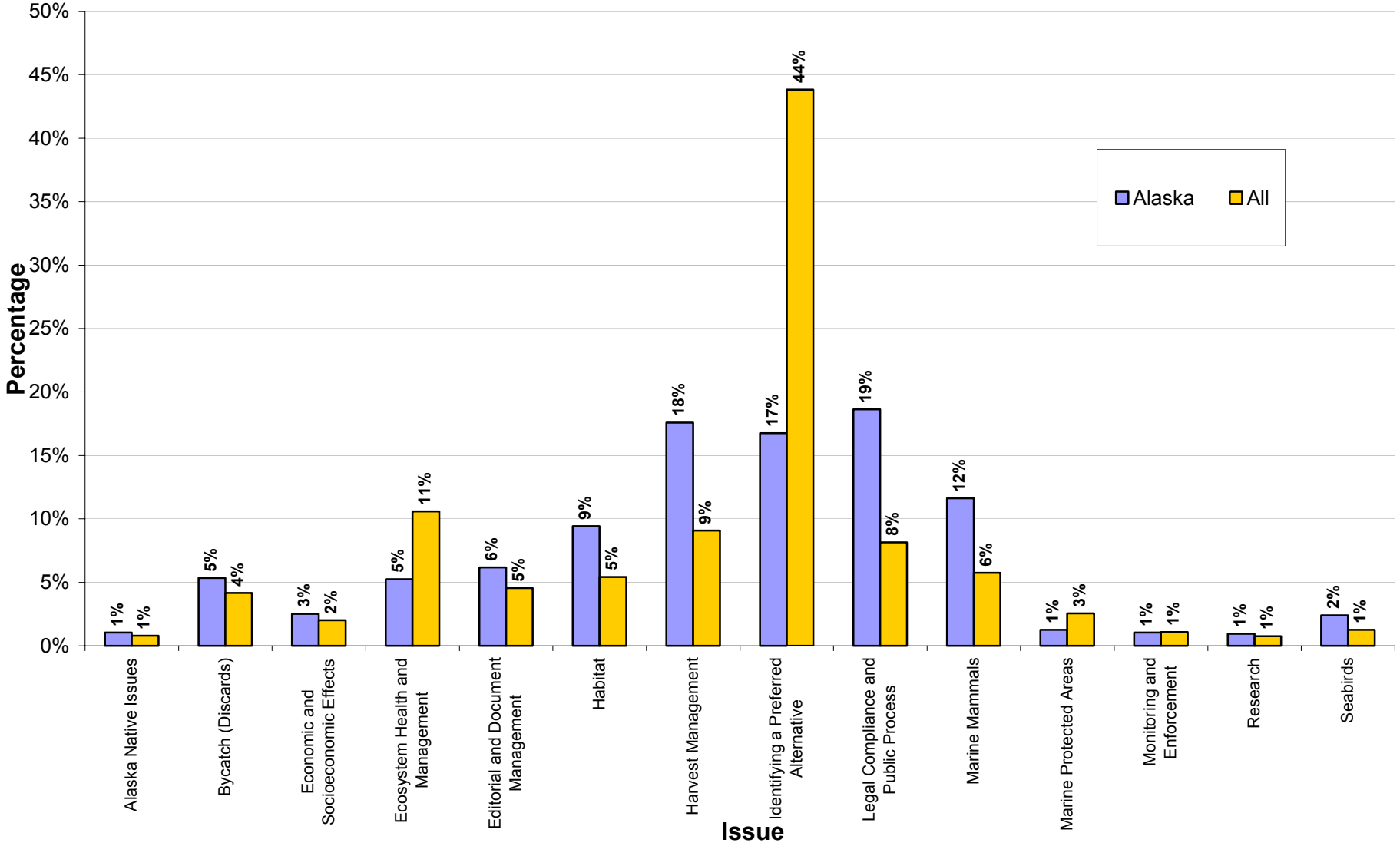


Figure 9. Comparison of 2003 Draft PSEIS Issue Categories - Alaska Region : All Regions.

*Shows the number of substantive comments on each Issue as a percentage of its regional total.

*Substantive comments do not include "ACK" (Comment Acknowledged)



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Alaska Native Issues

Overview

The Alaska Native issues (AKN) public comments focus on the importance of the marine environment, subsistence activities, and commercial fishing to Alaska Natives. Other comments expressed the importance of considering the sustainability of the oceans when developing fisheries management and the dependency of coastal communities on the groundfish fisheries. Additional communication and cooperation between NOAA Fisheries and Alaska Natives was encouraged in public comments.

Alaska Natives and Coastal Communities Depend on Marine Life

AKN 1

Please consider the significance of Alaska Native reliance on marine life and their unique lifestyle when deciding fisheries management measures.

Sample Quote(s)

> 'The Tribal Government of St Paul and Aleut Community of St Paul Island membership are extremely concerned about the North Pacific Groundfish Fisheries in their known and unknown relation to our cultural and economic survival and the numerous marine species that our people are tied to spiritually and nutritionally.'
>
> *M. Richard Zacharof* *Native/Tribal Government* *St. Paul Island, AK*

> 'For coastal communities, the subsistence way of life of indigenous peoples, and continued fishing opportunities over the long-term are all dependent upon a healthy ocean and the plan should pay special heed to their needs (they after all have been "managing" the area for a very long time).'
>
> *Ajay Ramachandran* *Environmental Group* *Redmond, WA*

Response

The 2003 Draft Programmatic Supplemental Environmental Impact Statement (PSEIS) presents the significance of Alaska Native reliance on marine life when managing fisheries in a number of ways. Section 3.9.5 describes the importance of marine life to Alaska Natives as subsistence resources, in particular salmon and Steller sea lions as well as groundfish itself. Sections 3.9.3 and 3.9.4 describe economic reliance of Alaska Natives on marine resources, through discussions of Community Development Quota (CDQ) groups, participation of communities with significant Alaska Native populations in various aspects of commercial fisheries, and reliance of those communities on revenues derived from commercial fishing. The discussion of Environmental Justice existing conditions in Section 3.9.6 also contains specific information on Alaska Native communities heavily engaged in the groundfish fishery. Management policies and measures incorporated into fishery management alternatives described in Chapter 2 include measures to reduce effects on subsistence resources important to Alaska Natives, including reductions in salmon bycatch and consideration of Steller sea lion habitat and prey availability. Other policies and measures address CDQ group participation in groundfish fisheries and rationalization measures that recognize current levels of participation in fisheries, including Alaska Natives. Sections 4.5.9, 4.6.9, 4.7.9, 4.8.9, and 4.9.9 analyze potential effects of the alternatives on Alaska Natives, including effects on subsistence, participation in groundfish fisheries, and community revenues. In the case of CDQ communities and communities with a significant Alaska Native population, the 2003 Draft PSEIS recognizes that these communities may be particularly vulnerable to direct, indirect and cumulative effects of commercial fishing. The assessment of potential effects related to Environmental Justice Issues in Chapter 4 under each alternative include an analysis of potential disproportionate effects of the alternatives on Alaska Natives as a special population.

AKN 2
The health of the ocean has an impact on Alaska Native peoples.

Sample Quote(s)

'The health of the ocean impacts many factors, not least of which are the Native peoples of the Bering region who rely on fishing for their way of life.'

Elizabeth Parke *Citizen* *Pittsburg, KS*

Response

The 2003 Draft PSEIS sufficiently addresses the potential impacts of ocean health on Alaska Natives. Section 3.9.5 addresses the importance of marine life to Alaska Natives as subsistence resources, in particular salmon and Steller sea lions. The status of these resources, and potential effects of fishing management measures are discussed in various sections of Chapter 3 and under each alternative in Chapter 4 respectively. Sections 3.9.3, 3.9.4, and 3.9.6 describe economic reliance of Alaska Natives on marine resources, through discussions of CDQ groups, participation of communities with significant Alaska Native populations in various aspects of commercial fisheries, and reliance of those communities on revenues derived from commercial fishing. Sections 4.5 through 4.9 present potential effects of each alternative on Alaska Natives, including effects on subsistence, participation in groundfish fisheries, and community revenues.

Alaska Native Recognition and Cooperation

AKN 3
Recognition of traditional Alaska Native subsistence use, cultural values, and access rights should be an explicit feature in the Fishery Management Plan (FMP).

Sample Quote(s)

'Recognition of traditional Native subsistence uses and cultural values of living marine resources should be an explicit feature of the FMP, including right of access to resources. Adverse impacts of the fisheries on species and habitats of cultural significance should be addressed.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries recognizes that they have special obligations to consult and coordinate with Tribal Governments on a Government-to-Government basis pursuant to Executive Order (EO) 13175. Prior to the release of the 2001 Draft PSEIS, the Agency formally extended invitations to tribal governments throughout the project area to discuss the details of the project and provide an opportunity, in addition to the public comment period, to discuss the project. As described in the Public Comment Process and Public Comment Overview in this document, 13,402 comments were received on the 2003 Draft PSEIS, many of which discussed Alaska Native issues. Alaska Native issues comments are summarized in this section of the Comment Analysis Report and are thereby provided to the North Pacific Fishery Management Council (NPFMC) and NOAA Fisheries as part of the decision-making process on the PSEIS.

Under the provisions of the Magnuson-Stevens Fishery Conservation Management Act (MSA), there is no specific guidance provided by the National Standards or requirements of a FMP that specifically requires addressing Alaska Native issues. However, both NPFMC and NOAA Fisheries are sensitive to Native concerns. Issues of importance to Alaska Natives have been addressed by a number of management measures, such as protection of marine resources important to subsistence (salmon and marine mammals in particular), continued participation of Alaska Natives in commercial fisheries, and the economic stability of the communities in which they live. Sections 4.5 through 4.9 discuss potential

effects of the alternatives on Alaska Natives, including effects on subsistence, participation in groundfish fisheries, and community revenues.

In addition, the discussion of Alaska Native issues in Appendix F-9 of the 2003 Draft PSEIS provides information on various ways that Alaska Natives participate in fishery management decisions, including representation on NPFMC and its Advisory Panel, involvement of federally recognized tribal governments in National Environmental Policy Act (NEPA) compliance documents through Government to Government Consultation, and through the public participation process associated with both NOAA Fisheries and NPFMC decisions. NOAA Fisheries has also initiated collection of local and Traditional Knowledge (TK) from previously existing published sources for consideration in fishery management and has made this information available within NOAA through a TK database. This effort is intended to capture Alaska Native cultural values and beliefs on access rights so that they may be incorporated into fisheries and other resource management.

AKN 4

Indigenous peoples should have input into the formation of the FMP. The plan should resolve the conflict between monetary gain and long-term benefit for the greater good.

Sample Quote(s)

> 'Please see that the indigenous peoples affected by the proposed management plan have input into its formation. Also, I hope that the management plan will resolve the conflict, between monetary gain and long-term benefit to the greater good, in favor of the greater good--the environment and ALL creatures living in and dependent upon it.'
>
> *Gretchen Kronk* *Citizen* *Southgate, MI*

Response

NOAA Fisheries agrees. Like other members of the public, Alaska Natives are invited to comment at all NPFMC meetings. In addition, NOAA Fisheries responded to scoping by making sure that each of the alternatives analyzed in the 2003 Draft PSEIS included objectives that involve Alaska Natives in fisheries management. The analysis of these objectives and their effects on Alaska Natives is presented in Sections 4.5.9, 4.6.9, 4.7.9, 4.8.9, and 4.9.9. The Preliminary Preferred Alternative (PPA) includes measures that promote sustainability and balance ecological and socioeconomic needs. These are presented in Section 4.9. Alaska Native involvement in fisheries management is also described in the Alaska Native Issues qualitative analysis paper, which includes the following excerpt: "The NPFMC recognizes the importance of fishery resources to Alaska Natives and has formal representation of Alaska Natives on both its Advisory Panel (AP) and the NPFMC itself. Through these representatives, the concerns of CDQ groups, other Native fishermen, Native communities, and subsistence harvesters are raised during the fishery management decision-making process. Fishery management measures or FMPs adopted by the NPFMC, as guided by the MSA (Public Law 94-256), directly or indirectly address issues of Alaska Native concern, such as use of CDQ revenue, salmon bycatch, and protection of Steller sea lions, which are subject to subsistence harvest." Please also refer to the response for AKN 3 above.

The management approach and the objectives in the PA reflect a conservative, precautionary approach to ecosystem-based fisheries management, and communicate a policy direction for the future. The PA incorporates ecosystem-based management principles into a management approach that recognizes the need to both promote sustainable fisheries and protect fishery-dependent communities and in this sense is promoting long-term benefits for the greater good.

AKN 5

Alaska fish resources should be given to Alaskan residents. NOAA Fisheries is invited to conduct meetings in fishing communities to clarify the status of marine resources.

Sample Quote(s)

'True Alaskans and their communities need to be protected from outside interests and absentee owners. The Kaliakh Nation invites cooperation with NOAA Fisheries to implement meetings with fishing communities throughout Alaska to clarify the status of marine resources for Alaskans and the cumulative, long-term economic effects on Native peoples. Alaskan fish resources should be given to Alaskan residents.'

Gary Patton *Native/Tribal Government* *NA*

Response

The groundfish fisheries covered by the 2003 Draft PSEIS and subject to NOAA Fisheries oversight are federally managed resources. While most of the communities engaged in and dependent upon the fishery are Alaska communities and the MSA, through National Standard 8, provides for management to include an emphasis on the sustained participation of fishing communities, there is no legal basis for excluding residents of any state from participating in the fishery. In addition to frequent meetings in centrally located Anchorage, the NPFMC currently holds one of its regularly scheduled meetings in an Alaskan fishing community each year, and during meetings in Kodiak and Unalaska/Dutch Harbor, took actions on various aspects of the 2003 Draft PSEIS. The NPFMC also rotates one of its meetings between Seattle and Portland, which facilitates participation by fishermen from Washington and Oregon. As part of the public hearings on the first and second drafts of the PSEIS, NOAA Fisheries held meetings in several communities where fishermen participate in groundfish fisheries in the BSAI and GOA. NOAA Fisheries has also initiated collection of local and Traditional Knowledge (TK) from previously existing published sources for consideration in fishery management and has made this information available within NOAA through a TK database. As part of implementing the policies contained in fishery management alternative, NPFMC and NOAA Fisheries will continue to look for opportunities to work with communities on the status of marine resources and fishery management in general.

Data and Modeling

AKN 6

Data concerning residency of employees do not incorporate the hundreds of western Alaskans who work in the fishing sectors.

Sample Quote(s)

'On an annual basis, there are hundreds of western Alaska residents who work in these sectors, and there have been thousands over the past 5-10 years, yet the model in no way attempts to incorporate this data, and therefore suggests that there are zero western Alaskans working in this sector. As with our investment and ownership information data, the employment information is readily available, and is reported to the State of Alaska on a quarterly basis.'

Larry Cotter *Native/Tribal Government* *NA*

Response

Section 3.9.2.3 of the 2003 Draft PSEIS acknowledged that the assignment of catcher processor and mothership employment to the region of the vessel owner's residence as listed in Commercial Fisheries Entry Commission (CFEC) vessel registration files or NOAA Fisheries federal permit data may be inferred as an underestimate of the number of employees of these vessels who are residents of Alaska. In the Final PSEIS, it has been clarified that the assignment of employment to regions follows the methodology used by state and federal agencies. No determination of formal or legal residency of workers was made for any of the fishing sectors. However, the 2003 Draft PSEIS acknowledges that the western Alaska CDQ program has created many seasonal job opportunities for residents of eligible Alaska

communities aboard catcher processors. Beyond employment considerations, additional information regarding the importance of CDQ program-related investments and industry partnerships in increasing the participation of Alaska residents, and especially Alaska Native communities, in the groundfish fisheries is provided in Section 3.9.4 of the 2003 Draft PSEIS. There is insufficient information to provide a more accurate account of regional employment patterns in the groundfish fisheries. These points are reiterated in the Final PSEIS in Section 4.1.7, which describes the economic model methodology. In addition, this example of incomplete or unavailable information has been added to the list of specific socioeconomic information gaps and research needs in Section 5.1.2.10 of the Final PSEIS.

Environmental Justice

AKN 7

Under the Preliminary Preferred Alternative (PPA), the analysis concludes that there will be an increase in employment. However, there are environmental justice impacts related to the disproportionate decrease in opportunities for small vessels, even if participation by Community Development Quota (CDQ) groups is increasing on a yearly basis.

Sample Quote(s)

> 'The Environmental Justice related impacts of the PPA, as stated in Section 4.9.9.5, are presumed to be increases in employment. However, as stated previously, there is little direct regional employment in most of these fisheries in the BSAI and little in the processing sector along the Alaska Peninsula. There is, however, local participation in the harvesting sector in the GOA and over 90 percent local participation in the processing sector in Kodiak. Participation by CDQ groups is significant and increasing on a yearly basis. While this involves corporate ownership of vessels and plants, it also provides additional opportunities, and incentives, for direct regional employment targeted primarily on Alaskan Natives.'
>
> *Alice Ruby* *Local/Municipal Government* *Anchorage, AK*

Response

NOAA Fisheries agrees. The analysis presented in Sections 4.9.9.2, 4.9.9.3, and 4.9.9.5 on the PPA sufficiently discuss where there are likely to be increases and decreases in fishing participation and employment, and associated environmental justice implications, including those to small vessels.

Public Process

AKN 8

Many Alaska Natives could not access the 2003 Draft PSEIS due to the short comment period and meeting locations.

> 'The public process did not allow for sufficient comment on the DPSEIS.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries recognizes that they have special obligations to consult and coordinate with Tribal Governments on a Government-to-Government basis pursuant to Executive Order 13175. Prior to the release of the 2001 Draft PSEIS, the Agency formally extended invitations to tribal governments throughout the project area to discuss the details of the project and provide an opportunity, in addition to the public comment period, to discuss the project. NOAA Fisheries also held two teleconferences in 2001 for the sole purpose of soliciting comment on the 2001 Draft PSEIS and the current federal management regime for the BSAI and GOA groundfish fisheries from Alaska natives and coastal communities. These teleconferences enabled coastal tribal governments to provide comments on the PSEIS without traveling to one of the other hearings. For the 2003 Draft PSEIS, NOAA Fisheries extended the comment period from 48 to 70 days based on concerns regarding adequate time for review. Given the number of

communities that are potentially affected by groundfish fisheries in the Bering Sea and Aleutian Islands (BSAI) and the Gulf of Alaska (GOA), it is not possible to meet in every community. However, NOAA Fisheries used it's extensive mailing list and web based comment system to maximize outreach and comment opportunities on the 2003 Draft PSEIS. Please also refer to the responses to LCP 26, 27 and 28.

Bycatch (Discards)

Overview

Public comments focused on concerns with bycatch levels and mortality of non-target species in the groundfish fisheries. In addition, the need for more conservative bycatch limits, improved bycatch data, alternative fishing methods for fisheries with high bycatch, and increased enforcement of Prohibited Species Catch limits comprised the majority of the comments. Comments highlighting concerns with the bycatch analysis methods and conclusions presented in the 2003 Draft PSEIS, compliance with Magnuson-Stevens Act (MSA) bycatch provisions, other bycatch mandates, and National Environmental Policy Act (NEPA) requirements are summarized below.

BYC 1
Phase out and provide alternatives to fisheries that produce high amounts of bycatch and waste.

Sample Quote(s)

'Trawlers are infamous for the massive amount of "accidental" catches of dolphins, whales, sharks, sea turtles, etc. that result in death or maiming. The fishing industry is big and I recognize that. However, the slaughtering of thousands of "bystander" animals is irresponsible and unacceptable. Other companies have shifted their methods, at least seeming to try to improve things on their side.'

Kerri Barnhart *Citizen* *Norco, CA*

'Either phase out and provide alternatives to fisheries that produce high amounts of bycatch and waste or lead these companies to find a way to self-clean/biodegrade their messes as to not further damage surrounding waterways.'

Robert E. Lee, jr. *Citizen* *Sherman Oaks, CA*

'The groundfish trawl fisheries in the Bering Sea and the Gulf of Alaska are among the world's largest and remove over 3 billion pounds of pollock, cod, rockfish, flatfish, Atka mackerel, and other groundfish each year. However, these fisheries also discard about 300 million pounds of ocean life caught in the process. There must be alternative means that would still permit some fishing of this area while at the same time protecting the ocean life that would otherwise be discarded by the current method of fishing.'

Lisa vonTish *Citizen* *Leesburg, VA*

Response

NOAA Fisheries agrees that bycatch should be reduced to the extent practicable and managers are looking to the industry to find ways to achieve further bycatch reduction through gear modification, fleet communication, and best fishing practices. Bycatch reduction continues to be a priority policy objective for the NPFMC and the Agency. The NPFMC is committed to continuing and improving current incidental catch and bycatch management programs, while developing incentive programs, as specified in the PPA (refer to Section 2.6.9.2).

BYC 2
The amount of bycatch discarded in trawl fisheries is excessive and wasteful.

Fishing practices such as trawling result in a high rate of discarded fish. One commenter added that this is causing declines in marine species.

Sample Quote(s)

> 'The Bering Sea is one of the most diverse and productive water systems in the world. Strong management measures are necessary not only to protect the species that are being hurt by bycatch, but also to ensure that the water sustains populations singled out by fisheries for a long time to come.'
>
> *Amy Sage* *Citizen* *San Clemente, CA*

> 'Limit the use of bottom trawling, as this results not only in large bycatches but also destroys the ocean floor environment. Implement a plan to eliminate or significantly reduce bycatch.'
>
> *Thane Harpole* *Citizen* *Hayes, VA*

Response

NOAA Fisheries agrees that bycatch, i.e., the discarding of fish for economic or regulatory reasons, should be minimized to the extent practicable. The MSA National Standard 9 directs the Agency to minimize bycatch to the extent practicable, and where bycatch is unavoidable, to minimize the mortality of such bycatch. There are many management measures in place in the Alaska groundfish fisheries to control and minimize bycatch. For example, prohibited species catch (PSC)-limits regulate the amount of prohibited species (i.e., halibut, crab, salmon, and herring) that may be caught in a given fishing season, and once that limit is reached, the fishery is closed, regardless of whether the target quota has been harvested. PSC-limits are a major incentive for the industry to reduce bycatch. Additionally, retention and utilization programs for pollock and Pacific cod are in place in the trawl fisheries, prohibiting the discard and waste of those species and requiring full utilization.

NOAA Fisheries disagrees that excessive bycatch is causing species decline. Catch that is discarded is nonetheless monitored through the at-sea and shoreside observer program, and through recordkeeping and reporting systems in place in the groundfish fisheries. This discarded catch is taken into account in annual stock assessment by State of Alaska, federal, and international fishery managers. At the first evidence of species decline, whether from fishing pressure or other causes, appropriate measures are put into place to maximize species sustainability.

BYC 3
Improve fishing technology to minimize mortality of bycatch/discards.

Response

The government and the fishing industry have been active cooperators in a number of projects to develop more selective fishing gear to reduce bycatch. These methods are tested under exempted fishing permits, which allow such studies to be pursued outside of the standard fishing regulations. Improvements in fishing gear are then used by the industry.

This cooperative approach has proven to be effective at reducing bycatch and discards in Alaska groundfish fisheries, where discards have declined in the last ten years even as target species quotas have remained stable or increased. In 2002, discards in the groundfish fisheries off Alaska totaled approximately 141,000 metric tons (mt) (Stock Assessment and Fishery Evaluation Report, Economic Status of the Groundfish Fisheries off Alaska, 2002). NOAA Fisheries does mandate the use specific fishing equipment or techniques in certain cases, most recently with seabird avoidance measures in the longline fisheries. However, the development of these measures grew out of cooperative efforts between industry and the Agency. NOAA Fisheries will continue to pursue combinations of improved fishing

techniques, time/area measures and incentives to further reduce bycatch and waste to the extent practicable.

BYC 4
Bycatch will result in loss of prey species and species diversity.

The loss of species [as bycatch] which provide food for other species eventually result in declines of valuable salmon runs and the decay of the entire balance of Nature.

Sample Quote(s)

> 'The management plan for the Bering Sea area should protect the entire ecosystem and all species for the long-term. Overfishing, especially bottom trawling, is the most likely cause of declines in marine mammal populations and should be restricted. The loss of species which provide food for other species will eventually result in the decline of valuable salmon runs and the decay of the entire balance of nature.'
>
> *Jonathan Kasper* *Citizen* *Quilcene, WA*

Response

NOAA Fisheries recognizes that bycatch caps alone may not mitigate the adverse effects of commercial groundfish on the ecosystem, including predator-prey relationships. Protective measures specifically designed for high bycatch species or vulnerable long-lived species are intended to serve as mitigation measures that will reduce the risk of overfishing. Often when information of the impact on stocks is unknown, a precautionary response is to manage on smaller spatial and temporal scales in order to avoid localized depletion. NPFMC is committed to continuing and improving current incidental catch and bycatch management programs, while developing incentive programs, as specified in the PPA. Please refer to Section 2.6 for a description of proposed bycatch provisions in the PPA and Appendix F-5 for current and proposed bycatch management measures and their environmental consequences.

BYC 5
Use bycatch instead of discarding it.

Require “no dumping” of bycatch, return to processors for bio-analysis and retention of food values.

Sample Quote(s)

> 'Establish “no fishing” areas to protect species. Identify and ban trawling in coral areas, require “no dumping” of bycatch and return to processor for bioanalysis and retention of food values.'
>
> *Edward Hakala* *Citizen* *Anchorage, AK*

Response

NOAA Fisheries agrees that reuse measures should be a secondary consideration as part of an overall bycatch reduction policy. Based on these comments, we will consider expanding the improved retention/improved utilization (IR/IU) program, which was implemented for pollock and Pacific cod in 1998, and the development of management programs to reduce economic discards through the modification of fishing gear and techniques, as described in the PPA. Please refer to Section 2.6 for a description of the PPA and Appendix F-5 for further details regarding the current status of bycatch retention programs in the Alaska groundfish fisheries.

BYC 6

NOAA Fisheries' bycatch analysis fails to assess whether alternatives and Fisheries Management Plan bookends comply with bycatch mandates.

Sample Quote(s)

'One of the more glaring problems occurs in respect to the bycatch analysis. The analysis is lacking in several ways: NOAA Fisheries failed to asses whether the alternatives and hypothetical FMP bookends comply with bycatch mandates; NOAA Fisheries failed to provide sufficient background information to provide the reader a clear understanding of the issues; and NOAA Fisheries failed to fully assess data gaps. The flaws in the analysis and evaluation of legal compliance must be remedied in the Final PSEIS.'

Trustees For Alaska *Environmental Group* *Anchorage, AK*

'NOAA Fisheries took the wrong approach to evaluating whether it meets the statutory requirement to reduce bycatch. The requirement is to evaluate whether the agency is meeting its requirement to reduce incidental catch, not to evaluate whether it has significant effects on the fish population. What NOAA Fisheries is actually evaluating here is, whether the fishery is overfished, not whether it has complied with the requirement to minimize bycatch.'

Trustees For Alaska *Environmental Group* *Anchorage, AK*

Response

The MSA National Standard 9 states, "Conservation and management measures shall, to the extent practicable: 1) Minimize bycatch (defined as 'fish that are harvested in a fishery, but that are not sold or kept for personal use'; and 2) To the extent bycatch cannot be avoided, minimize the mortality of such bycatch. Specific guidelines suggest how fishery managers should achieve this standard: 1) promote development of a database on bycatch and bycatch mortality in the fishery to the extent practicable; 2) For each management measure, assess the effects on the amount and type of bycatch and bycatch mortality in the fishery; 3) Select measures that, to the extent practicable, will minimize bycatch and bycatch mortality; 4) Monitor selected management measures."

The alternatives and bookends in the PSEIS address the four guidelines for reducing bycatch in different ways. The underlying assumptions of each management policy alternative suggest that each would define 'to the extent practicable' differently. As a result, the degree to which the research for a bycatch database is promoted (guideline 1), and the types of management measures and monitoring (guidelines 3 and 4) that are selected under each alternative vary. Each of the alternatives, however, includes a thorough assessment of the effects of the FMP on bycatch, both at the illustrative FMP level (Sections 4.5-4.9) and at the policy-level (Section 4.10.2).

For example, under Alternatives 3 and 4, NOAA Fisheries anticipates that actions will be taken to improve catch monitoring of non-target species (Table 2 Appendix F-5). These actions and similar actions like them will provide better data on bycatch and bycatch mortality for use in stock assessments, and to determine the effectiveness of current bycatch reduction programs. NOAA Fisheries Stock Assessment Improvement Plan (SAIP) funding initiative and the National Bycatch Implementation Plan directly address known data gaps in information on non-target species. If these initiatives are supported, status quo management should also result in improved data for monitoring bycatch and bycatch mortality. The NPFMC has been working with NOAA Fisheries and other interested scientists to identify new methods for management of non-target species. Whether non-target species are treated as a separate management group or existing groups are reassessed, the goal of this effort is to improve management of non-target species. NPFMC has also been active in imposing restrictions on the amount of discard IR/IU. These restrictions result in reductions in bycatch but they do not necessarily result in improved catch monitoring (Item 3 above). Catch monitoring issues are addressed in Section 5.2.1 of the 2003 Draft PSEIS that addresses data gaps.

BYC 7

Each Fishery Management Plan (FMP) bookend is evaluated in terms of bycatch mortality reduction rather than bycatch minimization, a goal of the Magnuson-Stevens Act (MSA) bycatch provisions. NOAA Fisheries' analysis of bycatch reduction revolves around assessing amount of bycatch mortality instead of amount of total bycatch.

Sample Quote(s)

'The incorrect policy objective is carried into the specific analysis of alternatives. Each FMP bookend is primarily evaluated in terms of bycatch mortality reduction, rather than bycatch minimization. Occasionally, brief references to bycatch minimization are found within the report and environmental analyses of each bookend, however, the focus remains on the extent of bycatch mortality. Therefore, the 2003 Draft PSEIS does not fully evaluate the primary goal of the MSA bycatch provisions; the reduction in the amount of bycatch. The limited information regarding each FMP bookend's contribution to bycatch minimization does not provide a clear picture, and as a NEPA matter, this lack of information makes it impossible for NOAA Fisheries and the public to fully evaluate each bookend.'

Trustees For Alaska *Environmental Group* *Anchorage, AK*

'The incorrect policy objective is carried into the specific analysis of alternatives. Each FMP bookend is primarily evaluated in terms of bycatch mortality reduction, rather than bycatch minimization. Occasionally, brief references to bycatch minimization are found within the report and environmental analyses of each bookend, however the focus remains on the extent of bycatch mortality. Therefore, the DPSEIS does not fully evaluate the primary goal of the MSA bycatch provisions-reduction in the amount of bycatch.'

Trustees For Alaska *Environmental Group* *Anchorage, AK*

'The groundfish trawl fisheries in the BSAI and GOA are among the worlds largest and remove over three billion pounds of pollock, cod, rockfish, flatfish, Atka mackerel, and other groundfish each year. Sadly, these fisheries also discard about 300 million pounds of ocean caught in the process.'

Vickie Wagner *Citizen* *Three Oaks, MI*

Response

The 2003 Draft PSEIS presents practical methods for reducing bycatch and bycatch mortality. We examine both because while in some fisheries fish caught as bycatch are all killed, in other fisheries some or most of the bycatch survives. In the end, it is the fish killed (e.g. mortality) that constitutes waste, if discarded, or could have an adverse impact on a stock or population of fishes, if determined excessive.

NOAA Fisheries did not provide a simulation model that formally solved for minimum bycatch while optimizing yield and addressing socioeconomic issues. Given the complexity of this fishery and the number of permutations of possible actions for reducing bycatch, it is unlikely that there is a single combination of alternatives that would achieve this optimization goal. Likewise, it would be difficult to identify weights to an objective function that would balance bycatch minimization against societal factors such as, fishing sector allocation, community impacts, and economic efficiency. NPFMC process serves as a forum to discuss and resolve these disputes. For these reasons, the 2003 Draft PSEIS Alternatives imposed fixed bycatch reductions. Finally, NEPA does not require an exhaustive analysis of every conceivable alternative and thus no further changes have been made to the document on this issue. Rather, the range of alternatives to be considered must only be reasonable to the proposed action.

BYC 8

NOAA Fisheries does not mention standardized reporting methodology for bycatch in the analysis section of the 2003 Draft PSEIS.

Sample Quote(s)

'NOAA Fisheries does not mention the standardized reporting methodology for bycatch in the analysis section of the 2003 Draft PSEIS. Appendix F-11 offers a Qualitative Analysis (QA) paper on data and reporting requirements, however, NOAA Fisheries only addresses bycatch reporting in this paper to the extent that it is dismissed.'

Trustees For Alaska *Environmental Group* *Anchorage, AK*

Response

The standardized methodology for reporting bycatch and data analysis is sufficiently described under Section 2.5.2 and 4.1.5.3. Bycatch is estimated through the use of the Observer Program and the reporting of landed catch. The PPA proposes improvements to the Observer Program in an effort to reduce bycatch and increase the accuracy of total catch estimates. Refer to Section 2.6.9.2 for a description of the PPA policy objectives.

BYC 9

The analysis of fishery bycatch of non-target species and vulnerable species is inadequate and uses limited data, failing to satisfy NEPA's requirement for analysis of combined and cumulative effects of FMPs since the last EISs were prepared.

Sample Quote(s)

'Spatial and temporal concentration of bycatch based upon fishery observer CPUE is not presented and analyzed. This should be undertaken across the board and especially for vulnerable species such as rockfish, who exhibit habitat fidelity and are prone to localized depletions.'

Marc Spalding *Environmental Group* *Anchorage, AK*

'The inadequate analysis of fishery bycatch of non-target species uses limited data from the late 1990s to 2001, fails to evaluate readily available analyses of bycatch data spanning the history of the FMPs, and fails to satisfy NEPA's requirement for analysis of combined and cumulative effects of the FMPs since the last EIS's were prepared.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

In the 2003 Draft PSEIS, we expanded the direct/indirect and cumulative effects analysis of non-target species and vulnerable species by including a thorough description of the interactions of the these groups and the analysis of events, such as climate changes and regime shifts, impacts from past and ongoing fisheries, and marine pollution. Spatial and temporal data have been used in this analysis. Furthermore, the effectiveness of past BSAI and GOA FMP Amendments has been evaluated in Section 3.2, as well as in their respective resource groups in determining the comparative baseline condition for each resource category (Chapter 3). Significance ratings were based on scientific interpretation of reliable biological, population, and/or fishery interaction information. "Unknown" cumulative ratings have been assigned in situations where data gaps are too large to make appropriate significance determinations. We agree there are many data gaps in our knowledge of non-target species and their interactions with the fisheries. NEPA recognizes that there may be incomplete or unavailable information underlying a decision, but that this should not forestall decision-making. Instead, NEPA requires that where the costs of obtaining the incomplete information is prohibitive, the EIS should: 1) identify the incomplete or unavailable information; 2) state the information's relevance to evaluating reasonable foreseeable significant effects; 3) summarize credible scientific evidence about impacts, and 4) apply alternative methods generally accepted by the scientific community. Accordingly, NOAA FIsheries will consider research programs to

evaluate current population estimates for non-target and vulnerable species with a view to setting appropriate bycatch limits as information becomes available, as described in the PPA. Refer to Section 2.6.9.2 for a description of the PPA, Chapter 5 for data gaps and research needs, and Chapter 4 for the cumulative effects analysis of the alternatives.

BYC 10
The 2003 Draft PSEIS fails to evaluate the performance of Prohibited Species Catch (PSC) bycatch regulations since the last Environmental Impact Statements (EISs) were prepared. Specifically, showing that current regulations are adequate in protecting depressed crab and salmon stocks.

Sample Quote(s)

> 'The 2003 Draft PSEIS fails to evaluate the performance of Prohibited Species Catch (PSC) bycatch regulations since the last EIS's were prepared or to show that the combined and cumulative effects of current regulations are adequate to protect depleted crab and salmon stocks.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

Analysis of the effectiveness of PSC limits and spatial/temporal measures can be found in Appendix F-2 (Spatial Temporal/Qualitative Analysis (QA) paper) and F-5 (Bycatch QA paper). NOAA Fisheries' analysis shows that spatial and temporal closures, in addition to PSC limits, increase the effectiveness of reducing salmon and crab bycatch.

BYC 11
NOAA Fisheries' current reporting system for bycatch is inadequate and underestimates discards.

Sample Quote(s)

> NMFS claims in its' Qualitative Analysis Paper on Data and Reporting Requirements that a comprehensive reporting system is in place for the entire groundfish fisheries. This statement is not true in terms of bycatch. NMFS states that bycatch estimates are lower than optimal and a better method for estimating discards needs to be developed. If estimates are not accurate, then the reporting methodology must be inaccurate as well.
>
> *Trustees For Alaska* *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries agrees that ongoing improvements to the reporting system and methods of current data collection should continue in an effort to reduce bycatch and improve the accuracy of bycatch estimates. The groundfish fisheries of the BSAI and GOA have the most extensive Observer Program and reporting system in the world. This monitoring system focuses on estimating total catch of target and prohibited species and NOAA Fisheries believes that the current system provides the best available information on catch estimates. For a more detailed explanation of Observer data collection methods, please refer to the North Pacific Groundfish Observer Manual (2003) located at http://www.afsc.noaa.gov/refm/observers/Document.htm. NPFMC and NOAA Fisheries will consider improvements to the Observer Program as outlined in the policy objectives of the PPA.

BYC 12

The effectiveness of proposed and existing incentive plans for reducing bycatch is inadequately explained and analyzed in the 2003 Draft PSEIS.

Sample Quote(s)

'NOAA Fisheries suggests only three additional measures to the status quo management plan for purposes of bycatch minimization under the PPA. The first is to develop incentive programs for the reduction of bycatch. As mentioned, these incentive programs are never explained; therefore, it is impossible to determine exactly what this management tool would add.'

Trustees For Alaska *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries has included a discussion of the existing incentive programs and their effectiveness at reducing bycatch in Appendix F-5 and in the representative resource sections in Chapter 3. Incentive plans, including Individual Fishing Quota (IFQ), American Fisheries Act (AFA) cooperatives, and industry initiatives have been evaluated and proposed as part of the suite of alternatives. Implementation of the PPA commits NOAA Fisheries to continuing and improving upon current incidental catch and management programs. Management measures that encourage the use of gear and fishing techniques that reduce discards, bycatch, and economic discards will also be considered. For further information on other policy objectives of the PPA, refer to Section 2.6.9.

BYC 13

The range included in the Preliminary Preferred Alternative's (PPA) bookends does not commit the North Pacific Fishery Management Council (NPFMC) or NOAA Fisheries to bycatch reduction.

Sample Quote(s)

'A 0-10% or 0-20% reduction in bycatch under either PPA "bookend" is not a commitment to reduction.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

The PSEIS is a programmatic NEPA document. Therefore, the FMP bookends are an illustration of the way in which the alternative's policy and objectives will be carried out. In the case of bycatch reduction, the PPA policy directs fishery management to conform with MSA National Standards, specifically National Standard 9 that requires fishery managers to minimize bycatch to the extent practicable. NPFMC has the ability to choose a certain percentage of bycatch reduction from a range that is outlined in the PPA. By choosing a specific percentage from that range, the NPFMC is reducing bycatch 'to the extent practicable'. NPFMC may exceed that range of bycatch reduction, however, it must be justified through analysis.

Economic and Socioeconomic Effects

Overview

Socioeconomic public comments focused on perceived flaws in the assessment of socioeconomic impacts, such as a lack of socioeconomic data on which to base the analysis and insufficient attention paid to the potential socioeconomic impacts of the alternatives on certain stakeholders.

Data and the Multi-Species Management Model

ESE 1
Use more recent and reliable data in the socioeconomic analysis; use more recent comprehensive sources for historical and contemporary information on labor, residency, and fisheries participation to illustrate effects on small coastal communities.

Use more recent comprehensive sources for labor and participation and historical comparisons of residency and employment to illustrate effects on small coastal communities.

Sample Quote(s)

> '...we share with the Southwest Municipal League (SWAMC) the concern that there is not enough adequate analysis of the participation in fisheries in terms of residency in our coastal communities. We encourage NMFS to look toward more recent, comprehensive sources for labor and participation as well as to make historical comparisons of residency and employment to illustrate how many of the affected changes (such as Steller sea lions closures) have impacted our small coastal communities. We ask that NMFS keep in mind that our small fisheries-dependent communities are just that -fisheries dependent - and that alternatives not well analyzed and reliance on data either not comprehensive or accurate enough can carry severe consequences for our communities. We, therefore, encourage the NMFS to pay very careful attention to its socio-economic data and to make adjustments such as SWAMC and other organizations in Alaska have suggested..'
>
> *Gulf of Alaska Coastal Communities Coalition* *Non-profit organization* *Anchorage, AK*

Response

Data through 2001 were used to describe the socioeconomic baseline conditions. Typically, a complete set of data necessary to conduct a comprehensive socioeconomic analysis is not available until late spring or summer of the following year. Therefore 2002 data were not available in time for inclusion in the 2003 Draft PSEIS. NOAA Fisheries believes use of 2001 socioeconomic data provides sufficient information to evaluate reasonably foreseeable significant economic and social impacts of the alternatives and make a reasoned choice among alternatives. However, NOAA Fisheries agrees that existing data reporting mechanisms compile very limited economic data. NEPA recognizes that there may be incomplete or unavailable information underlying a decision, but that this should not forestall decision-making. Rather, as described in the response to BYC 10, NEPA requires that where the costs of obtaining incomplete or unavailable information is prohibitive, the EIS should: 1) identify the incomplete or unavailable information; 2) state the information's relevance to evaluating reasonable foreseeable significant effects; 3) summarize credible scientific evidence about impacts; and 4) apply alternative methods generally accepted by the scientific community. These data limitations are described in the list of specific socioeconomic information gaps and research needs in Section 5.1.2.10 of the 2003 Draft PSEIS and in the data and reporting requirements QA in Appendix F of the 2003 Draft PSEIS. The years for which data are presented are determined, in part, by the selection of a baseline year against which potential future changes are measured, as detailed in the comparative baseline discussions presented in Section 3.1.4 and Section 3.9.

ESE 2

The 2003 Draft PSEIS contains insufficient information on residence of the labor force in the shoreside processing sector; in some instances the model may overstate or understate Alaskan participation in shore-based processing activity.

Sample Quote(s)

'For shoreplants…the data underestimate Alaskan and local residents to some unknown extent expecially in the BSAI.'

Alice Ruby *Local/Municipal Government* *Anchorage, AK*

'The lack of readily available employment data and the errors inherent in the assumptions used for analysis clearly demonstrate a need for more robust data collection.'

Alice Ruby *Local/Municipal Government* *Anchorage, AK*

'Overall, the PSEIS overestimates fishery participation by residents of the regions adjacent to the fisheries and by Alaskans in genera'

Alice Ruby *Local/Municipal Government* *Anchorage, AK*

Response

NOAA Fisheries believes there is sufficient information in the 2003 Draft PSEIS to evaluate reasonably foreseeable significant economic and social impacts of the alternatives and to make a reasoned choice among the alternatives. Section 3.9.2.3 of the 2003 Draft PSEIS notes that, for the purposes of analysis, inshore processing plant employment was assigned to the region in which the plant is located, consistent with state and federal labor analysis methodologies. No determination of formal or legal residency of processing workers was made. It is known, however, that the labor force of many of the shore plants in Alaska, especially those in the Alaska Peninsula and Aleutian Islands Region (defined in Section 3.9.2.4), have been traditionally dominated by those considered non-residents or relatively short-term residents of the communities or the state. In part, this is a matter of definition, as community population count varies by information source. For example, under U.S. Census methodology, every person present at the time of enumeration is counted as part of the official population of the community, with very few exceptions. Some additional information on workforce demographics and the role that these more-or-less transient processing workers play in the groundfish fishing industry and communities can be found in Section 3.9.6.

Relating place of work to residency in the groundfish fishery is complex (as noted in Section 3.9.3.2 and elsewhere in the 2003 Draft PSEIS), but clearly employment data for shoreplants by region of operation serves as one important type of measure of fisheries associated economic activity in that region. If regional labor assignment, however, is inappropriately construed as indicative of local long-term residency of the workers, then it would appear, at least for some regions, that employment of Alaska residents in processing is overstated. Insufficient information exists to provide a more accurate account of regional employment patterns in the groundfish fisheries. As previously noted, NEPA recognizes that there may be incomplete or unavailable information underlying a decision, but that this should not forestall decision-making. Rather, NEPA requires that where the costs of obtaining the incomplete or unavailable information is prohibitive, the EIS should: 1) identify the incomplete or unavailable information; 2) state the information's relevance to evaluating reasonable foreseeable significant effects; 3) summarize credible scientific evidence about impacts, and 4) apply alternative methods generally accepted by the scientific community. These points are reiterated in the Final PSEIS in Section 4.1.7, which describes the economic model methodology. In addition, this example of incomplete or unavailable information has been added to the list of specific socioeconomic information gaps and research needs in Section 5.1.2.10 of the Final PSEIS.

ESE 3

The assumption that ex-vessel values do not change over the projected period will result in errors in the baseline and in the analysis of the alternatives.

Sample Quote(s)

> 'In addition, assuming fisheries bycatch and relative ex-vessel values do not change over the projection period will propagate errors in the baseline into and throughout the evaluations of all of the alternatives.'
>
> *Ronald G. Clarke* *Industry Advisory Committee* *Juneau. AK*

Response

As noted in the Chapter 4 (Sections 4.5.9, 4.6.9, 4.7.9, 4.8.9 and 4.9.9) economic analysis of the alternatives, model projections of ex-vessel value and product value are based on 2001 prices and product mixes. Actual prices may rise or decline with levels of catch, changes in market conditions, or other factors. The analysis further notes that the extent to which prices would change depends on demand elasticities. No reliable models have been developed to estimate price elasticities in the global whitefish market. Because of the presence of a large number of substitutes for many Alaska groundfish products, the demand for these products is believed to be relatively elastic. In other words, prices for groundfish products are unlikely to be substantially influenced by changes in harvests. Also, ex-vessel prices are largely determined by negotiations between individual processors on one side and by bargaining associations for catcher vessels or individual fishermen on the other side. Ex-vessel prices may not behave as one might expect in a competitive market. Actual prices will ultimately depend on the relative bargaining power of harvesters and processors.

ESE 4

The socioeconomic model is flawed, as it does not include Community Development Quota (CDQ) investment or CDQ employment in the catcher processor and mothership sectors in the Bering Sea pollock fishery.

Sample Quote(s)

> 'Collectively, the CDQ groups now own approximately 25% of the Bering Sea pollock catcher processor and mothership sectors, yet all of the economic benefits from these sector's participation in the fishery is attributed to Washington State. The flawed socioeconomic model does not acknowledge these investments, let alone quantify the investments, even though this information is readily available, including in the North Pacific Council's recent report to Congress regarding the impacts of the American Fisheries Act.'
>
> *Larry Cotter* *Native/Tribal Government* *NA*

Response

NOAA Fisheries disagrees that the socioeconomic model is flawed. The importance of western CDQ program investment in the groundfish fishery, including investment and partnerships in the catcher processor and mothership sectors, is presented in Section 3.9.4 of the 2003 Draft PSEIS. In terms of employment, Section 3.9.2.3 of the 2003 Draft PSEIS notes that catcher processor and mothership employment is assigned to the region of the vessel owner's residence as listed in CFEC vessel registration files or NOAA Fisheries Federal permit data for the purposes of sector and regional level analysis. Actual employment patterns, however, may vary greatly by operation depending upon, among many other factors, the ownership pattern of any given vessel. For example, it is known that the CDQ program led to many seasonal job opportunities for residents of eligible Alaska communities aboard catcher processors and motherships, which are now owned in part by CDQ entities. CDQ employment is discussed in detail in Section 3.9.4. While the information on CDQ employment is relatively complete due to a variety of reporting requirements, there is insufficient information to provide a more comprehensive account of regional employment patterns in the groundfish fisheries. These points have been reiterated in the Final PSEIS in Section 4.1.7, which describes the economic model methodology. In addition, this example of

incomplete or unavailable information has been added to the list of specific socioeconomic information gaps and research needs in Section 5.1.2.10 of the Final PSEIS.

Area Closures

ESE 5

Near-shore area closures and failure to maintain access to traditional fishing grounds will disproportionately affect smaller vessels and rural communities.

Sample Quote(s)

'Closures in the near-shore areas of the GOA that coincide with traditionally fished areas will have the greatest negative effect on both vessel safety and rural communities.'

Alice Ruby *Local/Municipal Government* *Anchorage, AK*

'Numerous area closures will decrease fishing vessel safety and will disproportionately affect smaller vessels and rural communities.'

Alice Ruby *Local/Municipal Government* *Anchorage, AK*

Response

The effects of area closures on fishing vessel safety and their disproportionate effects on small vessels and associated communities are sufficiently described in Sections 4.5.9, 4.6.9, 4.7.9, 4.8.9 and 4.9.9 of the PSEIS. The rationalization of fisheries under Alternative 3 and the PPA may mitigate some of these negative effects, by eliminating the race for fish and allowing vessel owners to choose when and where they fish.

Rationalization and Limited Access

ESE 6

Rationalization of the fisheries could lead to severely negative impacts to rural communities; limited access programs are no panacea for conservation and additional programs to end the race-for-fish should be considered.

Sample Quote(s)

'Without proper safeguards, rationalization of the fisheries could lead to severely negative impacts to rural communities and their residents..'

Alice Ruby *Local/Municipal Government* *Anchorage, AK*

'Limited access quota programs are no panacea for conservation, and additional programs should be examined as tools to end the race for fish, reduce the waste and bycatch associated with derby fisheries, improve compliance with other conservation regulations, improve vessel and crew safety, increase the value of the catch, and protect dependent fishing communities from pre-emption or consolidation of fishery

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

Information on potential negative community impacts resulting from rationalization programs is presented in Section 4.7.9.2 under the discussion of direct and indirect effects of FMP 3.1 and FMP 3.2. The potential effects of rationalization on communities are further described in the Overcapacity QA in Appendix F-8 of the 2003 Draft PSEIS. As noted in those discussions, potential negative impacts to local communities resulting from rationalization programs are largely associated with the nature and magnitude of consolidation of harvesting and processing capacity or effort following the implementation of rationalization measures (although other impacts are associated with changes in temporal distribution of effort). It is likely that future rationalization programs would incorporate some type of regional or

community protection measures to provide for the sustained participation of fishing communities, such as those currently being considered in the ongoing analysis and evaluation of potential rationalization approaches for the BSAI crab fisheries. To a large extent, impacts to communities would be determined by the efficacy of any community protection measures included in any particular rationalization program. As noted in the 2003 Draft PSEIS, the discussion of these impacts is largely qualitative as particular rationalization approaches and accompanying regional or community protection measures will depend on program specifics that have not been developed. NOAA Fisheries agrees that rationalization in and of itself would not address all conservation related management issues in the groundfish fisheries.

ESE 7

The caveat in the 2003 Draft PSEIS that Individual Fishing Quotas (IFQs) set aside for smaller vessels could mitigate effects of area closures is important and is potentially lost in the overall discussion of rationalization; smaller vessels are particularly vulnerable to cumulative impacts from adverse conditions in multiple fisheries.

Sample Quote(s)

> 'The 2003 Draft PSEIS notes that the effects of area closures which would displace smaller vessels could be mitigated somewhat if individual fishing quotas were set aside for smaller vessels to fish in certain nearshore areas. This is an important caveat and one that is potentially lost in the overall discussion of rationalization. That is, the cumulative effects to smaller vessels and rural communities in general take on a higher importance in light of layered management measures, decreased revenues from other fisheries (salmon, crab), decreased state revenue sharing, and so forth.'
>
> *Alice Ruby* *Local/Municipal Government* *Anchorage, AK*

Response

Good suggestion. This point has been further elaborated on in Section 4.7.9.2 and in Appendix F-8 of the Final PSEIS. The Final PSEIS also notes that the MSA Section 303(d)(5)(C) mandates that any new IFQ program must consider the allocation of a portion of the annual harvest in the fishery for small vessel owners. Indeed, the sablefish and halibut IFQ programs implemented in 1995 included small boat set-asides, and CDQ allocations.

Furthermore, because the SEIS is "programmatic," the discussion of these impacts is largely qualitative as particular rationalization approaches and accompanying regional or community protection measures will depend on program specifics that will be developed when specific actions are contemplated. If IFQs are pursued in the future, a much more detailed analysis of options and impacts will be prepared. The 2003 Draft PSEIS addresses the cumulative effects to small vessels from adverse conditions in multiple fisheries under each of the alternatives discussed in Sections 4.5.9, 4.6.9, 4.7.9, 4.8.9 and 4.9.9.

Community Impacts

ESE 8

The magnitude of the impacts of Alternative 4 to coastal communities, local governments, the fishing industry, and seafood consumers is understated in the 2003 Draft PSEIS; Alaska Native communities disproportionately dependent on fishing are particularly vulnerable under Alternative 4.

Sample Quote(s)

> 'Unfortunately, the full magnitude of that "pain" associated with Alternative 4 is not adequately captured by the 2003 Draft PSEIS -- either from an economic, social or cultural standpoint. We are particularly concerned that the magnitude of the disruption that might caused to the industry, coastal communities, consumers and other national interests are grossly understated in the document.'
>
> *Doug Christensen* *Federal Agency* *Seattle, WA*

'The major economic underpinning of the City of Kodiak is and always has been fisheries. The Port of Kodiak and Unalaska/Dutch Harbor are routinely in the top ten ports in the country in terms of both volume and value of fisheries landed. Fish processing plants are also a significant component of our fishing economy. Many community members make their living as fishermen or processing workers. A majority of the City of Kodiak's basic economy is in fish harvesting, processing or in supplying goods and services directly to the fishing industry.'

Linda Freed *Local/Municipal Government* *Kodiak, AK*

Response

Indicators of regional engagement in and dependency upon the groundfish fisheries are provided in the socioeconomic existing conditions discussion in Section 3.9.3, and supplemental detailed information on a regional and community basis is provided in the "Sector and Regional Profiles of the North Pacific Groundfish Fishery" available on the NPFMC website, and incorporated into the 2003 Draft PSEIS by reference. Chapter 4 of the 2003 Draft PSEIS discusses the economic, social, natural and physical effects on the human environment of each FMP bookend. As described in Chapter 4, the assessment of socioeconomic impacts considers several important factors, including impacts on harvesting and processing sectors; regional impacts; CDQ-related impacts; subsistence-related impacts; environmental justice impacts; impacts on consumer benefits; and impacts on benefits from marine ecosystems (other than those benefits related to commercial groundfish fisheries), including non-market benefits (e.g., recreational fishing, existence value) and tourism.

The adverse impacts to communities that would result from changes in these variables under Alternative 4 are clearly stated. The FMP bookend 4.1, for example, is characterized as having "profound negative regional and community social impacts that would result from loss of revenues, economic opportunities, and employment" in the Alaska Peninsula and Aleutian Islands region. Under FMP 4.2, regional and community impacts are characterized as being "immediate, significant, and adverse for all regions in all categories of effects." The particular vulnerability of fisheries dependent Alaska Native communities under Alternative 4 is noted in the Environmental Justice discussion in Section 4.8.9.5. The vulnerability of Alaska Natives dependent on fishing are also addressed in response to the Alaska Native Issue statement AKN 1 at the beginning of the Comment Analysis Report.

Sustainability

ESE 9

Consider the consequences of your actions and how they will affect future generations; we must have healthy oceans to sustain economic use of resources and the viability of ocean-dependent communities.

Sample Quote(s)

'The decline of ocean mammals is a clear warning sign. But even if the basic respect for the right of species to survive doesn't compel intensive protection of our oceans, there are cold hard economic realities, too. If we fish our waters beyond the point of sustainability, the fishing industry itself will collapse. In the long-term, strict, smart legislation is in everyone's best interest.'

R. Michael Burns *Citizen* *Colorado Springs,*

'I believe it is important to protect the ocean and all that live in it. I believe there should be a way to do this without ruining someone's livelihood. There are always less destructive ways of fishing and management practices that can be used to make sure that the people who make a living with the ocean won't destroy it in the process because this doesn't benefit anyone.'

Angie Hughes *Citizen* *Red House, WV*

Response

The sustainability of fisheries and communities was one of the nine policy goals around which the 2003 Draft PSEIS was constructed. Table ES-2 in the executive summary provides an overview of the impacts on sustainable fisheries and communities. With the exception of Alternative 2, the 2003 Draft PSEIS concludes that under the alternatives considered, harvest levels of groundfish target species, prohibited species, and forage species are sustainable. However, due to a lack of information, the consequences on "other species" and "non-specified" species are currently unknown. The 2003 Draft PSEIS also concludes that Alternatives 1, 3 and the PPA continue to provide economic and community stability and access to a healthy marine ecosystem for future generations, while Alternative 2 may lead to some economic and ecosystem problems in the long-run, and Alternative 4 reduces the economic viability of fisheries and fishery dependent communities.

ESE 10

Eliminate bycatch by mandating new technologies. If businesses and employees are negatively affected, then provide assistance and retraining programs to generate new kinds of ocean related businesses and jobs that are safer and more profitable, such as ecotourism.

Sample Quote(s)

> 'Help those businesses and workers that stand to lose work find other less dangerous and more profitable employment. Perhaps through environmental tours of the involved sea areas.'
>
> *Gene Rossano* *Citizen* *Bradenton, FL*

Response

The MSA requires that bycatch and interactions with marine mammals and seabirds be reduced or eliminated to the extent practicable. Alternative 4 in particular would reduce bycatch and interactions with mammals and seabirds, and at the same time is likely to negatively affect many fishery-related jobs and businesses. Typically, persons who choose to work in fishery related jobs are well paid to compensate for the risky conditions and uncertainty inherent in commercial fishing and more profitable employment opportunities in fishing communities may be limited. These lifestyle choices are not mandated, nor can the U.S. government mandate that other industries be established. Currently, it is outside the jurisdiction of NOAA Fisheries to provide re-training if specific alternatives result in displaced businesses or jobs.

Other Comments

ESE 11

The 2003 Draft PSEIS does not take into account non-anthropocentric and socioeconomic impacts; this philosophy does not give economic account to the habitat or other non-human species.

Sample Quote(s)

> 'The 2003 Draft PSEIS for groundfish fisheries in the Bering Sea and Gulf of Alaska, does not take into account the non-anthropocentric and socioeconomic impacts of some proposed fishing procedures. This statement follows to the property philosophy which does not give economic account to the habitat, nor other non-human species -- a markets system directly evolved from the medieval church's placement of mankind as the ruler of nature. When laws and policy are drafted to the end, that they favor limited government and unlimited enterprise, global destruction will inevitably follow.'
>
> *Joel Danforth* *Citizen* *Denver, CO*

Response

Chapter 4 of the 2003 Draft PSEIS discusses the economic, social, biological and physical effects on the human environment of each FMP bookend. As described in Chapter 4, the assessment of socioeconomic impacts considers several important factors, including impacts on harvesting and processing sectors; regional impacts; CDQ-related impacts; subsistence-related impacts; environmental justice impacts; impacts on consumer benefits; and impacts on benefits from marine ecosystems (other than those benefits related to commercial groundfish fisheries), including non-market benefits (e.g., recreational fishing, existence value) and tourism. With specific reference to non-anthropocentric effects, the NEPA requires federal agencies to study the effects of the proposed action on the quality of the human environment; however, Section 3.9.8.5 of the 2003 Draft PSEIS exceeds this standard by in fact addressing possible non-anthropocentric considerations.

ESE 12
Analysis of impacts to the support industry in the Puget Sound area is insufficient in the 2003 Draft PSEIS, particularly for Alternative 4.

Sample Quote(s)

> 'We do not see those costs discussed or evaluated in the PSEIS. In fact, the entire support industry seems to have been given short shrift in the document. We see very little discussion of the role played by service providers, machinery and equipment manufacturers, reprocessors, electricians, shipyards, plumbers, cold storage operators or any of the other businesses that supply and support the Alaskan groundfish fisheries here in the Puget Sound. Nor is there an effort to calculate the impact that the restructuring of the fishery as contemplated by Alternative 4 would have on the support sector of the industry. This is, in our view, unacceptable and should be corrected in the final document.'
>
> *Frank Breen* *Industry Advisory Committee* *Seattle, WA*

Response

As described in Sections 4.5.9, 4.6.9, 4.7.9, 4.8.9, and 4.9.9, the assessment of socioeconomic impacts considers several important factors, including regional impacts. The indicators used to assess potential regional effects include in-region processing and related effects; regionally owned at-sea processors; extra-regional deliveries of regionally owned catcher vessels; in-region deliveries of regionally owned catcher vessels; and total direct, indirect, and induced labor income and employment as measured in Full Time Equivalents (FTEs). These indicators parallel the indicators provided in the socioeconomic existing conditions discussions in Section 3.9.3. Detailed information on existing conditions specific to the Washington Inland Waters region, including the Puget Sound area, is provided in the "Sector and Regional Profiles of the North Pacific Groundfish Fishery" available on NPFMC website, and incorporated into the 2003 Draft PSEIS by reference.

As discussed in Chapter 4, the indirect and induced indicators reflect changes in a number of important regional characteristics, including changes to the support service sector, as well as state and municipal revenue generated by fishing, and indirectly to population, to the extent that it is related to employment opportunities. As noted in Chapter 4, total direct, indirect, and induced labor income and FTE impacts are adverse and significant for the Washington Inland Waters region for both Alternative 4 FMP bookends. As discussed in Section 4.8.9.2, under FMP 4.1 within this region there would be a 66 percent decrease in labor income and a 64 percent decrease in employment from an Alaska groundfish related base of almost $560 million and employment of over 10,300 FTEs. Both of these baseline figures are substantially higher than those of any other region reflecting, among other factors, the importance of the regional support service industries related to the Alaska groundfish industry. Regional impacts under FMP 4.2 are characterized as immediate, adverse, and significant for all socioeconomic categories of effects, including indirect and induced impacts to income and employment. Under this management scenario, adverse impacts could be reduced somewhat, as fisheries could be reopened following certification, albeit at significantly reduced harvest levels.

ESE 13

Consider both socioeconomic and biological data when developing conservation measures, rather than emphasizing biological data and assessing socioeconomic impacts after the fact. Using this approach could help develop management measures that meet the conservation goals of FMP 4.1 but that are more cost effective than what is currently presented in the 2003 Draft PSEIS.

Sample Quote(s)

'For example considering ways to protect as much important habitat as possible with the least possible economic impact will lead to much more cost effective results than formulating habitat protection measures with biological data alone and then looking at economic impacts after the fact. From the document, its appears as though the latter approach was used in developing the management measures, and the consequences are particularly evident in the socioeconomic analysis of Alternative 4.1. I challenge the analysts to reexamine the choice of specific management measures selected for Alternative 4.1 and redesign them incorporating economic data to meet the same conservation objectives in a more cost effective manner.'

Geoff Shester *Academia* *Stanford, CA*

Response

In the 2003 Draft PSEIS, NOAA Fisheries rigorously explores and objectively evaluates a reasonable range of alternatives to address these concerns. As described in Chapter 2, the elements of FMP 4.1 were developed through a process with substantial public input. As with all other FMP bookends, if FMP 4.1 was selected as a bookend to illustrate the PA, a substantial amount of time would be needed to determine the specifics of the management measures that would be used to implement it. Taking that additional time would help ensure that cost effective measures are implemented regardless of which alternative is selected as the PA. However, a key element of FMP 4.1 is a much more conservative method for establishing acceptable biological catches (ABCs) and, therefore, much lower levels of catch for many target species. This would be projected to result in substantial, adverse socioeconomic impacts regardless of how the other elements of this alternative are implemented.

ESE 14

Analysis of the Preliminary Preferred Alternative in relation to Environmental Justice is inconsistent.

Sample Quote(s)

'Analysis of the PPA in relation to Environmental Justice is inconsistent.'

Alice Ruby *Local/Municipal Government* *Anchorage, AK*

Response

Comprehensive information on Environmental Justice existing conditions is provided in Section 3.9.6. Environmental Justice analysis of the PPA is presented in Section 4.9.9.5 for regional, CDQ, and subsistence issues, and is consistent with the analysis provided for other alternatives.

ESE 15
The Preliminary Preferred Alternative (PPA) strikes an appropriate balance between sustainability of the resource and the sustainability of fishing communities.

Sample Quote(s)

> 'When the NPFMC adopted this PPA at its June 2003 meeting, it recognized the value of maintaining important features of the existing risk-averse management policy, while at the same time setting reasonable policy objectives to make positive changes for the future. We at American Seafoods Company support this progressive approach. Our company and its 1,300 employees rely on prudent management of marine resources off the coast of Alaska. We rely on these healthy fisheries for jobs, as a source of healthy protein for consumers, and as a way of life. The balance struck in the Council's Preferred Preliminary Alternative will help preserve the sustainability of the resource and fishing communities as required by the Magnuson-Stevens' Act.'
>
> *Jan Jacobs* *Commercial Fishing* *Seattle, WA*

Response

NOAA Fisheries agrees that responsible stewardship and sustainability are essential components of a fishery management policy for the Alaska groundfish fisheries. The PPA identified in the 2003 Draft PSEIS prioritizes a precautionary approach that applies "judicious and responsible fisheries management practices, based on sound scientific research and analysis, proactively rather than reactively." Specific objectives include conservative harvest quotas, a constraining cap on optimum yield (OY) for the Bering Sea/Aleutian Islands, improvements in bycatch and incidental catch management, measures to avoid impacts to habitat and marine mammals, while promoting the sustainability of fishing communities. Section 4.9 of the 2003 Draft PSEIS presents the analysis of the PPA.

ESE 16
Industrial-scale fisheries must be eliminated.

Sample Quote(s)

> 'The quest for short-term profits by huge fishing boats with their massive nets will, in the long run, destroy the potential for our oceans to feed people for generations to come. Please take the long view and stop the massive destruction of our fish population so we can benefit from this vital food source in the future.'
>
> *Charley McKenna* *Citizen* *New York, NY*

Response

NOAA Fisheries concerns itself with sustainability of total catch amounts rather than the size of the operations conducting the fishery. There has been no evidence in the North Pacific that justifies the claim that industrial-scale fisheries have more negative effects than small-boat fisheries. The Bering Sea pollock fisheries—considered by many as one of the most industrialized fisheries in the world—has recently received a preliminary certification of sustainability by the Marine Stewardship Council. Furthermore, larger vessels with greater revenues are much more likely to be able to accommodate observers and advance catch reporting technology than are smaller vessels. Finally, all of the alternatives in the PSEIS will result in a mix of both small- and large-scale fisheries.

Ecosystem Health and Management

Overview

The public comments on the ecosystem (ECO) are, for the most part, strongly in support of ecosystem-based management and protection of the ecosystem as management goals. Suggestions and clarifications were also offered to define ecosystem-based management and to encourage attention to uncertainty, a precautionary approach to fisheries management, the direct relationship between a sustainable ecosystem and long-term economic sustainability, and global warming and marine pollution. Finally, a number of comments focused on the ecosystem analysis in the 2003 Draft PSEIS, calling attention to perceived shortcomings and recommending improvements and clarifications for the Final PSEIS.

Preservation of the Ecosystem

ECO 1
We need to protect our ecosystem.

Sample Quote(s)

'Biological diversity needs to be protected, as do endangered wildlife species. This is a most important opportunity, and I urge you to put the health of the region first. Giving into pressures from the fishing community that will ultimately rebound to their own detriment would be shortsighted and disastrous.'

Kathry Parke *Citizen* *Pittsburg, KS*

'This area is one of the world's most biologically productive and diverse marine environments. It accounts for more than 50% of the annual U.S. fish catch. Only by first protecting the ecosystem, can the regions fisheries be sustained over the long-term.'

Karin Culverhouse *Citizen* *Redwood City, CA*

'Our human actions and industries do not take precedence over the welfare of ocean life. We must take whatever steps we can toward achieving the best balance possible with nature, so that all life can flourish.'

B W *Citizen* *Middleburgh, NY*

Response

The NPFMC and NOAA Fisheries recognize that commercial fisheries cannot be biologically and economically sustainable without a healthy ecosystem, and that fisheries management must take ecosystem health into account when making management decisions. In fact, a major purpose of this PSEIS is to examine the existing body of information regarding baseline conditions of the BSAI and GOA ecosystems and identify sensitive ecosystem components so that they can be more fully incorporated for protection by fishery management policies and practices.

In Chapter 3 of the 2003 Draft PSEIS, Section 3.10 reviews past and present human activities and natural events that have cumulatively shaped and, in some cases, continue to influence the ecosystem baseline condition. The discussions place particular emphasis on evidence concerning climatic phenomena, such as regime shifts, interdecadal oscillations, and ENSO and La Niña events, which may serve as ecosystem forcing agents, and on interactions among climate, commercial fishing, and ecosystem characteristics. The discussions also describe analytical models currently being used or developed to improve our understanding of physical and biological ecosystem processes and the effects of commercial fishing on those processes. As these tools provide new insights, measures to minimize harmful effects on the ecosystem can be incorporated into management of the groundfish fisheries.

Then, in Chapter 4, a range of alternative fisheries management policy approaches is evaluated with respect to their predicted direct/indirect and cumulative effects. These alternatives, described in Chapter 2, Section 2.6 and summarized in Executive Summary Tables ES-1 and ES-2, place emphasis on different combinations of policy objectives (Table ES-1) and have the potential to affect the environment in different ways (Table ES-2). The responsibility and shared goal of NPFMC and NOAA Fisheries, however, is to achieve and maintain a balance between long-term protection of the marine ecosystem and the sustainable use of marine resources. Accordingly, the PPA is an ecosystem-based management approach designed to achieve this balance. It recognizes that ecosystem protection and sustainable fisheries management go hand-in-hand. As discussed in Chapter 2, Section 2.6.9.2, and summarized in Tables ES-1 and ES-2 of the Executive Summary, the PPA is both precautionary and adaptive. It would address differing levels of uncertainty and proactively apply fisheries management practices based on scientific research and analysis in order to protect the marine ecosystem and ensure the long-term sustainability of its fishery resources. Without protecting the ecosystem, we cannot have sustainable fisheries. NPFMC and NOAA Fisheries are committed to both.

ECO 2
Overfishing and destructive fishing methods are destroying the ecosystem and have led to population declines among many marine species.

Sample Quote(s)

'The health of our oceans is an essential ingredient to the health of our planet -- support healthy oceans.'
Kimberley Graham *Citizen* *Coronado, CA*

'With the biodiversity suffering from years of overfishing and indiscriminate harvesting techniques it is not surprising that we now find the public is anxious to protect our oceans from further destruction. I urge you to take steps to increase the sustainability of fishing and preservation of marine life. It is a global treasure that we are just borrowing from the future generations.'
Rita Koutsodimos *Citizen* *Vancouver, NA*

Response

NOAA Fisheries is actively researching the potential of bottom trawling to damage living marine habitats, but we disagree that overfishing of target species has led to declines in their populations. For target groundfish, the general strategy of commercial fishing is to remove fish from the sea and intentionally bring stocks to levels below those that would exist in a pristine, unfished environment. As discussed in greater detail in Appendix B.4, Section B.4.2, overfishing is defined explicitly in Section 3(29) of the MSA and by the May 1, 1998 National Standard Guidelines. Section 303(1)(10) of the MSA mandates that FMPs specify objective and measurable criteria for identifying when a particular fishery is overfished and, if the fishery approaches an overfished condition, implement conservation and management measures to prevent or end overfishing and rebuild the fishery. The Alaska groundfish fisheries are managed conservatively in compliance with the MSA and the National Standard Guidelines to ensure that overfishing of target species, as defined by the MSA, does not occur. The primary way in which this is accomplished is by setting total allowable catch (TAC) for individual target species at levels always at or below their acceptable biological catch (ABCs). The ABC for most target species is determined on the basis of biomass estimates from survey data that are collected and updated annually or biennially. Therefore, the Agency believes that overfishing of target groundfish species is not occurring in the BSAI and GOA.

A major goal of this PSEIS is to evaluate the effects of the current groundfish fisheries management regime and potential impacts of the alternative future management policies on non-target species and on marine invertebrate populations that comprise living substrate, including habitat area of particular concern (HAPC). These determinations are necessarily inferential, because data on the population status of many non-target species are lacking or sparse. NOAA Fisheries recognizes that non-target vertebrates and

invertebrates, including species that form living substrates, support important ecosystem functions. Therefore, sections of the PSEIS have been dedicated to examining available information on the baseline conditions of these groups (in Chapter 3, Affected Environment) and how they might be affected by the alternative fisheries management policies (in Chapter 4, Environmental and Economic Consequences). These sections address Prohibited Species, Other Species, Forage Species, Non-Specified Species, and Habitat, including Living Substrates in Shallow Water and Living Substrates in Deep Waters. As shown in Table ES-1, the range of alternative fisheries management policies has been designed to include varying degrees of protection and economic trade-offs for non-target species and habitat.

In recognition of the need to increase the quantity and specificity of data on non-target components of the BSAI and GOA ecosystems, NPFMC and NOAA Fisheries made the decision to incorporate an additional PSEIS chapter on Research and Management (Chapter 5). This chapter presents detailed discussions of information gaps and research needs for all of the non-target groups, with particular emphasis on EFH (Section 5.1.2.7), including the effects of commercial fishing on benthic habitat and the spatial extent of fishing-induced disturbance. Additional Chapter 5 sections are devoted to information gaps and research needs for seabirds (Section 5.1.2.8), marine mammals (Section 5.1.2.9), socioeconomics (Section 5.1.2.10), and the ecosystem (Section 5.1.2.11). A major purpose of this chapter is to inform the marine research community of research priorities that will be needed to support the fisheries management policy alternative that is selected for implementation.

ECO 3
We need to limit the mortality of non-food animals too.

Sample Quote(s)

> 'Fisheries should not be the reason for the extinction of sea species. It should be done in a way that causes the least harm to other species.'
>
> *Teresa Saraiva* *Citizen* *Amadora, NA*

> 'As humans, we interfere with a vast number of ecosystems of which we do not naturally form a part. it is our responsibility to take the necessary measures to minimize our impact on these ecosystems, which in this case means taking all necessary steps to not cause unnatural depletion of the seals, sea lions, or seabirds that we are threatening. Our commercial activity cannot disrupt the natural balances of marine ecosystems -- or at least, that is the ideal that we must strive for.'
>
> *Christi Turner* *Citizen* *Portland, OR*

Response

In Chapter 3, Affected Environment, the 2003 Draft PSEIS examines the past and present status of many non-target invertebrates, fish species, seabirds, and marine mammals that inhabit the BSAI and GOA fishery management areas and the surrounding North Pacific region. The purpose of this extensive data review is to evaluate the present or baseline status not only of Target Species and Prohibited Species targeted by other fisheries, but also of key members of the Other Species, Forage Species, Non-Specified Species, Habitat, Seabird, and Marine Mammal resource categories that depend upon the physical marine environment and upon one another as functional components of the BSAI and GOA ecosystems. This review is presented in Section 3.10. Then, in Chapter 4, Environmental and Economic Consequences, the range of alternative fisheries management policy approaches is evaluated with respect to their predicted environmental impacts. These impacts are assessed not only for the groundfish fisheries Target Species, but also for all of the non-food species and groups examined in Chapter 3, along with the ecosystem itself. The rationale for undertaking these broad data reviews and impact analyses is twofold: first, that all of these interdependent species–not just target species used by humans as food–are important and worthy of protective management; and second, that to be sustainable over the long-term, the Alaska groundfish fisheries must be supported by a robust and resilient ecosystem.

ECO 4
We don't know enough about the ecosystem to meddle with it.

Sample Quote(s)

'We don't understand enough about the ecosystem to go meddling in it yet. If we accidentally wipe out a keystone species, the economic consequences could be catastrophic.'

Max Rible *Citizen* *Sunnyvale, CA*

Response

NOAA Fisheries disagrees with the concept that we must not allow any fishing if we lack complete knowledge of these systems. Although it is true that information on the physical oceanographic features and on many of the non-target species comprising these ecosystems is sparse, we believe it is appropriate to monitor and protect ecosystem components while supporting and conducting research to learn as much as possible about them. The alternatives in this PSEIS were designed to clearly illustrate the ecological and economic tradeoffs in managing under various assumptions about uncertainty about ecosystem processes and the Preliminary Preferred Alternative provides a balanced approach to managing under uncertainty. Rather than completely precluding fisheries, we believe it is more responsible to proceed with caution and awareness. We also believe that fisheries management must take the ecosystem into account, because healthy ecosystems are necessary to ensure that fisheries will be sustainable over the long-term. Chapter 4 of the 2003 Draft PSEIS evaluates a range of fisheries management alternatives that are based on different assumptions regarding our uncertainty about the ecosystem and that incorporate protective buffers or mitigation measures commensurate with the varying degrees of uncertainty, as summarized in Table ES-1. Moreover, Chapter 5 presents a detailed listing and discussion of information gaps and research needs that, when addressed by future marine studies, will greatly improve our understanding of the BSAI and GOA ecosystems and allow our fisheries to be managed with greater precision and awareness of possible ecosystem effects. In particular, Section 5.1.2.11 identifies and discusses BSAI and GOA ecosystem research priorities to facilitate the protection of ecosystem components and thus help to ensure the long-term sustainability of the groundfish fisheries.

Uncertainty and Caution

ECO 5
Fisheries management must be cautious and take into account the high degree of uncertainty about the marine ecosystem.

Sample Quote(s)

'Please let's keep the balance that our ecosystem needs. Everything is interdependent - just because we cannot visually see the effects of our actions to-date on the marine world shouldn't lull us into pretending that we are not damaging an important part of the chain of life.'

Araminta Thorne *Citizen* *San Francisco, CA*

'The fallacy in NOAA Fisheries' argument is that managers must have complete information to do ecosystem-based management when such knowledge is not required to permit massive amounts of fishing under the current management regime. If the objective were to "manage" the ecosystem, then omniscience would be required. The objective of ecosystem-based management is not to manage the ecosystem, however, which would be folly; it is to manage human activities in the face of considerable uncertainty and attendant risks with the intent of avoiding deleterious changes to the environment by protecting ecosystem components in a precautionary, proactive manner, while research on ecosystem processes continues.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

Attention to uncertainty is one of the key principles that guides current management policy for the BSAI and GOA groundfish fisheries and differentiates the range of fisheries management policy alternatives described in Chapter 2, Section 2.6. The alternatives have been structured to make different assumptions about our uncertainty regarding environmental variables and incorporate different buffers, that is, different levels of precautionary measures, commensurate with the assumed levels of uncertainty. Section 2.5.3, Establishing Limits in the Face of Uncertainty, examines the question of how fishery managers take uncertainty into account when making decisions about such matters as stock assessment and setting fishery targets and limits. It discusses the processes used to establish the goals and limits of the groundfish fisheries and, at the same time, to account for uncertainty at every level in order to manage the system in a precautionary manner, as required by NPFMC policy. Detailed supporting information is provided in Appendix B.4, Fishery Management Tools.

Long-Term Sustainability

ECO 6
Long-term sustainability of all marine ecosystem components, including target fish stocks, should be the primary goal of fisheries managers.

Sample Quote(s)

> 'We need to make our industries sustainable with respect to the ecosystems that they impact. By this I mean reducing the level of ecological impact to bare minimum and maintaining as much biodiversity as possible. Because ecosystems are complex, interconnected webs of species that depend on each other, sustainable fishing is a must to preserve other marine species.'
>
> *Seth Crouser* *Citizen* *Athens, OH*

> 'Because this is the first comprehensive environmental impact statement for fisheries management in the United States, and because it covers one of the most productive ecosystems on Earth, this SEIS will set an important national precedent and must be done with the sustainability of the Bering Sea ecoregion as the ultimate goal.'
>
> *Elaine Koplik* *Citizen* *Delmar, NY*

Response

The BSAI and GOA groundfish fisheries have a strong track record of ensuring that TACs are set annually at or below ABCs, and that the ABCs are based on annually or biennially updated population data. Another guiding principle for sustainability is to take environmental variables into account to compensate for natural changes in the physical environment. For example, the groundfish fisheries managers track climatic information, particularly data relating to regime shifts that could affect stock productivity, and if conditions warrant, TAC levels are altered accordingly. The fact that we have no evidence that target stocks are presently depleted to an overfished level indicates that these sustainability measures are effective. For example, Greenland turbot, a species which is presently being adversely affected by climate change, has not been depleted to a level approaching an overfished condition, in part because fisheries managers take the effects of climatic variables into account in setting the annual TAC for this species. As noted in our response to ECO 01, the joint responsibility of NPFMC and NOAA Fisheries is to achieve and maintain a balance between long-term protection of the marine ecosystem and the sustainable use of marine resources. The range of fisheries management policy alternatives and FMP bookends presented in Chapter 2, Section 2.6 incorporates various measures intended to ensure that the Alaska groundfish fisheries remain sustainable over the long-term. Table ES-2 in the Executive Summary compares the alternatives, including the PPA, with respect to their potential to affect the sustainability of target stocks, fisheries and communities dependent on the fisheries, food web and biological community stability, and other environmental components. This table and the accompanying text discussions are

intended to allow the reader to evaluate the alternatives with respect to these sustainability criteria. Please refer to the responses to ECO 2 and ECO 5 for more information.

Global Warming and Pollution

ECO 7
Fisheries management should take the added stress of global warming and pollution into account and use foresight and caution when setting goals.

Sample Quote(s)

'Alaska's oceans are under pressure from overfishing, pollution, and global warming. The establishment of new protected areas to protect biological diversity and restore populations of threatened wildlife may also be required.'

Dennis Lenz *Citizen* *Massapequa Park,*

' In addition to fishing impacts, Alaska's oceans are also under stress from pollution and global warming. We must take all these threats into account and manage this region with foresight and caution so we can leave future generations a living Bering Sea abundant with fish and other wildlife.'

Denys Kelly *Citizen* *Cape May Court*

Response

As noted in the response to ECO 6, the groundfish fisheries managers do take climate change, including long-term effects, into account when setting annual TAC levels. From the standpoint of the NEPA impact assessment process, global warming and pollution are events external to the fisheries management alternatives that could occur in the reasonably foreseeable future and interact additively or synergistically with fishery management actions to produce cumulative effects. Accordingly, in Chapter 4 the PSEIS considers the effects of climate change, including global warming, and chemical pollutants, including potential fuel and oil spills from marine vessels, in predicting and evaluating the potential cumulative effects of the alternatives. Tables showing how climate change and pollution are treated in the cumulative effects analyses are presented in Appendix A and in Table ES-2 of the Executive Summary (ES).

Ecosystem-based Management

ECO 8
I support ecosystem-based management because it places long-term sustainability–including sustainable fisheries– before short-term profits.

'Please adopt a strong management regime that protects the Bering Sea ecosystem. It is essential to protect one of the world's most biologically productive and diverse marine environments and build ecosystem-based management policies into fishery management plans that will sustain the region's fisheries for the long-term, as well as protect the natural environment.'

Gerrie Shapiro *Citizen* *Irvington, NY*

'Ecosystems management is a much more sustainable approach to this very precious and irreplaceable resource. Please vote for the future by supporting this important legislation.'

Holly C. VanScoy, Ph.D. *Citizen* *Austin, TX*

'Conservation problems have scientific, economic, and social components (Mangel et al. 1996), therefore an ecosystem-based framework of fisheries management must address not only protection of ecosystems but also economic and social aspects of fisheries to ensure that these are consistent with FMP goals and objectives and do not undermine the ability of ecosystems to produce goods and services on a sustainable basis across generations.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries agrees that long-term economic sustainability can best be achieved through management policies and actions that promote a robust, diverse, and resilient ecosystem. As stated in Section ES 10.0 in our response to Frequently Asked Question 21, ecosystem-based management principles recognize that our ability to predict ecosystem behavior is limited and that diversity is important to ecosystem function. Ecosystem-based management is multifaceted. Present groundfish fisheries management policy and the FMPs currently in effect incorporate ecosystem-based management principles primarily through management strategies that account for uncertainty, address the needs of other species, and promote participation, fairness, and equity in policy and implementation. As summarized in Table ES-1, this PSEIS presents a range of potential future fisheries management alternatives that incorporate different degrees of emphasis on ecosystem considerations. The PPA, discussed in detail in Sections 2.6.9 and 4.9 and summarized in Section ES 8.0, was developed as a policy that would offer a more multifaceted ecosystem-based management approach. It will continue the current ecosystem-based management components of the FMPs, while adding new features that address the food web, non-target species, and enhanced habitat protection. These measures are all viewed as potential contributors to sustainable fisheries and to long-term economic sustainability.

Technical Comments on Ecosystem Analyses in the 2003 Draft PSEIS

ECO 9
Some aspects of the ecosystem cumulative effects assessments are misleading.

Sample Quote(s)

> 'The PSEIS states that the cumulative effect of the introduction of non-native species will be negative (CS-) for bookends 3.2 and PPA.1. This is due in large part to the fact that "Atlantic salmon escapes from farms could also establish viable populations…". Farming salmon, Atlantic or otherwise, is not permitted in Alaska and their raising and/or escapement is totally unrelated to groundfish management in the North Pacific.'
>
> *Alice Ruby* *Local/Municipal Government* *Anchorage, AK*

Response

NOAA Fisheries acknowledges this comment and offers the following explanation of the purpose and intent of the cumulative effects assessments. The cumulative impacts analysis is intended to identify factors external to the fishery management regime that could, in combination with fishery impacts, produce cumulative impacts on the environment. These impacts are then evaluated to determine their potential to be significant, using the same significance criteria that are applied to direct and indirect impacts. Scientific judgment and evidence from the scientific literature are involved in identifying important external factors that could produce such impacts. With respect to pelagic forage availability, the direct effects of fishing removals on spatial/temporal forage availability are covered in the main effects analysis. Studies of fishing effects on forage availability to top predators determined such effects to be mostly insignificant or unknown. See Chapter 4, Sections 4.5 through 4.8 for detailed explanations of groundfish fisheries impacts with regard to marine mammal and birds. The cumulative effects analysis provides information regarding the impacts on pelagic prey of fuel or oil spills from commercial shipping, an event that has occurred in the study region in the past and that could occur again. For this reason, the cumulative effects analysis resulted in a conditionally significant adverse impact rating for pelagic forage availability under all alternatives.

With respect to cumulative effects due to the introduction of non-native species, scientific evidence is available and cited in the PSEIS that shows Atlantic salmon escapees from salmon farming in regions south of Alaska have been found in Alaskan waters. Therefore, salmon farming was considered a noteworthy external factor that could potentially affect Alaskan marine ecosystems by introducing non-native species.

ECO 10

The 2003 Draft PSEIS fails to demonstrate that the Fishery Management Plan (FMP) F40% reference point is safe and sustainable for target species management and ecosystem objectives and adequately risk-averse with regard to uncertainty.

Sample Quote(s)

'The revised 2003 Draft PSEIS evaluation of "target species management" and the FMPs F40% "harvest policy" does not address core questions from the 2001 Draft PSEIS and fails to explain how an approximation of MSY under the F40% policy achieves objectives for OY in an ecosystem context.'

Marc Spalding *Environmental Group* *Anchorage, AK*

'Currently the 2003 Draft PSEIS seems to contradict itself by claiming the F40% policy is risk-averse and safe while going to great lengths to emphasize the hypothesized effects of "regime shifts" as a controlling factor in fish population dynamics and productivity, without ever reconciling these density-dependent and density-independent theories, which undermines claims of management control under a "conservative" target fishing mortality policy.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries disagrees and offers the following explanation of the policy objectives of the alternatives and the role of the F40% reference point as part of the alternatives. This PSEIS considers alternatives that consist of suites of many management measures, policies, and reference points, not just the F40% reference point. Also, the inference that the F40% reference point is intended to achieve both maximum sustainable yield (MSY) and OY is inaccurate. First, the present tier system treats FMSY as a limit, not a target. Second, the proxy value for FMSY is F35%, not F40%. Target fishing rates that produce ABC for a particular target species are less than those that produce FMSY, and total allowable catch (TACs) are set to be less than or equal to ABC using OY range constraints and other relevant economic or ecological information as described in the TAC-setting QA paper (Appendix F1-). Thus, in the present management system, the harvest control rules provide a baseline for single species targets and limits, while other management measures such as the OY range, TAC setting based on economic and ecological information, and specific management measures for Steller sea lion prey species are all components of the status quo harvest policy that work together to achieve OY in an ecosystem context.

With respect to the risk-averse nature of these policies in an ecosystem context, NOAA Fisheries have demonstrated and explicitly analyzed the effects of the status quo harvest policies and harvest policies that consider greater and lesser degrees of risk-aversion through analysis of the alternatives. As noted in Table ES-2 of the Executive Summary, each alternative provides greater or lesser room for uncertainty in its policy objectives, which include those encompassed under the TAC-setting process. The 2002 baseline harvest policies are evaluated in Chapter 3 with respect to impacts on target and non-target species. The degree of risk-aversion varies by alternative and is explicitly acknowledged in the policy analysis for each alternative, as seen in Table ES-2.

ECO 11

The rating of Insignificant for the predicted effects of the Alternative 1 and the Preliminary Preferred Alternative Fisheries Management Plans on pelagic forage availability is not supported.

Sample Quote(s)

'Fishing for important forage species should be reduced to more precautionary levels to maintain the forage base for predators at high levels of abundance relative to the unfished condition as is done under the Convention for the Conservation of Antarctic Living Marine Resources (CCAMLR), which sets the harvest policy for important forage species such as krill (Eulhausia superba) at F75% in an effort to take the needs of predators into account.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries disagrees with comments stating that the rating of insignificant for the predicted effects of the status quo and PPA FMPs on pelagic forage availability for competing consumers in the ecosystem is not supported. In the impacts analyses for marine mammals, birds, and target groundfish species, the temporal/spatial availability of prey was evaluated explicitly and drew heavily on the analysis and conclusions of the Steller Sea Lion Biological Opinion (BiOp), which provided the status quo management measures that avoid jeopardy with respect to protected species, and their prey, in the region. The possibility of impacts on other, non-protected species with regard to pelagic forage availability was also considered in the target, other, and non-Specified species groups.

ECO 12

The intentional reduction in target fish stocks by the commercial fisheries has not been planned with regard to prey availability for competing marine mammals.

Sample Quote(s)

> 'Thus the model analysis provides some insight into the projected effects of fishing on prey availability at the broadest scale but is not sufficient by itself to evaluate spatial/temporal impacts to other consumers in the ecosystem. To conduct a meaningful analysis of fishery removals on forage availability to Steller sea lions, for example, NOAA Fisheries must supplement the model's "global-scale" analysis of impacts to the prey field with additional analyses of available information on the impacts of fishing relative to critical habitat (2003a). Failing such analysis, the conclusion drawn from the model-generated outputs fails to consider all relevant impacts and is completely inadequate.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

Appendix F-1 of the 2003 Draft PSEIS explains how TAC setting is accomplished and OY is obtained, and that this process involves the annual adjustment of allowable biological catch to take into account economic and ecological factors, including consideration of prey availability for marine mammals. More detailed analyses of policy objectives of the alternatives with respect to pelagic forage availability for marine mammals and birds are provided in Sections 4.5.7 and 4.5.8, respectively.

ECO 13

The 2003 Draft PSEIS incorrectly assumes that ecosystem-based management cannot be undertaken in the absence of complete information.

Sample Quote(s)

> 'The fallacy in NOAA Fisheries' argument is that managers must have complete information to do ecosystem-based management when such knowledge is not required to permit massive amounts of fishing under the current management regime.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries disagrees with this statement characterizing our position. NOAA Fisheries does not claim that complete information is needed to do ecosystem-based management (Section 4.9.10). We have outlined in the PPA a scientific research-based program to implement ecosystem-based management. Other alternatives use different ecosystem-based approaches to deal with the lack of information through implementation of more precautionary management measures. Ecosystem-based fishery management can be implemented in data-rich and data-poor situations, and the alternatives are designed to illustrate the different types of management measures that would be used in those situations.

ECO 14

The 2003 Draft PSEIS does not adequately demonstrate how the principles of ecosystem-based management are incorporated into the alternatives.

Sample Quote(s)

'Ecosystem monitoring, regular resource surveys, fishery observer data, and studies of the effects of fishing on habitat are baseline information needs and are included in the Fishery Ecosystem Plan as an ongoing obligation to improved implementation of ecosystem-based management and sustainable fisheries, including a schedule for obtaining information on the effects of fishing on marine ecosystems of the North Pacific. The Ecosystems Considerations appendix to the annual SAFE reports should be used as a vehicle in the TAC-setting process for collecting and compiling these data, identifying and reviewing research priorities, providing regular updates and evaluations of ongoing research as new information becomes available.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries directs the reader back to PSEIS Section 4.11, where specific components of the fisheries management policy alternatives that pertain to each of the Ecosystem Principle Advisory Panel principles are sufficiently identified and discussed. Implementation of the PA will require more detailed amendment analyses to refine the details of these policy approaches.

ECO 15

The 2003 Draft PSEIS does not explain the differences between conventional single-species fisheries management and ecosystem-based management (as described by Goodman et al.(2002)).

Sample Quote(s)

'Nowhere in the midst of this exposition and justification of the status quo/PPA does the public find a discussion of the differences in the "conventional worldview" of single-species target management described by Goodman et al. (2002) and the ecosystem perspective of associated and dependent species in the food web.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries disagrees. It should be noted that the PSEIS (Section 4.11) contains a summary of the ecosystem-based fishery management principles outlined by various panels and how the present fishery management regime encompassed by the Alaska groundfish FMP's has moved from a strictly single-species fisheries management system to one that has many attributes of a system that encompasses these ecosystem-based management principles.

ECO 16

The total allowable catch (TAC)-setting discussion in Appendix F-1 gives inadequate attention to ecosystem considerations.

Sample Quote(s)

'Appendix F, in Volume VIII of the document provides a scant one-page discussion of ecosystem considerations in the TAC-setting process (p. F-I-I0), and less than one-page discussion of Alternative 1 from an ecosystem perspective (pp. F-1-18, 19). Unfortunately, these evaluations of policy as a single-species approach from an ecosystem perspective are paltry and inadequate in the extreme.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

The purpose of the QA papers is to discuss fishery management policies in a general sense and not to provide detailed analyses from an ecosystem perspective. In contrast, the quantitative analyses of Chapter 4 were designed to provide more detailed discussions and examples of the impacts of various policies from the viewpoint of ecosystem components. These analyses were then integrated into a detailed ecosystem-level analysis in Section 4.11. In summary, the TAC QA paper was not intended to constitute the full analysis of each alternative, particularly with respect to the ecosystem or to individual ecosystem components. Detailed and quantitative analyses of the FMP bookends for each alternative with respect to the ecosystem were provided in Chapter 4.

ECO 17
Ecosystem analyses in the Preliminary Preferred Alternative (PPA) discussions have insufficient detail.

Sample Quote(s)

> 'The ecosystem-level components analyzed in the PPA alternative represent only slightly more than one-third of the analysis, and the amount of information and discussion allotted to each of these FMP categories individually is paltry by comparison to the target species category.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

The amount of analysis of ecosystem-level components in the PPA represents an integration of the analyses conducted in greater detail in the 2003 Draft PSEIS. Specifically, this information is presented in the sections on Target Species, Marine Mammals, Seabirds, Prohibited Species, Other Species, and Non-Specified Species. The shorter length of the ecosystem discussions does reflect the amount of information and knowledge of ecosystem components in comparison to the target species, and highlights the limited extent of information about, and our understanding of, these components, which is one of the purposes of the analysis. The 2003 Draft PSEIS recommends expansion of ecosystem-level research in Chapter 5 so we can better assess the environmental consequences of the fisheries in the future.

ECO 18
How can the 2003 Draft PSEIS assert that status quo fishery management policies are conservative while, at the same time, acknowledging a high level of uncertainty about the effects of commercial fishing on the ecosystem?

Sample Quote(s)

> 'The extreme number of information gaps indicates that NOAA Fisheries should be adopting a more precautionary approach to management. At the very least, the agency must evaluate the lack of information in greater detail, as required under Council on Environmental Quality (CEQ) regulations.'
>
> *Trustees For Alaska* *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries bases this assertion on a comparison of the current Alaska groundfish fishery management regime with other programs around the world. Compared to these other programs our groundfish management regime is conservative. That said, it is still appropriate to acknowledge the uncertainties that exist. During the scoping process, the public highlighted the "uncertainties" as an issue. The TAC QA paper in Appendix F-1, p. F1-19, has been revised to reflect the fact that the impacts of the existing TAC policy on other components of the ecosystem have been evaluated annually in our TAC specification Environmental Assessments (EA). These TAC specifications and the analysis of the status quo policy in this PSEIS have shown that we are not overfishing target stocks and that TAC levels have had insignificant impacts on three categories of non-target species (forage, prohibited species, protected

species). NOAA Fisheries acknowledges that the effects of fishing are unknown for other categories of non-target species that are not well sampled in our trawl surveys or for which we do not have species-level catch information, as noted in the Chapter 4 analyses of the respective ecosystem components.

ECO 19

How can the 2003 Draft PSEIS state that populations of top predators in the study area fluctuate within the range of natural variability, given the lack of long-term data on population trends for these

Sample Quote(s)

> NMFS must explain how the agency would know that the changes in the populations of top predator sea lions, fur seals, harbor seals, piscivorous seabirds at the Pribilof Islands, or sea otters in the Aleutian Islands, to cite common examples, are within the range of natural variation when the agency's own statements elsewhere in the document tell us that baseline historical population data do not exist for most of the species in question. For instance, NMFS's own admissions of scientific ignorance about the historical or contemporary abundances of many of the species in question indicate that the range of natural variability in an unfished environment is unknown:
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries agrees that the ranges of natural variability in abundance for many species are not well known. Therefore, as noted in Section 4.1.1.6, an indicator approach was used instead. Tables 4.1-6 and 4.1-7 show the significance thresholds and indicators used to estimate fishing effects on marine mammals and the ecosystem.

ECO 20

The suggestion that groundfish such as pollock have increased in abundance since the 1977 regime shift is not supported by historical levels of fishing.

Sample Quote(s)

> 'Abundance trends for groundfish such as pollock prior to the 1980s are subjects of conjecture and debate. While numerous speculative studies have tried to argue that series such as pollock were at low abundance prior to the "regime shift" of 1977 (e.g., Anderson and Piatt 1999; Trites et al. 1999; Benson and Trites 2002), NOAA Fisheries has elsewhere demonstrated that levels of pollock fishing in the Bering Sea flatly contradict such claims.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries agrees that historical pollock abundance levels are not well known but disagree that historical levels of fishing contradict the claims that pollock were at low abundance. Stock assessment modeling of historical pollock abundance in the eastern Bering Sea (ESB) shows that exploitation rates of pollock were high in the early 1970s, while female spawning biomass was about half of the present-day amounts. Thus, the point estimates from stock assessment modeling do indicate that pollock abundance was low in the early 1970's and increased since the 1977 regime shift. However, upper confidence bounds of pollock abundance during the early 1970s are wide and are nearly as high as the upper confidence bounds during the 1980s and 1990s, indicating the higher level of uncertainty in these early estimates. For additional detail, please see our following response to ECO 21.

ECO 21

The 2003 Draft PSEIS claims of long-term (decadal) climate-driven changes in fish stocks are unsupported, downplay the effects of fishing in ecosystems, and allow NOAA Fisheries to escape management accountability.

Sample Quote(s)

'The Fisheries Service must explain how one would know that the declines of top predators, regional pollock stocks, crab stocks, and other changes in the ecosystem in recent decades are within the historical range of natural variability for these ecosystems, given the above unknowns. NOAA Fisheries must also reconcile the evidence from recovering U.S. West Coast pinniped populations indicating that periodic ENSO events can decimate a year-class of pups while overall productivity remains high and populations are increasing (Trillmich and Ono 1991).'

Marc Spalding *Environmental Group* *Anchorage, AK*

'Currently the 2003 Draft PSEIS seems to contradict itself by claiming the F40% policy is risk-averse and safe while going to great lengths to emphasize the hypothesized effects of "regime shifts" as a controlling factor in fish population dynamics and productivity, without ever reconciling these density-dependent and density-independent theories, which undermines claims of management control under a "conservative" target fishing mortality policy.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

It is true that the exact role of climate and fisheries in past North Pacific ecosystem changes may never be known. However, NOAA Fisheries disagrees that evidence for the role of climate in triggering shifts in marine biota is limited to gray literature (i.e., reports not published in peer-reviewed journals or widely available for study) or that we suggest that climate change should be used to reduce management accountability.

The 2003 Draft PSEIS Section 3.10.1.5 reviews a wide body of peer-reviewed scientific literature and presents cited evidence for the influence of climatic regimes on fish stocks. The nature of regime shifts is that they represent changes in background climate patterns across the entire North Pacific. It is true that a single survey method such as that reported by Anderson and Piatt (1999) should not be taken as conclusive of climatic regimes. This work should be taken in combination with the large body of other peer-reviewed literature referenced in Section 3.10.1.5 (e.g., Francis and Hare 1994, Klyashtorin 1998; McGowan et al. 1998, Hollowed et al. 1998, and Hare and Mantua 2000) to indicate that the preponderance of current evidence suggests that climatic regime dynamics, in addition to fishing, have broadly affected ocean production throughout Alaskan waters in the last 20 to 40 years.

One of the submitted comments acknowledges these peer-reviewed references in the 2003 Draft PSEIS, but implies that NOAA Fisheries relies too heavily on climate as the sole underlying explanation for biomass change. To counter this purported position, the comment lists species trends, especially 1970s depletions in herring, crabs, and other crustaceans, that do not cleanly fit the “regime shift” pattern: the comment argues that these trends are strong evidence against long-term climate as a factor to consider in examining the effects of fisheries on ecosystems.

In response, NOAA Fisheries accepts that causality behind ecosystem change and the range of “natural” variation of species may never be definitively understood. Best evidence reviewed in the 2003 Draft PSEIS Section 3.10.1.5 suggests that pollock and other groundfish have indeed fluctuated widely, both up and down, over time. However, the reviewed evidence is overwhelming that these groundfish populations were low in the 1970s and increased in the late 1970s to early 1980s: decreases in fishing rate cannot account for such increases. As for ecosystem effects, the increase of walleye pollock and flatfish in the early 1980s cannot be explained by the direct overfishing of competitors such as crabs and herring; the scale of competition is inappropriate for hypothesizing such a link without the additional assumption of shifts in climatic effects. In terms of declines, some observed declines, such as that of Greenland turbot in

the Bering Sea, are highly correlated with water temperature while others, such as that of Pacific herring in the 1970s, may be related to fishing. Our review in Section 3.10.1.5 provides a reasonable rather than an uncritical discussion of the possibilities.

In providing this review, NOAA Fisheries does not deny the possibility of other hypotheses; for example, hypotheses suggested since the 2003 Draft PSEIS include the possibility that the decline of fatty fish due to fishing enabled climate to play a role in allowing an increase in the currently dominant groundfish, and that commercial whaling through the 1960s may have created a system which tends toward the current regimes or brings about trophic cascades (Springer and Estes 2003). No direct evidence exists for these hypotheses on either side: while modeling work is ongoing it is unlikely that the nature of our limited pre-1976 data will resolve these causal factors conclusively.

In terms of determining a "current" regime, it is noted that recent published research suggests that more than a single "regime" may be responsible for shifts in groups of species. For example, changes in Bering Sea flatfish populations may be due to shifts in arctic weather patterns (the Arctic Oscillation or AO) rather than the Pacific Decadal Oscillation (Wilderbuer et al. 2002). Against this background, shorter-term patterns such as ENSO play a role, as reviewed in the 2003 Draft PSEIS Section 3.10.1.5. The existence of long-term periods of higher and lower production does not prevent annual and shorter time scales from being considered important, and ongoing research continues to play a role in recruitment prediction and thus in FMP implementation. Moreover, the examination of data on this fine scale may be the key to determining which regime we are "in," as it may take several years following a regime shift for sufficient evidence of the shift to be collected.

The discussion of climatic effects in the 2003 Draft PSEIS should not be taken as an excuse not to manage intensively, nor is this approach taken in the analysis of the alternatives. In fact, if we took this view it would argue against the necessity of any kind of management in the face of unpredictable long-term climate, a position that we do not support. The important consideration is to evaluate the alternatives with an awareness of climatic uncertainty.

While current yields are high, there is no suggestion that high yields will drive another ecosystem "shift." In fact, in several cases such as Bering Sea pollock, both catch and biomass are concurrently high, stable, or rising. Most importantly, the conservative harvest levels and overfishing reference points in Alternatives 1, 3, and the PPA do not remove management responsibility regardless of the state of the climate. The conservative reference points would reduce fishing at lower stock sizes whether those reductions were due to unfavorable climate or to fishing.

Editorial and Document Management

Overview

These editorial (EDI) public comments focus on suggestions for improving or changing the presentation of information, various elements of analyses used, and policy language. Most comments are organized by resource category and/or by specific sections of the 2003 Draft PSEIS.

EDI 1
Editorial comments focusing on marine mammals and their habitat.

Sample Quote(s)

'All of the alternatives include protection measures to avoid jeopardy to ESA-listed Steller sea lions and adverse modifications to their critical habitat. Presumably these measures are consistent with those identified in the 2001 NOAA BiOp and the 2001 Steller sea lion EIS, which provide details on the proposed management measures and whether they avoid jeopardy or adverse modification to the endangered western Alaska population of Steller sea lions. Given the availability of this key related document, and the significance of this issue, it would be helpful to include a listing (or at least a summary) of the protection measures outlined in the BiOp, rather than simply referring the reader to the other documents. Selected measures are currently included in Appendix F-4 (page F-4-9). However, because they can be considered part of the alternatives (and also affect the existing conditions in Chapter 3), they could also be incorporated into the main part of the document (e.g., Chapter 2 or 3).'

Judith Leckrone Lee *Federal Agency* *Seattle, WA*

Response

Thank you for suggesting editorial changes regarding the presentation of information in the marine mammal sections. Where NOAA Fisheries agrees with the suggestions, your comments have been incorporated.

EDI 2
Editorial comments focusing on target groundfish.

Sample Quote(s)

'BSAI Pacific Ocean Perch, Page 3.5-139 The first paragraph on this page attempts to explain how red rockfish are categorized in the BSAI. Recommendation: Substitute the language found in the "Other Red Rockfish" portion of the 2003 Stock Assessment and Fishery Evaluation Document (SAFE).'

Ronald G. Clarke *Industry Advisory Committee* *Juneau, AK*

Response

Thank you for recommending editorial changes regarding citations, descriptions of rockfish categories and the International Pacific Halibut Commission halibut fishery within the target groundfish sections of the document. Where NOAA Fisheries agrees with your recommendations, we have made the changes.

EDI 3
Editorial comments focusing on prohibited species.

Sample Quote(s)

'Pacific Halibut Management, Page 3.5-177 Target fisheries are often determined by available markets or other factors which do not necessarily entail the highest value species or the lowest bycatch rates, yet the text includes this statement, "The Pacific halibut bycatch management program has the effect of directing fisheries to the highest volume or highest value target species with the lowest seasonal halibut bycatch rates throughout the fishing year." This may or may not be true. Recommendation: Delete this sentence.'

Ronald G. Clarke *Industry Advisory Committee* *Juneau, AK*

Response

Thank you for recommending several editorial changes regarding the presentation of information in the Prohibited Species sections of the document. Where NOAA Fisheries agrees with your recommended edits, we have made the changes to

EDI 4
The discussion of the FMP bookends would be better placed in Chapter 2 than in Chapter 4. Alternative 1a is presented in a different format than the other alternatives.

Sample Quote(s)

'Alternatives 1a through 4 and the preliminary preferred alternative are all presented in a consistent format that greatly facilitates comparison (of management approaches) between alternatives. Alternative 1a (no action, status quo alternative), however, is described using policy statements from the actual FMPs making it difficult to compare with the other alternatives. It would be helpful to expand or reformat the Alternative 1a description to match the format of the others, to the extent possible, to allow a better comparison of alternatives.'

Judith Leckrone Lee *Federal Agency* *Seattle, WA*

Response

The four PSEIS alternatives described in Chapter 2 represent a range of reasonable policies for the continuing management of the federal groundfish fisheries off Alaska. The introduction of the alternative policy goals and objectives in Chapter 2 is intended to provide readers with an over arching framework for managing the groundfish fisheries. Each alternative contains a policy statement, a set of goals and objectives for that policy, and a set of example FMPs to help illustrate how the policy will be implemented. The federal action being analyzed by this PSEIS, is the continued authorization of the Alaska groundfish fisheries. Reauthorization is achieved when the Secretary of Commerce selects a PA (e.g. policy framework) that has been recommended by the NPFMC and under which the Bering Sea and Aleutian Islands and Gulf of Alaska groundfish fisheries will be managed. In Chapter 2 we provide details of each policy alternative (the policy statement, or management approach, and the management goals and objectives), as well as introduce the purpose of using example FMPs as bookends to a range of management measures (see Section 2.6 in the 2003 Draft PSEIS). Each of these example FMPs are analyzed in Chapter 4 to determine their likely environmental consequences. The specific FMP management measures are not presented in Chapter 2 since they do not necessarily reflect the actual specific measures that will be chosen in the future. Rather, as discussed in Section 2.6, they represent the outer bounds of the range of management decisions and measures specific to a policy alternative. In addition, they also serve to provide the basis for a solid scientific analysis of the effects of each policy alternative that is found in Chapter 4. Given their importance, and the size of this document, we believed it was better to refer the reader only to the purpose of the FMP bookends in Chapter 2 and provide the details of each FMP in Section 4.2, prior to the actual analysis presented in Chapter 4.

The description of Alternative 1a is presented as it currently exists in the BSAI and GOA FMPs for reference purposes. Alternative 1b is the Agency's attempt to restate the existing policy in a less cumbersome fashion. This format was also used in defining the Alternatives 2, 3, and 4to the status quo. By restating the Alternative 1 policy as Alternative 1b, the existing policy framework is more easily comparable to its alternatives.

EDI 5
Editorial comments focusing on revising citations and scientific data (including surveys) for various resource categories.

Sample Quote(s)

> 'The bottom trawl surveys were conducted every three years until 1999. From 1999 forward the survey was conducted every two years. Some sections of the fishery descriptions make this distinction while others discuss only a triennial survey. Recommendation: Standardize these discussions making it clear that the bottom trawl surveys where triennial until 1999 and biannual from 1999 forward.'
>
> *Ronald G. Clarke* *Industry Advisory Committee* *Juneau, AK*

Response

Updated citations have been incorporated into biological sections where deemed necessary and discussions on bottom trawl surveys has been clarified in Section 3.5.

EDI 6
Editorial suggestions for the content of the Executive Summary as well as formatting concerns.

Sample Quote(s)

> 'Finally, there is still a need to improve the Executive Summary, move much of the historic text relating to past management plans into appendices and format the PSEIS with additional reference indicators to provide the reviewer with the ability to better comprehend the context of discussion.'
>
> *Judith Leckrone Lee* *Federal Agency* *Seattle, WA*

Response

Much of the historic text related to the PSEIS has now been moved into Appendix B. NOAA Fisheries believes the historical information related to past management plans that is included in the Executive Summary provides readers with a brief overview of fisheries management pertinent to the PSEIS. Other edits have been made to reduce the length of the Executive Summary as suggested.

EDI 7
Editorial comments regarding the length and complexity of the document and why it was produced only in English.

Sample Quote(s)

> 'The length and sheer bulk of the document, as well as the complex and scientific nature of the proposal, continue to make this a very difficult EIS to read, and make it difficult for the reader to easily refer to the most relevant and important information.'
>
> *Judith Leckrone Lee* *Federal Agency* *Seattle, WA*

Response

The subject matter of the PSEIS is complex, the scope is broad, and the science sophisticated. Nevertheless, we have tried as much as possible to keep the document clear, concise, and readable for the general public. We have avoided jargon and used terms that most readers can understand to present and explain the information necessary to fulfill the document's purpose as a programmatic SEIS. The Agency have reorganized the document by alternatives so readers may more readily see the effects of a single alternative on all resources, and we have provided clear, concise conclusions that summarize the analyses and allow readers to more easily compare the alternatives. Based on these and other comments, we have further edited the 2003 Draft PSEIS in an attempt to reduce duplication, improve its readability, and correct factual errors. The Agency sought to balance readability with technical accuracy and specificity required for adequate analysis. An executive summary that highlights the main issues has been provided, and, where issues are complex, individual sections of the main body of the document have erred on the side of being comprehensive to ensure the disclosure of potential impacts. NOAA Fisheries appreciates your suggestions for improving the PSEIS. Given that there are many Alaska Native languages (as well as a number other non-English languages spoken as a first language by at least some individuals or groups participating in the fishery), it was not practical or cost effective for NOAA Fisheries to translate a document of this size (7,300+ pages). English is the accepted common language of the United States and one that would be understandable to the most number of people reading the PSEIS.

EDI 8
Editorial comments on Chapter 5 related to data gaps and research needs.

Response

Please refer to the response provided for the RES 4 statement of concern for an explanation on the ways in which NOAA Fisheries has addressed data gaps and research needs in the document. This section is intended as a tool to be used by future decision-makers.

EDI 9
Editorial comments suggesting changes to the presentation of past effects analyses.

Sample Quote(s)

> 'While the inclusion of historical information is helpful, a shorter summary would suffice, with the primary focus on amendments in place and current fishing conditions today, including status, population and stock assessments, trends. Example sections that could be deleted or moved to an appendix or another chapter in the book include discussion of effects of past amendments to the current FMPs (Section 3.1), and an assessment of the FMP Amendments (Section 3.2) (some supporting text, and often duplicate text, is already provided in Appendix B);'
>
> *Judith Leckrone Lee* *Federal Agency* *Seattle, WA*

Response

Where appropriate, cumulative effects analysis text and tables has been revised and/or improved in the Final PSEIS to ensure consistency and accuracy in presentation of information. The comparative baseline is an essential part of the cumulative effects analysis presented in Chapter 4; therefore it is important to include enough information on past effects to accurately and fully describe the condition of the resource.

EDI 10
General editorial comments for text, tables, and figures.

Sample Quote(s)

'Figure 3.9-5 (page A-F-80). The total wholesale value (y-axis) should indicate whether the value is dollars, thousands of dollars or some other unit.'

Judith Leckrone Lee *Federal Agency* *Seattle, WA*

Response

Revisions and edits to text, tables, and figures throughout the PSEIS have been incorporated where deemed necessary.

EDI 11
Consolidate information on other NEPA projects related to the PSEIS such as the Steller sea lion BiOp and the EFH EIS into one section in Chapter 2.

Sample Quote(s)

'Similar to the 2001 BiOp and Steller sea lion, the EIS should expand the discussion of alternatives in Section 2.6 (or in Chapter 3), as appropriate, to incorporate special Essential Fish Habitat (EFH) protection measures based on results of the ongoing EFH EISs.'

Judith Leckrone Lee *Federal Agency* *Seattle, WA*

Response

The Steller sea lion BiOp has been incorporated into various sections of the PSEIS, such as Section 3.8, where information from the BiOp was pertinent to the discussion. The EFH EIS is discussed specifically in Section 4.1.1.2 as it relates to the analysis of habitat in the groundfish PSEIS. As the EFH EIS has not yet been finalized, we have not included a discussion of the EFH alternatives as they may still change before the Final PSEIS is released. Both the Steller sea lion BiOp and the EFH EIS have been incorporated by reference in an attempt to direct readers to additional information while keeping the PSEIS concise.

Habitat

Overview

Public comments focused on whether the PSEIS analysis is compliant with the National Environmental Policy Act (NEPA) or the Magnuson-Stevens Act (MSA). Additionally, comments focused on the methods used to analyze habitat impacts and whether the habitat baseline was developed properly and is sufficient. Other comments stressed the damage caused to habitat by bottom trawling while many comments challenged the habitat impact ratings.

Magnuson-Stevens Act (MSA) or National Environmental Policy Act (NEPA) Compliance

HAB 1

The Magnuson-Stevens Act (MSA) requires that the habitat assessment be based on the best scientific information available and uses analytical tools that have undergone peer-review.

Analytical tools used to analyze habitat have not undergone peer-review, or rigorous scientific review and may be flawed. The habitat impacts model used unreasonable inputs and methods.

Response

The habitat/impact equations, which are used to model the action of impact and recovery, are described in Section 4.1.6. The concepts as shown in the differential equations are straightforward and the integrated equation expressing equilibrium impact can easily be checked. The equations and their conceptual application are similar to equations and concepts that have been applied to the capture and survival of fishes by fisheries population dynamicists for years. The habitat impact equations were reviewed by the Scientific and Statistical Committee. This is the exact analytical model used in the EFH EIS. The only fundamental differences are in the application of the model where there was (1) a wider range of sensitivity and recovery rates for benthic habitat; and (2) a concern for the geographic distribution of impacts in the 2003 Draft PSEIS, while the EFH EIS emphasized values averaged over large areas. NOAA Fisheries believes that the best scientific information available was used; for example, the 2003 Draft PSEIS concern for intensely bottom trawled areas (8,000 sq miles) on the Bering Sea shelf. This information includes fishing intensity estimates of greater than 1.0 unit of area swept per area per year (Rose and Jorgenson, 2003), known presence of potential biosheltering organisms (Malecha, et al 2003), presence of not only adult stages of important fish species, such as flathead sole, rock sole, yellowfin sole, and Pacific cod, but juvenile stages of sablefish. Given a plausible range of recovery rates, equilibrium rates of impact ranged from 18 percent to 83 percent.

There is little known about the recovery and sensitivity rates of bioshelter habitat, but NOAA Fisheries believes the range of rates chosen for analysis (shown in Section 4.1.6) adequately represents the uncertainty of the inputs. For example, chosen recovery rates ranged from 2-15 years in the Bering Sea and the GOA; and in the Aleutian Islands, where slow recovering species such as red tree coral, are prevalent; we used a rate as high as 200 years. Based on underwater observations, NOAA Fisheries scientists report that not all habitat in the path of the trawl is lost from a single pass. Therefore they chose an upper value of 25 percent. The combination of a 15-year recovery rate and a 25 percent sensitivity rate indicated substantial equilibrium reduction in bioshelter at several locations of high fishing intensity. It is possible that a higher value is reasonable, but not at a value approaching 100 percent. Using a higher sensitivity rate would not have changed our conclusions. A spatial analysis of this information will inform the public of where these adverse impacts are occurring and allow the public and decision-makers to understand the impacts of the Alternatives. For these reasons, the 2003 Draft PSEIS emphasized a

geographic distribution of impacts in the analysis, rather than simply averaging impact values over large areas.

HAB 2

The use of the 2003 Draft PSEIS habitat analysis in its application to assess impacts of management measures in future FMP or NEPA analyses is inappropriate. The legal context of EFH management is ignored throughout the 2003 Draft PSEIS and reasonable standards of scientific analysis are not used.

Sample Quote(s)

> 'Application of the PSEIS approach to the EFH analysis would result in making the choice to reject this quantitative analysis and instead choose a qualitative analysis based on more than subjective opinion. In the MCA's view, this would result in reliance on information that is not the best scientific information available, a clear violation of MSA requirements. As such, the PSEIS approach to habitat analysis is inappropriate for application as the analytical methodology for future analysis of new FMPs or fishery management measures which might tier off this programmatic review. Future habitat-related management measures should be limited to those actions necessary to minimize adverse impacts that fishing operations are having on EFH, and then only to the extent that such actions are "practicable."'
>
> *Ronald G. Clarke* *Industry Advisory Committee* *Juneau, AK*

Response

NOAA Fisheries received comments stating that NPFMC and Secretarial authority to restrict fishing activities that may be having an adverse impact on habitat is limited to the constraints embodied in the EFH language of the MSA, and that any future habitat-related management measures should be limited to those actions necessary to minimize adverse impacts that fishing operations are having on EFH, and then only to the extent that such actions are practicable. Based on this interpretation, the comments state that the information and analyses for habitat in the 2003 Draft PSEIS are flawed because they fail to contain an analysis of habitat effects that is consistent with and limited to the statutory and regulatory provisions for EFH in the MSA. Also, the commenters state that the PSEIS approach to habitat analysis is overly broad in scope and fails to use the quantitative analysis contained within the EFH EIS, which is the best available scientific information for EFH. Thus, they suggest that the PSEIS analysis is inappropriate for application as the analytical methodology for future analysis of new FMPs or regulatory measures which might tier off the PSEIS.

NOAA Fisheries disagrees with these comments. The MSA defines "conservation and management" as all of the rules, regulations, conditions, methods, and other measures which are required to rebuild, restore, or maintain, and which are useful in rebuilding, restoring, or maintaining, any fishery resource and the marine environment and which are designed to assure that: (1) a supply of food and other products may be taken, and that recreational benefits may be obtained, on a continuing basis, (2) irreversible or long-term adverse effects on fishery resources and the marine environment are avoided, and (3) there will be a multiplicity of options available with respect to future uses of these resources. 16 U.S.C. 1802(5). Under 16 U.S.C. 1853(a)(1) or (b)(12), the MSA clearly authorizes the NPFMC to recommend and the Secretary to promulgate general habitat-related measures that are necessary and appropriate for conservation and management of the fishery and these measures do not have to conform to the requirements for measures to protect EFH from the adverse effects of fishing. Nothing in the Sustainable Fisheries Act of 1996 or its legislative history indicates that the EFH provisions superceded or removed the MSA's general authority to protect benthic habitat or that any measures to protect habitat must now be considered only in the context of EFH. The EFH provisions of the MSA mandate when the NPFMC and the Secretary must act (the NPFMC and Secretary must minimize to the extent practicable adverse effects on EFH caused by fishing), but they do not limit the NPFMCs and the Secretary's authority to protect habitat to only those instances. The two authorities coexist in the MSA. As a result, future habitat-related management measures that the NPFMC and the agency may consider are not limited only to those practicable actions necessary to minimize adverse impacts from fishing on EFH.

Because the MSA vests the NPFMC and NOAA Fisheries with the authority to recommend and promulgate general habitat-related measures that are necessary and appropriate for conservation and management of the fishery, the broad scope of the habitat analysis in the PSEIS is the appropriate scope for a programmatic analysis of the Alaska groundfish fisheries. As the response to HAB 4 explains, the habitat analysis considers adverse effects of fishing on benthic marine habitat from the perspective of ecosystem structure and function, as well as managed fish species. This broad examination of impacts to habitat, which includes an examination of impacts to EFH, is commensurate in scope with the NPFMC's and agency's conservation and management responsibilities under the MSA.

For the reasons provided in the response to HAB 1, NOAA Fisheries views the habitat analysis contained in the PSEIS as the best scientific information available on the environmental effects of the various alternatives examined in the Alaska groundfish PSEIS. The PSEIS's habitat analysis provides the Council and NOAA Fisheries with information presented at a programmatic level that will serve as the basis for future project-specific analyses and actions. NOAA Fisheries is currently in the process of preparing a project-specific analysis for essential fish habitat (the EFH EIS) that will be used by the NPFMC and the agency in making decisions on the description and identification of EFH for managed species as well as minimizing to the extent practicable the adverse effects of Council-managed fishing on EFH. While the programmatic habitat analysis will not replace the project-specific EFH analysis in the EFH EIS, NOAA Fisheries expects that the PSEIS habitat analysis will serve as the basis from which future analyses for general habitat-related management measures will tier, whereas the EFH EIS will be the basis for future analyses specific to EFH.

HAB 3
Basing the habitat analysis on qualitative subjective opinions is a clear violation of MSA.

Clearly state objectives and avoid arbitrary metrics. Eliminate subjective judgments in the document and replace with more objective criteria and data. If none exist, determine that the impacts are unknown.

Sample Quote(s)

> 'Application of the 2003 Draft PSEIS approach to the EFH analysis would result in making the choice to reject this quantitative analysis and instead choose a qualitative analysis based on more than subjective opinion. In the MCA's view, this would result in reliance on information that is not the best scientific information available, a clear violation of MSA requirements. As such, the 2003 Draft PSEIS approach to habitat analysis is inappropriate for application as the analytical methodology for future analysis of new FMPs or fishery management measures which might tier off this programmatic review.'
>
> *Ronald G. Clarke* *Industry Advisory Committee* *Juneau, AK*

> 'The objective of closing representative areas of all habitat types, while popular in some scientific and conservation circles, has no place in the system of minimizing habitat impacts to the extent practicable set up by the MSA.'
>
> *Ronald G. Clarke* *Industry Advisory Committee* *Juneau, AK*

Response

The 2003 Draft PSEIS used a quantitative model for the baseline, and used the results to qualitatively predict the impacts to habitat from the alternatives. Section 4.1.1.2 describes the methods used to compare alternatives. For example, qualitative evaluation of expected geographic distribution of impacts was a useful tool to compare the alternatives. At the time of the analysis, the quantitative method and information available had limited utility in comparing alternatives. Page 4.1-57 of the PSEIS explains the relationship of geographic distribution of fishing to habitat protection closures

HAB 4
There is no consideration of whether impacts have actually been identified, in the meaning of the Final Rule.

Sample Quote(s)

> 'There is no consideration of whether impacts have actually been identified, in the meaning of the Final Rule. Page 4.1-6 offers to substitute the focus to impacts on the habitat itself, ignoring the effects on managed species that should actually be central to management of EFH. In short, the legal context of EFH management is ignored throughout the 2003 Draft PSEIS.'
>
> *Ronald G. Clarke* *Industry Advisory Committee* *Juneau, AK*

Response

Section 4.1.1.2 explains the relationship between this document and the EFH EIS. The 2003 Draft PSEIS analysis considers adverse effects of fishing on benthic marine habitat from the perspective of ecosystem structure and function, as well as managed fish species. As such, the scope of work is broader than the EFH EIS where a consideration of these changes on commercially important and functionally dependent fish species is emphasized. This approach is consistent with the purpose and objectives of a programmatic EIS.

HAB 5
There are many potential methodologies for calculating the threshold value for the definitions of "minimal and temporary" adverse impacts of fishing on Essential Fish Habitat (EFH).

> 'There are many potential methodologies for calculating the threshold value for the definitions of "minimal and temporary" adverse impacts of fishing on EFH. For example, a numeric value in the effects of fishing analysis or a specific level of habitat bycatch could be used to make this determination. Furthermore, even under one methodology such as the effects of fishing analysis, there are many different threshold values that NOAA Fisheries could select for making the "minimal and temporary" determination.'
>
> *Geoff Shester* *Academia* *Stanford, CA*

Response

The habitat impacts model was created specifically to unify the factors of fishing intensity and habitat recovery into a quantitative measure of habitat reduction levels to address the qualitative terms "minimum and temporary" as provided in the IFR for the EFH EIS. This same model was used in the 2003 Draft PSEIS. Qualitative criteria for significance determinations were used instead of quantitative thresholds, and are discussed in Table 4.1-4. NEPA requires that each alternative in the analysis be evaluated with the same assumptions and criteria.

HAB 6
The habitat analysis was too narrow in scope for a programmatic document.

The habitat analysis was largely confined to trawling and focused almost entirely on structure-forming benthos.

Sample Quote(s)

'At more detailed levels, the 2003 Draft PSEIS's habitat analyses were specifically inadequate because they were narrow in scope, being largely confined to the impacts of trawling. The 2003 Draft PSEIS' justification for this narrow focus is that trawls are the most "controversial" gear type. This is not a sound justification for the narrow scope of analysis; even granting the singular focus, the 2003 Draft PSEIS' assessment of trawl effects is overly influenced by studies of beam trawling, a gear that is not used for groundfish in Alaska. This reduces the validity of the analysis because only otter trawls are used for groundfish in Alaska and several comparative studies have concluded that beam trawl disturbance on the benthos is greater and more persistent than that of otter trawls. The 2003 Draft PSEIS habitat analysis is focused almost entirely on structure-forming benthos and this is too narrow for a programmatic document.'

Ronald G. Clarke *Industry Advisory Committee* *Juneau, AK*

Response

Yes, the habitat analysis was confined to trawling. Based on the amount of bottom contact and the mobility of the gear, it was judged to have the highest potential impact. In an analysis conducted for the EFH EIS, it was determined that longline and pot effects were small relative to bottom trawling effects. Unfortunately, effects from longline and pot gear are poorly understood due to the lack of research on these gears. Structure-forming benthos was chosen because it is the most vulnerable to fishing impacts and is slow to recover.

HAB 7
The analysis of effects on non-living habitat is inadequate.

Sample Quote(s)

'The PSEIS's analysis of the effects of fishing on non-living habitat is inadequate. Despite the promise made in the Habitat Background section as well as a terse comparative baseline generalizing about physical-structural complexity in a half page of Section 3.6.6, no similar analysis exists for effects of fishing on non-living benthic habitat.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries disagrees. Page 4.1-14 says that this analysis does not include impacts to the effects on non-living habitat, such as boulders, cobbles, and sandwaves that can be disturbed by bottom trawls (Auster and Langton 1999). NOAA Fisheries chose not to analyze effects on non-living habitat because, in most cases, the structural integrity, and hence the complexity of the habitat, would not be greatly reduced by any of the alternatives. The Agency chose instead to focus on living substrates because, when these are disturbed, the organisms living on them may die or be damaged.

HAB 8
There is no analysis of living habitat bycatch.

A spatial analysis of living habitat bycatch is needed and numerical uncertainty should be defined. What is the risk of Fishery Management Plan species declining as a result of damage to living habitat presented in habitat bycatch records?

Sample Quote(s)

'I have several comments on the analysis and data presented in the EFH and habitat components of the 2003 Draft PSEIS. I am concerned about the lack of analysis of living habitat bycatch contained in this EIS. In order for the public to understand the effects of fishing on habitat, a thorough analysis and disclosure of this bycatch information is necessary, simply because bycatch (or removal of a specific quantity of living habitat) is the most direct measurement of an adverse effect of fishing on essential fish habitat. A spatial analysis of this information will inform the public of where these adverse impacts are occurring and allow the public and decision-makers to understand the impacts of the alternatives.'

Geoff Shester *Academia* *Stanford, CA*

Response

Projections of living habitat bycatch from the multi-species model did not provide realistic data to rate alternatives or assess risks to managed species from alterations to living habitat. Thus, the analysis relied more heavily on application of the habitat impacts model (4.1.6), in conjunction with the fishing intensity maps, as the tool to assess changes to direct mortality of benthic organisms. The habitat model calculates a percent reduction in habitat features relative to unfished conditions. The scientific community generally accepts this methodology. Tables 4.1-8 and 4.1-9 show the average bycatch of living substrates by fishery. At this time, it is not feasible to produce a probability of decline of Fishery Management Plan species' productivity as the result of living habitat bycatch.

HAB 9

The document does not disclose the underlying assumptions, logic, and methodologies used to arrive at conclusions. The insignificance ratings for status quo and Preliminary Preferred Alternative are not supported in the analysis.

Sample Quote(s)

> 'NOAA Fisheries claims no significant lasting fishery impacts to EFH under the status quo while simultaneously arguing that protection of large areas of currently fished EFH will displace effort and cause damage elsewhere. Which is it?'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

Table 4.5-94 provides an annotated summary of significance ratings and their supporting rationale. Detailed rationale is provided under the analyses for each alternative in Sections 4.5.6, 4.6.6, 4.7.6, 4.8.6, and 4.9.6.

HAB 10

Use of the "status quo" to analyze habitat does not do the current management regime justice.

The analysis of impacts to HAPC biota from that qualitative model is inadequate and does not justify the conclusion of insignificance of impacts to HAPC biota.

Sample Quote(s)

> 'We continue to be concerned about the analysis of the "status quo" as described in Alternative 1, which we think does not do the current management regime justice, as well as the use of new and largely unreviewed methodologies in certain sections of the analysis, most notably the habitat analysis. We strongly recommend you eliminate the "red light/green light" table from the document which does not include "unknown" as an option and seems to make many unstated assumptions when dealing with uncertainty. The continued use of this table would be misleading to the public.'
>
> *Donna Parker* *Commercial Fishing* *Seattle, WA*

Response

The methodology used to define the comparative baseline is described in detail in Section 3.4.1 of the PSEIS. For purposes of the PSEIS habitat analysis, the baseline condition is already considered to be adversely impacted (see Sections 3.6.6 and 3.6.7). Status quo shows what would happen if the proposed action were not taken. FMP 1 (status quo) was given an insignificant rating because it will not significantly change the baseline. In other words, all alternatives, through their illustrative FMP bookends were compared to the baseline condition to see whether the policies (or their FMPs) would significantly change the baseline (for the better, or made worse).

HAB 11
Existing closures are not effective.

The 2003 Draft PSEIS currently lacks a major policy approach for minimizing adverse impacts of fishing on EFH. All of the current alternatives in the 2003 Draft PSEIS contain the same spatial management approach which is to leave all areas open to bottom trawling except for closed areas which differ in size and location throughout the alternatives. Closures to protect nearshore crab habitat do not encompass a wide range of other habitat types and this, do not protect EFH for other species.

Sample Quote(s)

'The 2003 Draft PSEIS currently lacks a major policy approach for minimizing adverse impacts of fishing on essential fish habitat. All the current alternatives in the PSEIS contain the same spatial management approach which is to leave all areas open to bottom trawling except for closed areas which differ in size and location throughout the alternatives (with the exception of 4.2 of course). The open area approach is a completely distinct policy approach that strongly contrasts the "closed area" approach used in all four of the current alternatives. To make an informed decision about the best policy approach to minimize adverse impacts of fishing on EFH to the extent practicable, the public and decision makers need to see an analysis of the "open area" approach, set up in a way to minimize living habitat bycatch in the most cost effective way so that negative socioeconomic impacts are minimized.'

Geoff Shester *Academia* *Stanford, CA*

'We support the continued use of these closure areas in the Bering Sea, while noting the near total absence of such habitat and bycatch-related closure areas in the Aleutian Islands and Gulf of Alaska. We believe the Preferred Alternative must include such measures to address this shortcoming, and must address the lack of protection for managed species EFH as well as the lack of protection for areas of pelagic shelf-edge habitat, coral habitat, etc.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

Alternative 4, specifically the FMP 4.2 bookend, embodies the concept that all areas are closed to bottom trawling until it is proven that no impacts will occur. NOAA Fisheries agree that this alternative has far-reaching economic impacts. However, we believe that the PPA provides a balance between minimizing impacts to both habitat and economics. Section 4.10.6 provides our justification for the protection of habitat under the PPA at the policy level.

HAB 12
Specific habitat protection measures are needed.

The principles and objectives contained in the EFH EIS Alternative 5B as applied to the Aleutian Islands appear to be the most cost effective policy approach to minimize adverse effects of fishing on EFH to the extent practicable.

Sample Quote(s)

'We believe the Final PSEIS Preferred Alternative should provide protection for at least 20% of known spawning grounds of target species. That includes pollock spawning grounds along the Bering Sea "greenbelt," an area already identified as high-productivity habitat, an area subject to intensive pollock fishing, an area that includes other managed species as well as prey species of managed species, and an area for which we have the best information of any region in the North Pacific.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

The PPA has the potential to reduce and avoid impacts to habitat through careful placement of closures, and includes an Aleutian Islands special management area to protect coral and live bottom habitat. Please refer to Section 4.10.6.7 for further details on the PPA. With reference to the EFH EIS, all the alternatives presented in that analysis are consistent with the programmatic PPA policy.

HAB 13
Management measures should balance sustainable fisheries with more of an ecosystem approach.

Areas of high biological significance should be managed with a higher level of precaution.

Sample Quote(s)

'Pelagic habitat zones characterized by predictable water column properties of enhanced productivity that concentrate prey and attract mobile fish, mammal and bird predators must be included in the Preferred Alternative habitat conservation plan.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

A policy goal of the PPA is to accelerate precautionary management measures (Table 4.10-85). This policy would seek to accelerate the existing precautionary management measures through community or rights-based management and ecosystem-based management principles. Under this approach, additional conservation and management measures would be taken as necessary to respond to social, economic or conservation needs, or if scientific evidence indicated that the fishery was negatively impacting the environment. This policy recognizes the need to balance many competing uses of marine resources and different social and economic goals for fishery management. See Section 4.10.6.8.

HAB 14
Scientific uncertainty regarding fishing effects on habitat is no reason to delay protection.

Absence of evidence does not mean absence of effect.

Sample Quote(s)

'Unknowns and uncertainties about the impacts of the groundfish fishery on marine habitats severely undermine NOAA Fisheries' claims of insignificance for the status quo/PPA, and counsel for adoption of a highly precautionary, protective approach to all types of affected habitat."

Marc Spalding *Environmental Group* *Anchorage, AK*

'Scientific uncertainty about the effects of fishing on marine habitats is not a reason to delay habitat protection, rather a reason to increase it. This precautionary approach manages explicitly for habitat complexity now, while research on "essential" habitats continues.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

The PPA does not preclude the ability to put habitat protection measures in place before definitive research results are available to support specific measures. See Table 4.10-87.

HAB 15
The concept that a closure in heavily fished areas result in greater damage elsewhere is not supported. This assumes that fishing levels will not be reduced.

Sample Quote(s)

'NOAA Fisheries claims no significant lasting fishery impacts to EFH under the status quo while simultaneously arguing that protection of large areas of currently fished EFH will displace effort and cause damage

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

The 2003 Draft PSEIS past effects analysis did find significant lasting fishery impacts to habitat. NOAA Fisheries does argue that closure of large heavily fished areas will likely displace effort and cause impacts elsewhere. The extent of movement into other areas depends on density of fish in the open areas, ability to fish those areas, sensitivity of habitat, and TAC level.

HAB 16
The habitat baseline analysis is not suitable.

The assumptions used and the approaches taken are not supported by rigorous scientific analysis and lack sufficient quantifiable data.

Sample Quote(s)

> 'Combining all of the above and considering solely its treatment of habitat issues, the 2003 Draft PSEIS can only be rejected as any form of statement of an environmental baseline for future management actions. The present document fails to meet minimum requirements in this regard and should not be relied upon in the future unless these deficiencies are addressed.'
>
> *Ronald G. Clarke* *Industry Advisory Committee* *Juneau, AK*

> 'Lacking significant revision and improvement, this analysis should not be used as a baseline for reference in future FMPs or the development of future fishery management measures. Simply, the baseline analysis is not a substantiated or accurate assessment of present impacts on habitat and should be revised accordingly.'
>
> *Ronald G. Clarke* *Industry Advisory Committee* *Juneau, AK*

Response

NOAA Fisheries disagrees. The assumptions used were supported by rigorous scientific analysis and incomplete information gaps were identified pursuant to applicable NEPA requirements. See response to HAB 1. NOAA Fisheries believes this analysis is suitable to be cited and built upon (e.g. tiering) in future NEPA documents. See response to HAB 2.

HAB 17
The baseline reference for habitat is inadequate.

A useful baseline needs information on how much fishing happens where, by what gear types, and needs to include all available information on seabed habitats and benthic communities. A statement of present management measures on habitat is also needed. Detailed habitat maps based on the observer program data are necessary.

Sample Quote(s)

> 'As a baseline reference on fish habitat information, the 2003 Draft PSEIS suffers from the following problems: it fails to include available information seabed habitats; its description of the fisheries is inadequate; and its review of knowledge of the seabed impacts of fishing gears is superficial and confined to qualitative trends when the impacts are fundamentally quantitative in nature.'
>
> *Ronald G. Clarke* *Industry Advisory Committee* *Juneau, AK*

> 'NOAA Fisheries says the 2002 comparative baseline for habitat is generally adversely impacted in many areas, but unknown in others. At the same time, NOAA Fisheries says there is a considerable lack of scientific information on benthic habitats.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

Maps of the distribution of bottom trawl fishing intensity are presented in Section 3.6. Unfortunately, observer data is not adequate to produce regional maps of detailed habitat distribution. Literature is cited on page 3.6-29 that shows distribution maps of living habitats based on the best scientific information available at the time. It is likely that in the future, as new information becomes available (see Chapter 5), the environmental baseline will be redefined and future impact studies will rely on this new definition rather than the one used in the 2003 Draft PSEIS.

HAB 18
Bottom Trawling is destructive and should be eliminated.

Sample Quote(s)

'Scientific evidence shows that catches are declining, and that trawler fleets inflict serious damage on the ocean bottoms as well as deaths of countless of non-commercial mammals, fish and crustaceans.'

Dick Jones *Citizen* *New York, NY*

Response

A prohibition of trawling in all fisheries that can be prosecuted by other gear types was analyzed in Alternative 4 and its environmental consequences are presented in Section 4.8.6. If the PPA is adopted as the PPA, NPFMC and NOAA Fisheries would not be adopting a complete trawl prohibition in its future range of actions illustrated by the PPA FMP bookends.

HAB 19
Bottom trawling should be restricted.

Not only do these fishing practices kill a lot of fish and other sea life, but they can also destroy critical habitats that many sea animals depend on.

Sample Quote(s)

'In the most environmentally sensitive areas, destructive fishing practices such as bottom trawling should be restricted. The fish, other sea life, and the fishing communities all depend on developing sustainable levels and responsible methods of fishing.'

Eva-Lise Carlstrom *Citizen* *Tukwila, WA*

'Please restrict bottom trawling and other destructive fishing practices that threaten sensitive habitats. These practices are simply destructive.'

Vickie Wagner *Citizen* *Three Oaks, MI*

Response

The PPA does restrict bottom trawling in some areas and provides the option for the careful placement of MPAs and no-take marine reserves, which would further limit bottom trawling.

HAB 20
Pelagic trawling is not as destructive as perceived.

Although these nets do come in contact with the bottom from time to time, such contact is limited.

Sample Quote(s)

This section of the PSEIS correctly points out that, as a result, the bottom contact that does occur in the pelagic pollock fishery is more likely to occur on flat, smooth, sandy or muddy bottoms. This section of the document also correctly points out that the performance standard that limits the number of crabs that can be caught in directed BSAI pollock fishing further reduces potential bycatch and damage to the bottom.

Trevor McCabe *Industry Advisory Committee* *Seattle, WA*

Response

As stated in Section 3.6.4.1 of the 2003 Draft PSEIS, we presume that most pelagic trawls are fished above the seafloor and any effects on benthic substrate are not realized. However, indirect evidence suggests that, in some seasons and areas, pollock are distributed close to the sea floor making it difficult to catch them without putting some parts of pelagic trawl gear in contact with the seabed. Acoustic and bottom trawl surveys conducted in five out of nine years of bottom trawling in the ESB, detected more than 95 percent of the total pollock biomass more than two years old to be found above two meters from the bottom (2000 BSAI SAFE). This suggests there is a strong incentive to fish pelagic trawl gear close to the bottom. However, no data are available to estimate the frequency of this practice.

HAB 21
Marine habitat should be protected.

Sample Quote(s)

'We must protect our ocean resources by protecting the habitat of the creatures who depend on it for survival.'
Linda Rowland *Citizen* *San Antonio, TX*

Response

Existing management measures do provide for area closures to protect habitat; some of these closures are no-take areas. Appendix F-3 (the EFH QA paper) describes the existing and historical closures in the Alaska groundfish fisheries. Also, the PPA has the objective of developing a policy to identify marine protected areas (MPAs) in coordination with national and State of Alaska policies (see Section 4.10.6). Under this alternative procedures to identify MPAs and no-take marine reserves would be set out and developed through a public forum with input from scientists and stakeholders. An example of a process to identify and establish an MPA is provided in Appendix F-3. The creation of these areas would serve to protect important habitat in specific areas, while still allowing for use of the resource in other areas.

HAB 22
The cumulative impacts analysis results for habitat are unsubstantiated and should be revisited.

Findings of insignificant for internal effects of Alternative 1 and the PPA are not supported with quantitative data and neither are findings of significantly adverse for cumulative effects.

Sample Quote(s)

...with regard to habitat, the Fisheries Service tells the public and decision-maker that continuing the status quo policies would result "insignificant" environmental effects. This is extremely misleading because the cumulative effects analysis rates historical habitat impacts (up until 2002) as "conditionally significant adverse. This "continued mortality and damage to living habitat" would continue under the status quo (from 2002 forward).
Marc Spalding *Environmental Group* *Anchorage, AK*

Response

Qualitative assessment methods are an acceptable approach under NEPA when information is lacking and clearly they meet the guidelines established by the CEQ for analysis of cumulative effects. The past effects analysis for habitat presented in Section 3.6 did find significant lasting fishery impacts to habitat. In part, this determination was based on qualitative information. It was then determined, using the Habitat Impact Model described in Section 4.1.6, that neither Alternative 1 nor the Preliminary Preferred Alternative would result in a significant change to the already impacted baseline. This methodology is generally accepted by the scientific community and meets all NEPA standards.

HAB 23

The baseline and cumulative effects analysis of habitat do not incorporate mitigation tools that have had beneficial impacts.

Incorporation of beneficial impacts into the cumulative impact assessment will provide a more balanced and quantifiable assessment.

Sample Quote(s)

> 'The 2003 Draft PSEIS cumulative impact analysis of habitat impacts of the baseline and Alternative 1 and 3 should be reassessed, incorporating the mitigation tools such as those recommended by the NRC. Incorporation of these beneficial impacts into the cumulative impact assessments will provide a more balanced and quantifiable assessment. In this way, the cumulative impact models will be based upon the best scientific information available, rather than speculative and unsubstantiated assumptions about potential adverse impacts.'
>
> *Ronald G. Clarke* *Industry Advisory Committee* *Juneau, AK*

Response

Present fishing equipment restrictions, MPAs, and managed closures are considered in evaluation of the baseline as presented in Section 3.6, and these conditions are carried forward as part of the baseline in the analysis of each alternative. Harvest limits, effort reduction and rationalization programs, as related to fishing intensity, are incorporated into the habitat impacts model and they all serve as examples of mitigation measures.

Harvest Management

Overview

The public comments on harvest management (HMM) included conflicting claims about the current harvest strategy and the degree to which it is conservative. Many of the comments on harvest management elements of the 2003 Draft PSEIS alternatives requested further clarification and explanation, particularly about how uncertainty is accounted for in harvest management. Some of the comments focused on the multi-species model used to analyze the Fishery Management Plan (FMP) bookends. Finally, there were several recommendations regarding the policy for harvest management.

Current Harvest Strategy

HMM 1
The current harvest management strategy is science-based and conservative.

The current harvest policy has been successful at preventing stocks from becoming overfished.

Sample Quote(s)

> 'As the 2003 Draft PSEIS demonstrates, groundfish management efforts are based on carefully conceived, science-based approach.'
>
> *Ronald G. Clarke* *Industry Advisory Committee* *Juneau, AK*

Response

NOAA Fisheries agrees that management of target species has been successful in achieving and maintaining sustainable groundfish fisheries in Alaska since implementation of the BSAI and GOA FMPs in 1981 and 1978, respectively. The PA builds on the existing conservative procedure for determining ABC and annual quotas by formalizing in the FMP, some of the precautionary practices currently in use. In addition, modifications and improvements in the PA are designed to address known data gaps or to formally account for uncertainty in our knowledge of stock status. The PA accelerates adaptive precautionary management by increasing conservation measures that provide a buffer against uncertainty, instituting research on, and review of, existing measures, and expanding data collection and monitoring programs. While current stock trends and simulations demonstrate that the status quo alternative meets the standard for achieving sustainable target fisheries, the PA formalizes the process for improving the information necessary for fisheries management, reducing bycatch and incidental catch of non-target and prohibited species, and expands the current network of protected areas as a precautionary and proactive approach to provide for protection of target and non-target species and their habitat. NOAA Fisheries believes such a policy will improve our management of the fisheries, further reduce the risk of overfishing target groundfish stocks, and mitigate currently unknown adverse impacts on the environment.

HMM 2

There is no justification in the 2003 Draft PSEIS for the claim that the current harvest policy is conservative.

The claim is unreasonable considering the number of stocks for which it is unknown whether they are overfished. NOAA asserts that a review of the harvest policy is beyond the scope of the 2003 Draft PSEIS, but in fact the harvest policy is the cornerstone of the management policy. Additionally, there is no evidence that the OY cap provides conservation benefits.

Sample Quote(s)

> 'Nowhere does NOAA Fisheries demonstrate that the B40% or B35% "target" level of stock biomass is a "conservative" rebuilding target for any stock, much less show that it is safe and conservative in an ecosystem context.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

Current harvest policies are conservative for target species. The support for this claim is found in the current status of groundfish stocks in the Bering Sea/Aleutian Island and GOA and in the simulation of expected medium term (10-year) trends in stock status. In the case of forage fish, the Maximum Retainable Amount (MRA) of 2 percent is considered conservative for a complex composed of species with a high turnover rate. In the case of other non-target species, the 2003 Draft PSEIS states that the impact of harvest practices is unknown. The Alaska Fisheries Science Center (AFSC) groundfish trawl surveys have provided catch per effort information for non-target species since 1995. However, it is acknowledged that resource assessment surveys can only provide a basis for monitoring abundance trends of species vulnerable to capture by bottom trawl gear. The SAIP provides modest funds to initiate experiments to evaluate methods for collecting catch and biological information on non-target species.

These new research efforts will serve as the foundation for more comprehensive expansions of catch monitoring that will allow for improved knowledge of the total catch by species. The SAIP will also provide funds for improving estimates of key vital rates for non-target species. Fishery independent surveys coupled with improved fishery dependent monitoring programs will reduce the number of species where the stock status relative to overfishing or overfished standards is unknown. The 2003 Draft PSEIS sufficiently analyzes a wide range of alternative harvest strategies using a management strategy evaluation as the main analytical tool. Utilization as well as conservation objectives are evaluated and the tradeoffs across alternatives are highlighted. The 2003 Draft PSEIS tests the robustness of the current harvest strategy and several alternatives to various uncertainties, including uncertainty due to random natural variability in future recruitment and uncertainty in future annual estimates of abundance and age structure.

HMM 3

Under the current harvest strategy, certain species are prone to overexploitation.

The management of species in the 'other species' and 'non-specified species' categories, as well as other species that are grouped for quotas, means that members of those groups could be overexploited.

Sample Quote(s)

> 'NOAA Fisheries states that there is concern a species group could be disproportionately exploited within the aggregate TAC. With these acknowledgements, it is apparent that the current management structure is not consistent with the goals of the MSA, which is to prevent over exploitation of fish species and to ensure a healthy ecosystem. Yet, the agency has taken no affirmative steps to correct the problem.'
>
> *Trustees For Alaska* *Environmental Group* *Anchorage, AK*

Response

The National Standard Guidelines provide for management of fisheries complexes. Catch of Other Species, Nonspecified Species and species complexes typically represent unintended catch or test fisheries for developing markets. In the case of Other Species and species complexes in the Alaska groundfish fisheries, scientists (Alaska Department of Fish & Game or NOAA Fisheries) usually report the catch to the finest available taxonomic level. In the case of species complexes, the finest taxonomic level is species, whereas Other Species catch is reported at the family, genus, or species level. Trends in catch are monitored relative to best available estimates of abundance. While these practices have not been formalized in the Fishery Management Plan, they have been effective in detecting developing fisheries (e.g. GOA skates), and highlighting species for which disproportionate harvesting (relative to abundance estimates) may be occurring. These practices have also been effective for identifying dominant species that may require separate management (e.g. GOA arrowtooth flounder) to protect minor species within the group. NOAA Fisheries acknowledges that management of these groups could be improved. Chapter 5 of the 2003 Draft PSEIS details these research needs. The NMFS Stock Assessment Improvement Plan and the National Bycatch Initiative support these research needs. The range of actions anticipated under the PA includes activities that would improve management of non-target species consistent with NOAA Fisheries research initiatives and strategic plan. Criteria are now being developed to manage target and non-target species consistently, and for removing or adding stocks from the Other Species and Nonspecified Species management categories.

PSEIS Analysis of Harvest Management Elements

HMM 4

The 2003 Draft PSEIS should include an analysis of the current Optimum Yield (OY) specifications. This analysis should discuss the extent to which the current OY specifications, including the F40% harvest policy, meet the statutory definition of OY, in particular the statute's requirement that OY specifications must take into account the protection of marine ecosystems.

Sample Quote(s)

> 'The Fisheries Service fails to assess the existing Optimum Yield ("OY") values in the North Pacific to determine whether the F40% policy complies with statutory guidelines for achieving an OY that protects marine ecosystems and addresses ecosystem considerations. Although NMFS makes claims that the 2 million metric ton cap in the Bering Sea/Aleutian Islands 1981 Final EIS achieves conservation benefits, there is no analysis of whether this cap, which was put into place to approximate harvest levels attained in the recent past, meets the needs of dependent and related species in the ecosystem.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

The current OY specifications and several possible modifications thereof constitute key elements of the various alternatives considered in the 2003 Draft PSEIS. Chapter 4 analyzes the likely impacts of these alternatives, including their impacts on the marine ecosystem. In addition to devoting over 800 pages to evaluating the impacts of the alternatives on target groundfish, over 600 pages of Chapter 4 are devoted to evaluating the impacts of the alternatives on other components of the marine ecosystem. Further analysis of the current OY specifications, based on qualitative considerations only, is contained in Appendix F-1, including a discussion of the current specifications' relationships to the statutory definition of OY. Contrary to the commenters' assertion, the current OY specifications do not employ an "F40% harvest policy." The current OY specifications make no reference to harvest rates whatsoever; they serve only to constrain the sums of the TACs. Neither are the individual TACs typically set at the maximum permissible F40% level. Of the 41 stocks and stock complexes in the BSAI and GOA for which separate overfishing levels (OFLs) were specified in 2003, only four had TACs set at the F40% level; the other TACs were based on more conservative rates below the maximum permissible F40% level.

HMM 5

The 2003 Draft PSEIS should include an analysis of the current overfishing definitions. This analysis should discuss the appropriateness of the reference points used in those definitions, including the use of F40% and B40% as proxies for FMSY and BMSY, and how environmental regime shifts are detected and dealt with in the estimation of reference points. In addition, the 2003 Draft PSEIS should consider alternatives in which minimum stock size thresholds (MSSTs) are specified in the Fishery Management Plans and discuss the impacts resulting when data for some stocks or stock complexes are insufficient to implement MSSTs.

Sample Quote(s)

> 'NMFS fails to adequately analyze the overfishing regulations. Tiers 1-3 contain no explicit Minimum Stock Size Thresholds. The rules in the North Pacific allow fishing on some stocks until they reach 5% of B40%. For Tiers 4-6, there is not information to even establish a stock's biomass in relation to an MSST. NMFS must explain why they have not set MSSTs.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

The current overfishing definitions are included in every alternative except FMP 2.1. In FMP 2.1, removing the precautionary adjustment in Tiers 1-3 for stocks whose biomass has fallen below the tier-specific reference level modifies the current definitions. The likely future impacts of the alternatives are analyzed in Chapter 4. Further analysis of the current overfishing definitions, based on qualitative considerations only, is also contained in Appendix F-1. The appropriateness of the reference points used in the overfishing definitions can be evaluated by examining their impacts.

For readers interested in the theoretical background underlying these reference points, a sentence is added to Appendix F-1, which suggests the review by Goodman et al. (2002) is a good place to start. Contrary to the commenters' assertion, the current overfishing definitions do not use F40% and B40% as proxies for FMSY and BMSY. The EA/Regulatory Impact Review for Amendments 56/56 specified F35%, not F40%, as a proxy for FMSY. Although no proxies for BMSY were specified in Amendments 56/56, NOAA Fisheries has consistently interpreted B35%, not B40%, as a proxy for BMSY in managing BSAI and GOA groundfish. Section 3.3.4.5 ("Regime Shifts") discusses regime shifts and their detection. Section B.4.4 ("Derivation of Minimum Stock Size Threshold") indicates that reference points are estimated only from data pertaining to the current environmental regime, which began in 1977. The PSEIS includes alternatives in which MSSTs are specified in the FMPs. Chapter 4 describes the likely impacts of the alternatives, including impacts resulting when data for some stocks or stock complexes are insufficient to implement MSSTs.

HMM 6

The F40% harvest policy does not account for individual species characteristics.

The individual life history characteristics of the species are not accounted for in the F40% harvest policy. Additionally, the PSEIS needs to explain the additional mortality imposed on a stock by the F40% policy.

Sample Quote(s)

> 'NMFS must explain how that additional mortality affects age structure and spawning potential over time, how competing predators may be affected by this strategy, and how those effects are addressed in the stock assessment advice. NMFS must adopt an alternative that accounts for these issued by setting more conservative catch levels.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

The current harvest strategy does take into account individual life history characteristics (as outlined in FMP Amendment 56) by adjusting harvest recommendations according to each species' expected longevity (i.e., the expected lifespan of each species in the absence of fishing), the estimated age-specific egg production rate, and the age groups that are caught (either from directed fisheries or those caught incidentally). This harvest rate (treated as a maximum permissible and one that is considered to be below the FMSY level) is further adjusted downwards depending on the estimated stock size relative to the estimated stock size in the absence of fishing. This harvest policy has been shown to have conservative properties (i.e., minimal risk of long-term overfishing) given observed variable environmental conditions and is explicitly designed to conserve the spawning components of the stock. The expected stock recruitment relationship has been shown to be robust for groundfish stocks (Clark 1991) and for rockfish stocks in Alaska in particular (Ianelli and Heifetz 1995, Dorn 2002).

HMM 7

The 2003 Draft PSEIS should include an analysis of the theoretical assumptions and uncertainties associated with the current harvest strategy. This analysis should discuss uncertainties associated with the use of F40% as a proxy for FMSY, the use of F40% as a target harvest rate, the role of climate in determining stock biomass, the use of survey biomass as a method of apportioning total allowable catch (TAC) among areas, and the estimation of natural mortality. In addition, the PSEIS should consider alternatives in which uncertainty is incorporated systematically into the setting of acceptable biological catch (ABC).

Sample Quote(s)

> 'Uncertainty factors should be incorporated systematically into ABC/TAC-setting to account for measurement errors (surveys, fishery observer data), process errors (stock assessment model simulations), and extrinsic ecological and environmental factors that act on fish population dynamics in unknown and/or unpredictable ways.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

The 2003 Draft PSEIS is intended primarily to evaluate the likely future impacts of the proposed alternatives. In this context, a full review of the theory underlying modern fishery science is beyond the scope of the 2003 Draft PSEIS. However, to assist readers who may be interested in such background material, a sentence has been added to Appendix F-1 suggesting the review by Goodman et al. (2002) as a good place to start. Evaluation of uncertainties associated with future impacts, on the other hand, is fully appropriate in the context of the PSEIS. In fact, evaluation of such uncertainties accounts for much of the material contained in the 2003 Draft PSEIS.

Among the sections devoted largely to uncertainty are 2.5.3 ("Establishing Limits in the Face of Uncertainty"), 4.1.2 ("Data Gaps and Incomplete Information"), 4.1.5.4 ("Critique of Assumptions and Approach"), and 5.1.2 ("Specific Information Gaps and Research Needs by Resource Category"). In addition, rankings of Conditionally Significant Beneficial (CS+), Conditionally Significant Adverse (CS-) and Unknown (U) in the effects tables (Appendix A) acknowledge uncertainty in the evaluation of future impacts. All of the specific areas of potential uncertainty mentioned by the commenters are addressed to some extent in the 2003 Draft PSEIS. Some of the uncertainties associated with use of the current harvest strategy, including the role played by F40% in that strategy, are illustrated in Appendix H, which contains tables showing the confidence intervals corresponding to the model projections for each Tier 1-3 stock under each FMP. FMP 2.1 is the most aggressive policy and showed the broadest range of confidence intervals, which NOAA Fisheries believed was important to present in the 2003 Draft PSEIS. Under the other FMPs, the caps (e.g., OY etc.) had such a dramatic effect that the range of results were constrained considerably. In the Final PSEIS, the confidence intervals have been added to Appendix H for the PPA in order to provide decision-makers and the public with a better understanding of the range of results

provided by the multi-species model. Additional information on the confidence intervals for all FMPs for the Tier 1-3 stocks are also provided on the Alaska Fisheries Science Center website at: http://www.fakr.noaa.gov/sustainablefisheries/seis/data.

The impact of climate on future biomass and reproductive success is explicitly addressed in the cumulative effects tables (Appendix A), which indicate that this impact is often uncertain. Section 3.10.2 ("Interactions Among Climate, Commercial Fishing, and Ecosystem Characteristics in the North Pacific Ocean") also addresses uncertainty regarding the role of climate in determining stock biomass. Survey biomass estimates are discussed in Sections 2.5.2 ("Sources of Fishery Management Data") and B.4.1.2 ("Independent Resource Surveys"). Some idea of the uncertainties associated with survey biomass estimates can be obtained from Table 4.1-24, which shows, in relative terms, the lower bound of the 90% confidence interval for each stock.

Section 5.1.2.2 describes information gaps and research needs pertaining to the target groundfish species, including discussions of uncertainty in survey biomass estimates, area apportionments, and natural mortality. Section 3.5.1 addresses uncertainty in natural mortality estimates for several target groundfish species, including Pacific cod, Atka mackerel, and shortspine thornyhead.

To varying degrees, explicit consideration of uncertainty is incorporated into the calculation of ABC in nearly all of the FMP bookends. A description of the uncertainty adjustment used in FMP 1, FMP 2.2, and FMP 3.1 is found in Appendix F-1. FMP 2.1 is the only case where no explicit consideration of uncertainty is incorporated into the calculation of ABC. The two uncertainty adjustments applied in FMP 3.2 and FMP 4.1 are described in Section 4.1.5.5 ("Description of the Alternatives"). FMP 4.2 has the most extreme uncertainty adjustment, in which all harvest is prohibited unless proven safe. The management approach and objectives in the PPA reflect a conservative precautionary approach to fisheries management. The PPA bookends formalize the precautionary practice of setting TAC less than or equal to the ABC. Example FMP PPA.2 significantly accelerates precautionary management by incorporating an uncertainty correction into the estimation of ABC for all species. Furthermore, other precautionary practices in example PPA.2 could result in Tier 3 rockfish stocks, for example, being capped at F60% rather than F40%. Contrary to the commenters' assertion, the current harvest strategy does not use F40% as a proxy for FMSY. The EA/Regulatory Impact Review for Amendments 56/56 specified F35%, not F40%, as a proxy for FMSY. Furthermore, F40% is currently the target harvest rate for fewer than 10 percent of the managed stocks or stock complexes. Of the 41 stocks and stock complexes in the BSAI and GOA for which separate OFL were specified in 2003, only four had TACs specified at the maximum permissible F40% level; the other TACs were based on more conservative rates below the maximum permissible F40% level.

HMM 8

The 2003 Draft PSEIS should discuss the implications of omitting stock-recruitment relationships from the multi-species management model. All else constant, the absence of any linkage between projected changes in reproductive biomass and the mean level of recruitment would seem to reinforce a maintenance of the 2002 initial conditions, and thus also a bias against the full display of the likely actual changes in catches and values that would occur in the real world under such a broad set of alternative FMP policy frameworks.

Sample Quote(s)

> 'The Fisheries Service; fails to assess the existing Optimum Yield ("OY") values in the North Pacific to determine whether the F40% policy complies with statutory guidelines for achieving an OY that protects marine ecosystems and addresses ecosystem considerations. Although NMFS makes claims 1hat the 2 million metric ton cap in the Bering Sea/Aleutian Islands 1981 Final EIS achieves conservation benefits, there is no analysis of whether this cap, which was put into place to approximate harvest levels attained in the recent past, meets the needs of dependent and related species in the ecosystem'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

To date, the only target groundfish stock in the BSAI or GOA for which a reliable stock-recruitment relationship has been estimated is eastern Bering Sea walleye pollock. The lack of reliable estimates of the stock-recruitment relationships for the other target groundfish stocks is the reason for the omission of such relationships from the projection model. When making projections over the long-term, it is true that omission of the stock-recruitment relationship will tend to understate the impacts on stock biomass resulting from a sustained change in the harvest rate. However, when projections are restricted to the near future, as they are for the most part in the 2003 Draft PSEIS, it is less likely that omission of the stock-recruitment relationship will bias the projected results significantly unless one or more of the following conditions holds: 1) the stock-recruitment relationship for a stock is extremely strong, 2) the average lifespan of individuals in a stock is extremely short, or 3) the average harvest rate for a stock is extremely different from that which generated the initial conditions.

Examination of existing stock-recruitment data for BSAI and GOA target groundfish stocks indicates that none of them appear to exhibit extremely strong stock-recruitment relationships, which is one of the reasons why it has proven so difficult to estimate such relationships. Furthermore, none of the BSAI or GOA target groundfish species is extremely short lived. Finally, while the average harvest rates for Alternatives 2-4 typically differ from the average harvest rates in Alternative 1 to some extent, the only cases in which the differences are truly extreme occur under Alternative 4. This also applies to the PPA, for which the average harvest rates are expected to be very similar to those under Alternative 3. Text has been added to Section 4.1.5.4 *Critique of Assumptions and Approach* noting that omission of stock-recruitment relationships from the projection model may result in underestimation of impacts under Alternative 4.

HMM 9
The 2003 Draft PSEIS fails to explain 'surplus' production.

Sample Quote(s)

> 'The 2003 Draft PSEIS fails to reconcile the premise of "surplus" production embedded in the MSY-based "harvest policy" with the objective of protecting the forage base of competing consumers in the ecosystem.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

Surplus production is defined as population growth plus recruitment minus natural mortality (Ricker 1978). NOAA Fisheries has added the following information on surplus production to the Final PSEIS (Section 3.10). Annual surplus production is a real property of a population that can be measured or estimated. It is "surplus" only in the narrow technical sense that it is production not required to maintain the population at current abundance. Annual surplus production can be either positive or negative. When the population is lower than its carrying capacity, expected surplus production is positive, i.e., the population tends to increase towards its carrying capacity. At some fraction of the carrying capacity between zero and 100 percent expected surplus production reaches a maximum. These relatively simple ecological concepts underpin MSY-based harvest policies. Whether maximum surplus production occurs at 50 percent of carrying capacity or some other level is a question best addressed with empirical studies of populations living in real ecosystems. Studies such as Myers et al. (1994) support the use of F40% as a risk-averse approach to MSY management, which would be expected to reduce the spawning population to 35-45 percent of carrying capacity. The percent reduction of juvenile fish not targeted by the fishery is likely to be much smaller (<20 percent reduction from carrying capacity) and may even increase under MSY-based harvest policies. Since juvenile fish are often targeted by other top predators such as seabirds and pinnipeds, predators that depend on the same prey populations as fisheries would not be impacted to the degree implied by a 60 percent reduction in the spawning population.

From the perspective of systems theory, all carbon sequestered in the living organisms of an ecosystem must end up somewhere, either by being recycled, exported to other ecosystems, or deposited in the sediments. In the Eastern Bering Sea, predation by top predators accounts for a relatively small fraction of the total natural mortality of populations targeted by fisheries (Aydin et al. 2002). Disease, parasitism, and all the other hazards of longevity apparently account for most mortality, though these sources of mortality are poorly understood. Fish that die without being consumed by predators are a small fraction of the total carbon recycled into the system by decomposers. The fact that ecosystems by definition do not produce a surplus of carbon (or biomass) does not invalidate the logic behind MSY management.

The foregoing discussion has treated ecosystems as equilibrium systems that return to a stable steady state in the absence of disturbance. This static view of ecosystems is no longer prevalent. Recent research has shown the ecosystems are highly dynamic in response to decadal-scale environmental forcing. There may be unknown biological thresholds that once crossed can move the ecosystem to a new state. While it is appropriate to use single-species steady-state models to approximate overall harvest rates, a fully developed harvest policy must be robust to potential ecosystem variation not anticipated by simple equilibrium models. Several such safeguards are built in to North Pacific harvest policies. The harvest control rules for Tier 3 can be used as an example. First, the F40% harvest rate, for which FABC can never exceed, is well below F35%, which is used as an estimate of FMSY. Second, instead of a constant F40% harvest strategy, the maximum permissible harvest rate is reduced progressively if the stock declines below B40%. For important prey species of Steller sea lions (Atka mackerel, Pacific cod and walleye pollock), harvest rates in the directed fisheries are reduced to zero at 20 percent of unfished stock size.

When a fishery occurs on prey population that is important to a top predator, a potential exists for competition to occur. Predicting how populations of top predators will respond to a reduction in prey availability is extremely difficult. Linkages between species in an ecosystem are complex and non-linear. Top predators have the ability to adapt to changing conditions by changing their foraging strategies. They can allocate more time to foraging, switch to other prey, switch to more abundant smaller fish of the same species. In some cases, fisheries may make prey more available to top predators, for example, by discard of bycatch.

Based on simple mass-balance ecosystem models (i.e. ECOPATH), a numerical response of top predators to reductions in prey abundance would be expected (Fig. 1). When a predator is obligate on a single prey species, predator abundance would decline at the same rate as prey abundance. In this extreme case, a 60% reduction in the abundance of prey would produce a 60% reduction in the abundance of the predator. However, most top predators consume a variety of species, and can switch other forage species when one becomes scarce. Diet diversity and the ability to substitute one prey species with another would tend to result in predictions from mass-balance models of a smaller percent reduction in top predator abundance. If other prey species increase in abundance due to competitive release when a fishery reduces the abundance of a target species, some top predators may increase in abundance. These directional changes in the abundance of top predators are based on general properties of simple ecosystem models that lack spatial structure. Predators forage in space, and may require a density of prey above a threshold to forage successfully. Although aggregate biomass models do not show these kinds of spatial effects, they are an important consideration.

Please refer to Figure A.1, CAR Attachment A for more information.

HMM 9 References

Aydin, K.Y., V.V. Lapko, V.I. Radchenko, and P.A. Livingston. 2002. A comparison of the Eastern Bering and Western Bering Sea shelf and slope ecosystem through the use of mass-balance food web model. NOAA Technical Memorandum NMFS-AFSC-130, 78 p.

Ricker, W.E. 1975. Computation and interpretation of biological statistics of fish population. Bulletin 191. Fisheries Research Board of Canada. 382 p.

Myers, R.A., Rosenberg, A.A., Mace, P.M., Barrowman, N., Restrepo, V.R. 1994. In search of thresholds for recruitment overfishing. ICES Journal of Marine Science. 51(2):191-205.

Multi-Species Management Model

HMM 10

The multi-species management model used to analyze the Fishery Management Plan bookends ignores critical relationships and does not accurately mimic the real world.

For example, the spatial distribution of biomass and fish movement is not incorporated into the model. Additionally, fishery management is presumed to be optimal. These shortcomings, and others, results in a model with poor predictive power.

Sample Quote(s)

> 'The multi-species technical interaction model, for example, is driven by single species management criteria and assumptions. It assumes that average fishing mortality rates and changes in mortality rates occur at the stock-as-a-whole level. This ignores the spatial distribution of stock biomass, the movement of fish, and the effects of fishing on local stock biomass at any given time.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

All models have shortcomings; the limitations of the model used in the 2003 Draft PSEIS are highlighted in Section 4.1.5.4. The complex interactions among changes in biomass levels, fisheries economic performance, and management effectiveness are just some of the reasons why any such forecast must be viewed cautiously. Data limitations constrain the ability of the model to completely model all aspects of the fishery. However, the 2003 Draft PSEIS explicitly notes assumptions, constraints, and limitations of the approach (Section 4.1.5.4) consistent with all applicable NEPA requirements. Although the model's predictive power given the system's complexity is limited, the multi-species technical interaction model does provide a more objective approach to evaluate alternative management actions compared to single species evaluations. Regarding optimality, fishery management is not modeled to behave "optimally" since the constraints limit this behavior (e.g., certain established fisheries are not allowed to shut down or expand unreasonably). The purpose of the multi-species management model is to evaluate the available data and attempt to mimic anticipated practices based on these evaluations. Alternative approaches would either be at the expense of using less data or models with even less predictive power (i.e., extending observations so that responses are due solely to noise of measurement error). The spatial resolution selected for the analyses was appropriate given the distribution of the fisheries and the available data.

HMM 11

The problems with the model lead to environmental impact ratings of "insignificant" that are unjustified.

The use of the model as an analytical tool should be limited.

Sample Quote(s)

> The multi-species technical interaction model, for example, is driven by singles species management criteria and assumptions. It assumes that average fishing mortality rates and changes in mortality rates occur at the stock-as-a-whole level. This ignores the spatial distribution of stock biomass, the movement of fish, and the effects of fishing on local stock biomass at any given time. Thus the analysis of Steller sea lion prey availability, which is important at the global, regional, and local temporal spatial scales, is dealt with at only the global scale. These failures and inadequacies render the conclusion of "insignificant" impacts unjustifiable.
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

The extent of application of the analytical tool is tempered with dozens of caveats. These caveats are based on a set of plausible scientific principles and assumptions. In the 2003 Draft PSEIS, the analytical results are applied at the appropriate scale. For issues where the model results are too coarse or questionable, qualitative analyses that synthesize information are used.

HMM 12

The extent to which the model can be relied upon for impact analysis should be highlighted clearly in the 2003 Draft PSEIS.

The limits of the model should be discussed in a section that can be found in the Table of Contents.

Sample Quote(s)

> 'NOAA Fisheries fails to explain thoroughly how the limiting assumptions and biases within the models affect the analysis.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

> 'Since only two sources of uncertainty and potential error are assessed by this utility function in the model, NOAA Fisheries should explain why other measures are not needed to address outstanding areas of uncertainty inside and outside the model. This same model assumes that all model parameters are known without error, and NOAA Fisheries does not assess how this obvious erroneous assumption propagates forward in time or provide a model estimate of such error when assessing the model outputs in the analysis of alternatives. NOAA Fisheries must provide an explanation of the merits and limitations of this approach, not simply tell us that uncertainty would be "addressed" in a given bookend FMP by employing this approach.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

Section 4.1.5.4 *Critique of Assumptions and Approach* sufficiently discusses shortcomings and limitations of the multi-species technical interaction model.

HMM 13
The baseline data used in the model predicts fishery outcomes based on outdated behavioral patterns.

The baseline data are the conditions from 1997 to 2001, however these are not necessarily indicative of current fishery selectivity and fishing patterns.

Sample Quote(s)

> 'Seasonal patterns of concentrated fishing in the winter and fall months have not changed appreciably for Pollock, and not at all for cod and Atka mackerel.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

This fact is an acknowledged shortcoming (Section 4.1.5.4). However, a discrete time frame for the baseline data is necessary to proceed with an analysis. The time period from 1997 to 2001 provides the best data available to represent current fishery patterns. The selection of the baseline data is reasonable given the short time frame of the main projections (2003 to 2007). However, the long-term projections (to 2023) should be viewed more cautiously.

Recommendations

HMM 14
Set conservative quotas to prevent overfishing.

The current harvest quotas should be made more conservative to prevent stock collapse such has been witnessed in other parts of the country.

Sample Quote(s)

> 'Our oceans are not unlimited. To maintain their health we must keep our fishing within limits that allow the harvested animals to survive or we could end the sea as a source of life giving food. We must also make sure that we don't kill off the oceans ability by our polluting it either as that too could kill it off as a source of life giving food to much of the world's population. We also must limit our kills of non food animals as they too are necessary to the life balance of the ocean.'
>
> *Christopher Blackwell* *Citizen* *Deming, NM*

Response

The proposed management approach recognizes the need to balance many competing uses of marine resources and different social and economic goals for sustainable fishery management. NPFMC is committed to adopting conservative harvest levels for multi-species complexes and single species fisheries. The management approach and the objectives in the PPA reflect a conservative precautionary approach to fisheries management and communicate a policy direction for the future. The PPA formalizes precautionary practices such as setting TAC less than or equal to the ABC, and specifying MSSTs for Tiers 1-3 in accordance with National Standard Guidelines. Example FMP PPA.2 accelerates precautionary management by incorporating an uncertainty correction into the estimation of ABC for all species. Example FMP PPA.2 would also develop and implement criteria for using key ecosystem indicators in TAC-setting, and other precautionary practices. This could result in Tier 3 rockfish stocks, for example, being capped at F60% rather than F40%. Example PPA.2 develops criteria for specifying MSSTs for priority stocks in Tiers 4-6. Furthermore, PPA.2 develops criteria to manage target and nontarget species consistently, and for elevating some stocks from the Other Species and Non-specified Species management categories. Refer to Appendix F-1 for a description of the TAC-setting process, and Section 2.6.9.2 for descriptions of the PPA.

HMM 15

We need a comprehensive spatial and temporal management policy to be integrated into harvest management.

The scale at which stock assessments are currently conducted is insufficiently precautionary for local population depletion.

Sample Quote(s)

> 'Stock assessments should include all the relevant data to facilitate Plan Team evaluations and recommendations for spatial/temporal management of each target fishery. A checklist of criteria should be employed to assess appropriate spatial/temporal management of each fishery, based on management objectives for target, non-target and protected species, and habitat protection.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

Currently, spatial and temporal management is considered a management tool, used to achieve competing objectives and is not considered a policy objective in and of itself. Measures which implement spatial and temporal management in the BSAI and GOA groundfish fisheries are generally conventional and are implemented through amendments to the FMP and occur due to both economic and biological/conservation measures. Past actions have included allocation between fleets, and the dispersal of fisheries to control the "race for fish" and to decrease bycatch. Managing TAC in space and time requires in-depth knowledge of stock biology, migratory patterns and relative impact of fishing on stock biology. This information is often limited and results in a precautionary response to manage on smaller spatial and temporal scales in order to avoid the potential for localized depletion. As additional biological information becomes available, further spatial and temporal measures may be considered as management measures.

HMM 16

We should have a two-season moratorium on fishing pending an accurate assessment of the current state of the environment.

Sample Quote(s)

> 'The management plan for the Bering Sea area should protect the entire ecosystem and all species for the long-term. Overfishing, especially bottom trawling, is the most likely cause of declines in marine mammal populations and should be restricted. The total catch should be limited, and waste of incidental catch species controlled.'
>
> *Jonathan Kasper* *Citizen* *Quilcene, WA*

Response

NOAA Fisheries has assessed the impacts of environmental conditions on future production of groundfish resources in documents prepared for NPFMC (e.g. the SAFE chapters and the Ecosystem Chapters), and EAs or EISs developed in response to Plan Amendments. These analyses indicate that current harvest policies are sustainable. The 2003 Draft PSEIS builds on previous studies and undertakes a comprehensive examination of environmental impacts from groundfish fishing under the FMPs and alternatives to them. The 2003 Draft PSEIS concludes that while current practices can be improved, they are effective at building sustainable fisheries in Alaskan waters. These analyses suggest that commercial groundfish fisheries can be continued.

Identifying a Preferred Alternative

Overview

Many of the public comments focused on identifying a Preferred Alternative (PAL). Comments included those recommending adoption of the PPA, those suggesting changes to various elements of the policy or bookends, and those citing deficiencies. Some comments focused on other alternatives from the 2003 Draft PSEIS, while others suggested new options for a Preferred Alternative, or considerations that should guide the selection of a Preferred Alternative for the Final PSEIS.

Preliminary Preferred Alternative (PPA) Identified in the 2003 Draft PSEIS

PAL 1
We support the adoption of the Preliminary Preferred Alternative as the recommended action.

The balance of objectives in the PPA will preserve the sustainability of the resource and of communities. The alternative is precautionary, and includes ecosystem considerations, yet still allows flexibility to respond to fishery management needs.

Sample Quote(s)

'After reviewing the document, we are in support of the PPA recently identified by the NPFMC and NOAA Fisheries as its preferred policy choice in the 2003 Draft PSEIS. We believe that the PPA will maintain the current proven management policy for the groundfish fisheries of the North Pacific and continued protection for the fishery dependant communities such as Unalaska.'

Frank Kelty *Local/Municipal Government* *Unalaska, AK*

'NOAA Fisheries and NPFMC PPA reflects an ecosystem rights-based management approach that, where appropriate and practicable, increases habitat protection and bycatch constraints. The PPA accounts for potential changes in productivity that may be caused by fluctuations in natural oceanographic conditions, fisheries, and other non-fishing activities, and takes a precautionary approach that applies fisheries management practices based on sound scientific research and analysis, in a proactive manner.'

Judith Leckrone Lee *Federal Agency* *Seattle, WA*

Response

The PA endorsed by the NPFMC and NOAA Fisheries is very similar to the PPA identified in the 2003 Draft PSEIS. The Preferred Alternative maintains the ecosystem approach embodied in the PPA, while expanding on the PPA's protection of non-ESA-listed seabirds and marine mammals, and emphasizing the importance of cooperation and consultation with state and federal agencies and organizations. The NPFMC and NOAA Fisheries believe that the preferred alternative is a realistic and responsible approach that addresses and complies with the various goals, objectives and requirements of the Magnuson-Stevens Act and other applicable law. The policy elements contained in the preferred alternative are consistent with, and also reasonably balance the competing interests reflected in, the National Standards.

PAL 2
The Preliminary Preferred Alternative protects seabirds.

Sample Quote(s)

'The North Pacific Longline Association (NPLA) supports the PPA objectives for protecting seabirds, as well as the measures implementing those objectives. We do not believe that different or additional objectives or measures are necessary. We recommend adoption of the PPA as the agency's final action.'

Thorn Smith *Commercial Fishing* *Seattle, WA*

Response

NOAA Fisheries agrees with the comment with regard to the protection of ESA-listed seabird species under the PPA. The PA endorsed by the NPFMC and NOAA Fisheries has, however, expanded the seabird protection objectives and management measures to include protection of other seabird species, as appropriate and practicable. The Agency believes that the consideration of other seabird species in addition to ESA-listed species is a necessary element of ecosystem-based management, and conforms with the MSA directive to avoid irreversible and long-term adverse effects on the marine environment. Additionally, the NPFMC and NOAA Fisheries routinely consider the impacts of the fisheries on other seabirds, and enact management measures that protect both ESA-listed and other seabirds, therefore the expanded objectives more accurately reflect the NPFMC and NOAA Fisheries' management approach.

PAL 3

The Preliminary Preferred Alternative is not sufficiently precautionary to ensure long-term sustainability and economic viability.

The Preliminary Preferred Alternative (PPA) does not adequately incorporate uncertainty, and will not protect sustainable productivity of the fisheries. There is no commitment to ecosystem-based management, and the PPA continues destructive fishing practices.

Sample Quote(s)

> 'Neither the status quo FMP nor the nearly identical PPA constitute a systematic commitment to ecosystem-based management or reconcile goals for economic production under MSY with objectives for protecting ecosystems.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

> 'I oppose the NOAA Fisheries' PPA, which is heavily weighted toward optimization of yield and fails to protect all elements of the marine ecosystem in the Gulf of Alaska and Bering Sea. Although this alternative is described as merging the goals and objectives of Alternative 3 with elements of Alternatives 1 and 4, it appears fundamentally to endorse the no-action, status quo Alternative 1. NOAA Fisheries has already concluded that status quo fishery management strategies have decimated threatened and indentured wildlife, including seabirds, fish and marine mammals such as the Steller sea lion, whose population has declined over 80% due to reductions in prey species and catch concentrated in critical habitat.'
>
> *Alexandra J Lamb* *Citizen* *Sherman Oaks, CA*

Response

NOAA Fisheries believes that the PPA is precautionary, and that the fishery management regime resulting from the policy goals and objectives in the PPA would promote conservation and sustainability of the managed stocks while minimizing adverse impacts of the fisheries on the human environment. The PA endorsed by the NPFMC and NOAA Fisheries is very similar to the PPA identified in the 2003 Draft PSEIS, and includes the PPA's conservative and precautionary characteristics. The PA supports an ecosystem-based approach to fishery management through objectives that consider all aspects of North Pacific ecosystems, not just target fish. Additionally, specific actions to limit the harvest of forage species, and include the consideration of ecosystem factors in the setting of harvest quota, are adopted in the PA.

NOAA Fisheries acknowledges that there is a lack of complete information regarding the interactions of species with the North Pacific ecosystems. As a result, the Agency is unable to predict with certainty the impacts of fishing and fishery interactions with the environment. In order to account for this uncertainty, precautions are build into the management regime that provide a buffer against the possibility of an adverse impacts. The PA management policy strongly supports precautionary conservation measures, including conservative harvest quotas, a constraining cap on optimum yield for the BSAI, improvements in bycatch and incidental catch management, measures to avoid impacts to habitat, seabirds and marine mammals, and continued monitoring and research efforts to improve the available data.

The management policy embodied in the PA has been forwarded to the Secretary of Commerce as an FMP amendment, and once approved, will commit the NPFMC and NOAA Fisheries to manage the groundfish fisheries in accordance with the policy.

PAL 4
The Preliminary Preferred Alternative does not achieve habitat protection and bycatch reduction goals.

The Preliminary Preferred Alternative (PPA) does not sufficiently protect EFH such as corals and sponges, and does not commit to minimizing bycatch.

Sample Quote(s)

'The PPA is particularly vague and insufficient with regard to protecting EFH such as corals and sponges. The PPA makes no substantive commitment to reducing bycatch of all plant and animal species in the EEZ as required by the Magnuson-Stevens Fishery Management and Conservation Act and as is necessary if fishery managers expect to sustain our vibrant ocean resources. Ecosystem-based management depends on this type of precautionary approach that considers the status of other species in the marine ecosystem besides FMP species.'

Geoff Shester *Academia* *Stanford, CA*

'The PPA would not remedy shortcomings in EFH compliance under the status quo.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

The PPA management approach supports measures that "increase habitat protection and bycatch constraints". Specific objectives in the PPA address both habitat protection and bycatch reduction goals. These elements of the PPA have been carried over into the PA endorsed by the NPFMC and NOAA Fisheries. The PA's objective to mitigate fishery impacts in EFH and habitat areas of particular concern (HAPC), as necessary and practicable to continue the sustainability of managed species, is already being acted upon in the recently initiated NPFMC and the Agency review of HAPC proposals for corals and sponges, and seamounts. Additionally, the PA requires the consideration of marine protected areas "as tools to maintain abundance, diversity, and productivity". Bycatch objectives in the PA continue and potentially expand the use of prohibited species catch (PSC) limits or other appropriate measures to control bycatch, and the development of incentive programs and modified gear and fishing techniques for bycatch reduction. Also, the PA incorporates the requirements of the Magnuson-Stevens Act National Standards that require bycatch to be minimized to the extent practicable.

PAL 5
We suggest specific changes to the Preliminary Preferred Alternative policy and objectives.

For this statement of concern, the full comment text is included in Appendix A.

Sample Quote(s)

'Under Goals and Objectives change the category heading entitled "Management, Reduce and Avoid Bycatch and Incidental Catch" to "Manage incidental catch and reduce bycatch". The change in the category heading is that it is more appropriate to manage incidental catch rather than always reducing incidental catch.'

Julie Bonney *Commercial Fishing* *Kodiak, AK*

'At a minimum, we suggest that the PPA commit to the following measures, some of which are actually ongoing or would cost little. 1) Commit to management policies consistent with all Federal laws that mandate seabird protection, including not only Endangered Species Act, but also Migratory Bird Treaty Act and Executive Order 13186 of January 10, 2001 ("Responsibilities of Federal Agencies to Protect Migratory Birds). 2) Commit to fixing the problem with observers' reports from trawlers, which has prevented useful estimation of the mean incidental take of seabirds in trawl gear. (page 3.7-10).3) Improve observer training for identification of dead seabirds. In addition, collect documentation of birds that observers cannot identify (including, apparently, all auks)4) Support and cooperate with USFWS on populations, trends, foraging behavior, and food requirements of selected seabird species of concern. It is not necessary to commit to studying all species as proposed in Alt 3.

Stanley E., Craig S. Senner, Harrison *Environmental Group* *Anchorage, AK*

Response

The NPFMC and NOAA Fisheries considered these specific suggestions, along with other public comments, in selecting the PA for the Final PSEIS. The PA endorsed by the NPFMC and NOAA Fisheries is very similar to the PPA, and incorporates some of these suggestions and clarifications. The specific changes to the PPA policy goals and objectives are excerpted in Attachments C and D.

PAL 6
We suggest specific changes to the Preliminary Preferred Alternative bookends.

For this statement of concern, the full comment text is included in Appendix A.

Sample Quote(s)

'The overcapacity management measure presented under the PPA to promote sustainable fisheries and communities should be modified to: "Maintain existing restricted access programs while developing rationalization that maximizes benefits to rural communities."

Alice Ruby *Local/Municipal Government* *Anchorage, AK*

'Fishing gear closures can serve as a conservation tool to reduce bycatch and protect foraging birds and mammals that also congregate in these zones. Gear allocations and catch priorities to cleaner gear types should also be employed in conjunction with an integrated system of gear closure areas and marine reserves in order to reduce and avoid bycatch.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

The NPFMC and NOAA Fisheries considered these specific suggestions, along with other public comments, in selecting the PA for the Final PSEIS. The PA endorsed by the NPFMC and NOAA Fisheries is very similar to the PPA, and incorporates some of these suggestions and clarifications. The specific changes to the PPA policy goals and objectives are excerpted in Attachments C and D.

PAL 7
The Preliminary Preferred Alternative (PPA) appears to endorse the status quo management strategy that some believe has threatened wildlife populations.

Sample Quote(s)

'I oppose the NOAA Fisheries' PPA, which is heavily weighted toward optimization of yield and fails to protect all elements of the marine ecosystem in the Gulf of Alaska and Bering Sea. Although this alternative is described as merging the goals and objectives of Alternative 3 with elements of Alternatives 1 and 4, it appears fundamentally to endorse the no-action, status quo Alternative 1. The NMFS has already concluded that status quo fishery management strategies have decimated threatened and indentured wildlife, including seabirds, fish and marine mammals such as the Stellar sea lion, whose population has declined over 80% due to reductions in prey species and catch concentrated in critical habitat.'

Alexandra J Lamb *Citizen* *Sherman Oaks, CA*

Response

NOAA Fisheries disagrees that the status quo management strategy has threatened wildlife populations. The agency has assessed the impacts of environmental conditions on future production of groundfish resources in documents prepared for the NPFMC (e.g., the Stock Assessment and Fishery Evaluation document, including its Ecosystem Chapter), and environmental assessments or environmental impact statements developed in response to plan amendments. These analyses indicate that current harvest policies are sustainable. The 2003 Draft PSEIS builds on previous studies and undertakes a comprehensive examination of environmental impacts from groundfish fishing under the FMPs and alternatives to them. The 2003 Draft PSEIS concludes that while current practices can be improved, they are effective at building sustainable fisheries in Alaskan waters.

NOAA Fisheries also disagrees that either the PPA or the PA management policies endorse the status quo. The status quo management policy has evolved over the last several years, and has been characterized in Alternative 1(b) in the Draft PSEIS. The PPA and the PA do incorporate many of the conservation objectives that characterize the current management policy. However, they also set many goals and objectives that prescribe the future direction of fishery management under the PPA or PA management policies, including community or rights-based management, consideration of marine protected areas, increased economic data reporting requirements, and research programs to improve management in particular areas (such as population estimates for non-target species and fishery interactions with endangered or threatened marine mammals).

Other Alternatives Identified in the 2003 Draft PSEIS

PAL 8
Adopt Fishery Management Plan 4.1 as the Preferred Alternative.

The alternative is not perfect but would be risk-averse.

Sample Quote(s)

> 'I strongly support the adoption of Alternative 4.1. The PPA is not sufficiently precautionary or risk-averse to ensure the long-term sustainability and economic viability of Alaska's fisheries with a level of certainty that is acceptable for resources of such high value.'
>
> *Geoff Shester* *Academia* *Stanford, CA*

Response

NOAA Fisheries acknowledges the recommendation. The NPFMC and NOAA Fisheries considered all public comments in selecting the PA for the Final PSEIS. The Agency and the NPFMC believe that the PA identified in the Final PSEIS will be risk-averse and allow for appropriate conservation through the use of an ecosystem-based approach to sustainable fishery management. Precautions built into the PA management regime that provide a buffer against the possibility of an adverse impacts include conservative harvest quotas, a constraining cap on optimum yield for the BSAI, improvements in bycatch and incidental catch management, measures to avoid impacts to habitat, seabirds and marine mammals, and continued monitoring and research efforts to improve the available data.

PAL 9
Do not adopt Alternative 4 as the Preferred Alternative.

The alternative represents an extreme application of the precautionary approach, which we do not support.

Sample Quote(s)

'The MCA supports the use of such a precautionary approach to fishery management. The MCA does not, however, endorse the more extreme versions of the "precautionary principle" that are the subject of ongoing academic debate.'

Ronald G. Clarke *Industry Advisory Committee* *Juneau, AK*

'I am writing to ask you to consider a stronger PSEIS than currently proposed for the Bering Sea and Gulf of Alaska. Specifically, I would like to see large bycatch operations eliminated, bottom trawling practices ended, and smaller fish quotas established for sustainable harvests.'

Douglas Rivalsi *Citizen* *Fayetteville, GA*

Response

NOAA Fisheries acknowledges the recommendation. The NPFMC and NOAA Fisheries considered all public comments in selecting the PA for the Final PSEIS. The Agency and the NPFMC believe that the PA identified in the Final PSEIS incorporates precautionary fishery management while promoting sustainability for fishery resources and the environment as well as fishing communities and industry. As a result, the PA is consistent with, and reasonably balance the competing interests reflected in, the National Standards.

PAL 10
Do not adopt Alternative 2 as the Preferred Alternative.

This would be a step backward in responsible fishery management.

Sample Quote(s)

'After reviewing the document, we are in support of the PPA recently identified by the NPFMC and the NOAA Fisheries as its preferred policy choice in the 2003 Draft PSEIS. We believe that the PPA will maintain the current proven management policy for the groundfish fisheries of the North Pacific and continued protection for the fishery dependant communities such as Unalaska.'

Frank Kelty *Local/Municipal Government* *Unalaska, AK*

'NOAA Fisheries and NPFMC's PPA reflects an ecosystem rights-based management approach that, where appropriate and practicable, increases habitat protection and bycatch constraints. The PPA accounts for potential changes in productivity that may be caused by fluctuations in natural oceanographic conditions, fisheries, and other non-fishing activities, and takes a precautionary approach that applies fisheries management practices based on sound scientific research and analysis, in a proactive manner.'

Judith Leckrone Lee *Federal Agency* *Seattle, WA*

Response

NOAA Fisheries acknowledges the recommendation, and will take it into consideration as NPFMC and the Agency identify the PA for the Final PSEIS.

Other Suggestions for the Preferred Alternative

PAL 11
Adopt the 'Oceans Alternative' as the Preferred Alternative.

We support a new alternative to promote sustainability and ecosystem-based management. This alternative includes, among other components, habitat protection plans and research and monitoring plans. The full text of the proposed alternative is included in Appendix B.

Sample Quote(s)

> 'Please adopt the "Oceans Alternative" in order to incorporated ecosystem based management policies into fishery ecosystem plans to sustain fisheries for the long-term. Long-term solutions are needed in order to preserve the oceans and protect the future of all life on this planet. All life depends on a healthy natural balance.'
>
> *Cynthia Fabian* *Citizen* *Prescott, AZ*

> 'I support the Ocean's Alternative which will promote managing fisheries via ecosystem-friendly policies. Our oceans are valuable to sustain the life of the planet and the marine life within. Please do everything you can to preserve our oceans.'
>
> *Julie Ann* *Citizen* *New Rochelle, NY*

> 'I urge NOAA Fisheries to adopt the "Oceans Alternative," which incorporates ecosystem based management policies into fishery ecosystem plans and sustains fisheries for the long-term.'
>
> *Sally Marie Gorsline* *Citizen* *New York, NY*

Response

NOAA Fisheries acknowledges the recommendation. The NPFMC and NOAA Fisheries considered all public comments in selecting the PA for the Final PSEIS. While the Agency has not adopted the 'Ocean's Alternative' as submitted in public testimony, many of the components of the Ocean's Alternative are also included in the PA identified in the Final PSEIS (please see LCP 9 for further elaboration).

PAL 12
Adopt a management regime that recognizes biodiversity and incorporates ecosystem-based management.

We need to manage the ecosystem to maintain fisheries, while protecting all marine life and improving water quality.

Sample Quote(s)

> 'Please ensure that all areas of the ecosystem are looked after when considering fishery management. It is very important and beneficial in the long run.'
>
> *Ellen Gibbling* *Citizen* *Halifax, NA*

> 'I urge you to consider an ecosystems based approach to marine legislation. Maximizing short-term economic interests will ultimately harm long-term economic interests.'
>
> *Anne Marie Ruff* *Citizen* *Los Angeles, CA*

Response

NOAA Fisheries believes that the PA identified in the Final PSEIS incorporates an ecosystem-based approach to fishery management. The PA continues the commitment by the NPFMC and NOAA Fisheries' to prevent overfishing and preserve the food web, and, to the extent practicable, protect seabirds and marine mammals and reduce bycatch and habitat impacts. The management policy also supports efforts to maintain biodiversity, such as the consideration of marine protected areas "as tools to maintain abundance, diversity, and productivity".

PAL 13
Adopt a Preferred Alternative with stronger environmental protections.

Protections against uncertainty should include, among others, conservative catch quotas, reductions in bycatch, restrictions of bottom trawling.

Sample Quote(s)

'I urge you to seek a stronger management than is proposed in 2003 Draft PSEIS for groundfish fisheries in the Bering Sea and the Gulf of Alaska.'

Barbara Russell *Citizen* *Pine Bush, NY*

'There had been a tremendous amount of the new information in recent years about the impact of fisheries on the entire marine ecosystem. There have been vast changes and, secondary to those, important decisions in marine life of many species. Considering the environment problems emerging in the sea it is critical at this time to waste no more time in learning what activities are doing the damage and to find ways to diminish or stop them. It is imperative that the protection of the marine environment looks at the needs of the entire ecosystem if, in the long run, the sea is to remain healthy with viable fisheries.'

Norma Hamilton *Citizen* *Punta Gorda, FL*

Response

NOAA Fisheries believes that the PA identified in the Final PSEIS strengthens the NPFMC and NOAA Fisheries' existing commitments to conservation and environmental protection. The PA represents a transition from a single-species to a multi-species perspective, by incorporating ecosystem considerations and precautionary adjustments into the setting of harvest quotas. Improvements in bycatch and incidental catch management, including the development of incentive programs to reduce bycatch, help to reduce waste in the groundfish fisheries, and measures to avoid impacts to habitat and marine mammals are emphasized. Mitigation of fishery impacts will be pursed as necessary and practicable to continue the sustainability of managed species.

PAL 14
Stop groundfish fishing.

Sample Quote(s)

'I believe that we need to get rid of groundfish fisheries because they are destroying the wildlife and ecosystem in Alaska. Alaska is home to many unique species that cannot survive anywhere else. We need to stop the killing of animals that are caught in nets and then disposed of. This is absolutely horrible. Please get rid of groundfish fisheries or at least reduce the amount of fishing significantly.'

Stephanie Jackson *Citizen* *Charleston, SC*

Response

NOAA Fisheries acknowledges the recommendation. The PA identified in the Final PSEIS continues the operation of the groundfish fisheries, however it incorporates management measures that mitigate potential adverse impacts on the ecosystem. The analysis in the Final PSEIS indicates that at the population level, the implementation of the PA is unlikely to result in adverse impacts to the sustainability of the species with which the groundfish fisheries interact.

PAL 15
The Preferred Alternative should promote responsible stewardship and sustainability, in order to leave healthy ocean ecosystems for future generations.

Sustainability is about creating an environmental balance that will help fisheries in the long-term. We need to stop the decline in populations and biodiversity, including the use of fishing restrictions as necessary. We have the opportunity to set an international example with this 2003 Draft PSEIS.

Sample Quote(s)

'Please institute a comprehensive fisheries management plan, to protect both the marine life that is currently threatened by mismanagement, and the livelihood of those who depend upon fisheries for their income, who will be out of jobs if unmanaged fisheries go the way of many Atlantic Ocean fisheries.'

Ernest Hartt *Citizen* *Cardiff, CA*

'Many species in Alaskan waters, such as marine mammals, fish, and seabirds, face serious declines. Our oceans are vital to the survival of our species and our planet, and they are now in crisis. This is our last, best opportunity to ensure that they remain healthy and recover from our shortsighted management regime now in effect.'

Karsten Holland *Citizen* *LISLE, IL*

'Because this is the first comprehensive environmental impact statement for fisheries management in the United States, and because it covers one of the most productive ecosystems on Earth, this PSEIS will set an important national precedent and must be done with the sustainability of the Bering Sea ecoregion as the ultimate goal.'

Elaine Koplik *Citizen* *Delmar, NY*

Response

The NPFMC and NOAA Fisheries agree that responsible stewardship and sustainability are essential components of a fishery management policy for the Alaska groundfish fisheries. The PA identified in the Final PSEIS prioritizes a precautionary approach that applies "judicious and responsible fisheries management practices, based on sound scientific research and analysis, proactively rather than reactively". NOAA Fisheries acknowledges that there is a lack of complete information regarding the interactions of species with the North Pacific ecosystems. As a result, the Agency is unable to predict with certainty the impacts of fishing and fishery interactions with the environment. In order to account for this uncertainty, precautions are build into the management regime that provide a buffer against the possibility of an adverse impacts. Continued monitoring and research efforts are prioritized to improve the available data and reduce uncertainty. The PA includes conservative harvest quotas, a constraining cap on optimum yield for the BSAI, improvements in bycatch and incidental catch management, and measures to avoid impacts to habitat and marine mammals.

PAL 16
The Preferred Alternative should protect marine life.

The sea life of the North Pacific is of primary importance and we should make sure that it is protected.

Sample Quote(s)

'Please protect the seals, sea lions and other marine life, manage the ecosystem balance to improve the quality of water and maintain the fisheries.'

Bobi Gallagher *Citizen* *Cleveland, OH*

'Please adopt a fishery management plan that protects wildlife, water quality, and sustains fisheries for the long-term. Animals are very important to our environment. They're enjoyable bundles of personality that provide not only unconditional love, but we as higher intelligence need to take care of them. It is our responsibility to ensure that other creatures do not end up in danger due to our selfish reasons.'

Karen Lewis *Citizen* *Pueblo, CO*

Response

NOAA Fisheries agrees with the importance of protecting marine life in the North Pacific. The PA identified in the Final PSEIS "seeks to provide sound conservation of the living marine resources" through specific policy objectives that prevent overfishing of managed species and avoid impacts to habitat, seabirds, and marine mammals.

Legal Compliance and Public Process

Overview

Various public comments focused on whether the PSEIS analysis is compliant with various federal laws, specifically the NEPA and its public process mandates, the MSA, the ESA, and the MMPA. Additionally, comments focused on the ability under NEPA to use the PSEIS as a document from which to tier future analyses.

Cumulative Effects Analysis

LCP 1

Cumulative effects may stem from other factors besides fisheries, and the contribution of fisheries to the cumulative effect may be minor.

Sample Quote(s)

'Cumulative effects are not necessarily related to fishery impacts and their use in alternative analysis could be misleading. In many cases the impacts from fisheries are miniscule compared to other factors. Nevertheless, the analysis assigns a negative value.'

Alice Ruby *Local/Municipal Government* *Anchorage, AK*

Response

As described in Section 4.1.4 of the 2003 Draft PSEIS, CEQ guidelines require that the assessment of cumulative effects address the significance of the effects resulting from the direct and indirect effects of the proposed action, when added to effects of past, present and reasonably foreseeable external actions. The cumulative effects analysis in the 2003 Draft PSEIS clearly identifies the significance of the direct and indirect effects of fishery related actions, describes the relative contribution of direct and indirect effects and external actions to the overall cumulative effect, and determines the significance of the overall cumulative effect based on the thresholds established for the analysis. The overall cumulative effect may be significantly beneficial, conditionally significant beneficial, insignificant, conditionally significant adverse, significantly adverse, or unknown.

LCP 2

The cumulative effects analysis is not presented as a major source of information for evaluating effects, and does not even appear in the main body of the document.

Sample Quote(s)

'The cumulative effects analysis is not presented as a major source of information for evaluating effects, and does not even appear in the main body of the document.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries disagrees. The cumulative effects analysis is a major source of information in evaluating effects of the alternatives on the biological and human environment. The cumulative effects analyses are included in Sections 4.5 through 4.9 for each alternative, and are summarized in Table ES-2 in the Executive Summary. The cumulative effects analysis is the basis for which the alternatives were compared as presented in Sections 4.10.2 through 4.10.6 as well as Section 4.11 of the 2003 Draft PSEIS, all of which are located in the main body of the document.

LCP 3
The evaluation of the effects of past FMP amendments alone does not satisfy the cumulative impacts requirement.

Sample Quote(s)

'A credible evaluation of the direct, indirect and cumulative effects of the status quo and alternatives to the status quo would have focused on the additional, incremental effects of continued destructive fishing practices on already degraded state of marine habitat, and reached significance conclusions in light of these effects.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

The effects of previous FMP amendments are analyzed in Section 3.2.3 of the 2003 Draft PSEIS, and are incorporated into the description of the baseline condition for each resource in Chapter 3. Persistent past effects from previous FMP amendments are then carried forward and analyzed in the cumulative effects analysis under each of the alternatives but are only part of the cumulative effects assessment. As described in Section 4.1.4.1 of the PSEIS, cumulative effects are "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7). Therefore, cumulative effects do not only consider past FMP amendments but other past events external to the fishery as well as reasonably foreseeable future events.

LCP 4
The Fisheries Service's choice of last year as a comparative "baseline" ignores the cumulative effects of the FMPs.

Sample Quote(s)

'A second major deficiency in the 2003 Draft PSEIS is the lack of a comprehensive evaluation of management under the existing FMPs since they were implemented more than 20 years ago. The 2003 Draft PSEIS does attempt to analyze the impacts of the numerous amendments to the two FMPs, but it never provides an assessment to the impacts of the FMPs themselves. To remedy this failure, NMFS must either include a comprehensive discussion of these effects in its cumulative impacts discussion, or change the baseline for its impacts analysis so that it begins when the FMPs were promulgated.'

Marc Spalding *Environmental Group* *Anchorage, AK*

'In particular, the cumulative effects are measured against the current state of the environment without proper consideration of changes that may have resulted from the past twenty years of management.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

As described in Sections 3.1 and 3.2 of the 2003 Draft PSEIS, the description of the comparative baseline was prepared utilizing data available through 2001 or 2002, depending on the type of data, and incorporated the effects of past fishery management actions and external events in describing the affected environment up through 2001 or 2002. Therefore, the baseline includes past and present external events (e.g. climate change) and past/present management actions (i.e. fisheries management plans) and uses 2001 or 2002 data for comparative purposes. The description of the comparative baseline was then used to assess past, present and future direct, indirect, and cumulative effects under each alternative. With the exception of socioeconomic and seabirds, the comparative baseline for environmental factors utilize data through 2002.For the socioeconomic comparative baseline and socioeconomic model used for analysis in Chapter 4, 2001 data were used because 2002 were not available prior to the release of the 2003 Draft PSEIS. Socioeconomic data require more processing than the total catch data used to analyze target

species (refer to the response to ESE 1). The baseline for seabirds is also 2001 as explained in more detail in the response to SEA 7.

LCP 5
The cumulative effects analysis fails both to look backward and to look forward in time.

Sample Quote(s)

> 'The cumulative effects analysis fails both to look backward and to look forward The primary time series of data used in the cumulative effects analysis is from 1997 to 2001. In the first programmatic EIS in over two decades, a cumulative effects analysis largely consisting of looking backward to only 1997 1S simply insufficient. Further, the cumulative effects analysis fails to consider and analyze the reasonably foreseeable effects of continuation of the groundfish fisheries, looking forward only 5 years in their primary analysis.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

> 'Another method for reducing bycatch under the PPA is to "encourage" research programs. This vague management tool is never clarified. There is no indication of who will be encouraged to initiate such programs or how he or she will be encouraged. Members of the general public will not have the appropriate information to fully understand and assess the considered alternatives and FMP bookends without at least a brief explanation of each suggested management tool.'
>
> *Trustees For Alaska* *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries believes that the cumulative effects analysis contained in the document complies with both CEQ and EPA guidance regarding the analysis and consideration of cumulative effects. Regarding the look backward, while the primary data used for the past cumulative effects analysis is of a fairly recent nature, where more historic data is available (or can be inferred through statistical models) it is used throughout the analysis (see Sections 3.2, 3.5 of the 2003 Draft PSEIS). In fact, in compliance with EPA guidance, NOAA Fisheries chose to establish the year 1740, one year prior to first contact of non-indigenous people, as the environmental reference point for the past and present cumulative effects analysis. The time frame for this analysis therefore spans the years 1740 until 2002; a period of 262 years. Unfortunately, prior to development of domestic fisheries in the affected area beginning in the late 1970's and early 1980's, reliable fisheries and environmental data for the affected area is scarce and it was not until the original FMPs were prepared that data collection and research efforts were undertaken on a regular and systematic basis. NOAA Fisheries has endeavored to ensure that all available relevant and reliable historical data has been used to analyze past cumulative effects. However, since the most reliable data available is also the most recent, the analysis reasonably relies to a great extent on data gathered over approximately the last twenty years with an emphasis, where appropriate, on the data most recently gathered.

Regarding the look forward, NOAA Fisheries chose to use a five-year forward projection. However, in certain cases analytical projections were made 10 and 20 years into the future (see Section 4.1.4 of the 2003 Draft PSEIS). The 5, 10 and 20 year periods were chosen due to the uncertain and ever evolving nature of fisheries management. NOAA Fisheries believes that, in most instances, a forward look of five years is the maximum time frame within which any effects analyses can be expected to be reasonably accurate and meaningful while 10 and 20 year projections have some analytical value in showing possible resource trends. Projecting primary effects further out than five years and possible trends further out than 10 to 20 years could, at best, be unhelpful to decision-makers and, at worst, could be misleading and lead to unwise and misguided fisheries management decisions. In recognition that the an analysis of cumulative and future effects is limited in most respects to a five year forward projection, the expected useful life span of the EIS has been determined to be five years at the end of which time, the EIS will be supplemented with updated analyses as necessary.

The PSEIS Fails to Analyze Adequate Alternatives

LCP 6
The structure of the alternatives considered in the 2003 Draft PSEIS does not meet the requirements of NEPA or the Court's order.

Sample Quote(s)

'NOAA Fisheries has not fulfilled the primary purpose of NEPA, which is to provide the agency a hard look at the environmental consequences of its action by evaluating reasonable alternatives to the proposed action. NOAA Fisheries must evaluate all potential environmental impacts caused by the Alaska groundfish fisheries, including the negative effects of bycatch and the negative impacts on marine mammals. NOAA Fisheries must also evaluate reasonable alternatives to the proposed FMP, and measure whether the FMP alternatives comply with legal requirements. Otherwise, NOAA Fisheries cannot guarantee that its chosen alternative will be legally and environmentally sound.'

Trustees For Alaska *Environmental Group* *Anchorage, AK*

'The alternatives identified do not address the appropriate federal action. In this situation, the agency has defined correctly the federal action at issue, the ongoing management of the North Pacific fisheries, but it has failed to consider any alternatives to the current course of action. Instead, it has created an artificial statement of purpose, evaluating alternative policy statements and developed unreasonable policy alternatives that cannot fulfill the identified need for federal action. Rather than alternate statements of policy, the agency must consider alternative management schemes for the North Pacific fisheries. Thus, rather than broad statements of policy, the alternatives should be various FMPs.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries received comments stating that, given the Federal action and the structure of the original EISs for the BSAI and GOA FMPs, the alternatives for consideration in the PSEIS must be alternatives that contain policy goals and objectives as well as specific management measures for every aspect of the FMPs. These commenters advocate that the only alternatives that would be commensurate in scope with the status quo and consistent with NEPA and the Court's order are alternatives that contain policy goals and objectives with only one set of specific management measures that would be implemented with issuance of the Record of Decision. The commenters stated that because the alternatives in the 2003 Draft PSEIS only address one aspect of the FMPs (the policy goals and objectives section of the FMPs), the alternatives fail to be commensurate in scope with the current BSAI and GOA FMPs which contain an entire suite of management measures, in addition to policy goals and objectives. By way of example, the commenters suggest that each FMP bookend should be a stand-alone alternative. By focusing on only policy goals and objectives, the alternatives to status quo are too narrow in scope and are therefore legally flawed.

NOAA Fisheries disagrees with these comments. As set forth in the Court's order requiring preparation of this PSEIS, the Federal action analyzed in the PSEIS is the ongoing management of the groundfish fisheries in the Exclusive Economic Zone (EEZ) off Alaska as authorized by the MSA (via FMPs) and pursuant to NEPA and other applicable statutes and executive orders (see Section 1.1 of the PSEIS). The FMPs are the overall guiding and planning documents for management of the groundfish fisheries in all their aspects. They establish biological, economic, and social goals for management of the fisheries that are consistent with the MSA, ESA, and other laws, and contain specific management measures for achieving these goals. In developing the alternatives for examination in the 2003 Draft PSEIS, NOAA Fisheries considered the Court's opinion that the PSEIS requires a broad analysis of general issues with future analysis of specific issues and specific decisions tiered at a later date in subsequent NEPA documents. The goals and objectives set forth in the BSAI and GOA FMPs embody the overarching fisheries management principles upon which all actions are taken under the FMPs. The goals and objectives are the building blocks upon which NPFMC and NOAA Fisheries base management measures

contained within the FMPs. As such, an examination of the FMPs' goals and objectives is an examination of the basic principles underlying the management of the groundfish fisheries in the BSAI and GOA. Substantive changes to the goals and objectives contained in the FMPs must lead to fundamental changes in the specific management measures that implement those goals and objectives. An examination of alternative goals and objectives for groundfish fisheries management in the BSAI and GOA groundfish fisheries does not constitute an examination of only a single element of the authorization and management of the Alaska groundfish fisheries; examining the FMPs' goals and objectives and analyzing the different ways and means they may be achieved is taking a comprehensive look at the entire BSAI and GOA groundfish fisheries management program. This approach is consistent with the purpose and intent of a programmatic EIS as delineated in 40 CFR sections 1502.4(b) and 1508.18. See also CEQ Forty Questions #24(a).

Furthermore, each alternative is more than just a set of policy goals and objectives. As explained in section 4.1.2 of the PSEIS, each alternative is comprised of three elements: a management approach statement that describes the goals of, and rationale and assumptions behind the alternative; a set of management objectives that complement and further refine the goals set forth in the management approach; and, except for Alternative 1 (status quo) which only has one FMP, a pair of FMP "bookends" that illustrate and frame the range of implementing management measures for that policy. The management approach statement and objectives serve to define the direction NPFMC and NOAA Fisheries will follow in the management of the fisheries if that alternative if ultimately adopted in the Record of Decision. The example FMP bookends serve two purposes: first, they provide an additional level of analytical detail that facilitates the comparison of the physical, biological, and socioeconomic effects of the alternatives and the status quo; second, they provide the types and range of management measures NPFMC and NOAA Fisheries will use to achieve the goals of the alternative. This FMP framework structure sets forth how NPFMC and NOAA Fisheries plan to pursue the policy objectives in the future.

Adoption of the PA in the PSEIS by NOAA Fisheries will result in the modification of the BSAI and GOA groundfish FMPs consistent with the PA. Initially, the goals and objectives sections of the BSAI and GOA groundfish FMPs will be modified to incorporate the goals and objectives of the PA. The Council and NOAA Fisheries immediately will begin to apply the new fisheries management policy to all actions currently under Council and agency consideration as well as to future actions contemplated by NPFMC and NOAA Fisheries. Although there will be no immediate changes to any other part of the FMPs or their implementing regulations, if the FMPs or implementing regulations do not currently contain management measures that are consistent with the new policy, then NPFMC and NOAA Fisheries must, within a reasonable period of time, undertake an analysis and ultimately amend the FMPs and/or implementing regulations to contain specific management measures that conform to the stated policy.

The Council and NOAA Fisheries could have analyzed alternatives structured as the commenters suggest. However, such alternatives would have had to be much more specific and detailed, similar to project-level NEPA analyses, as NPFMC and NOAA Fisheries would have had to make detailed decisions on all individual aspects of the FMPs in order for an alternative to be approved and implemented by the agency. The Council and NOAA Fisheries believe that such a detailed, project-level alternative structure was not required by the Court and is inconsistent with NEPA requirements regarding programmatic analyses. Because the alternatives in the 2003 Draft PSEIS analyze comprehensive policy-level FMP alternatives that examine all of the major components of the BSAI and GOA FMPs at a programmatic level, NOAA Fisheries is of the opinion that the alternatives are commensurate in scope with the Federal action and therefore consistent with the requirements of NEPA and the Court's order. In fact, NEPA and the CEQ regulations contemplate that programmatic EISs are to serve, facilitate and expedite the preparation of site- and project-specific actions such as those the commentators advocate. This concept of tiering is adopted by the CEQ regulations, where tiering is specifically referred to as "the coverage of general matters in broader EISs with subsequent narrower EISs or EAs incorporating by reference the general

discussions [from the programmatic EIS] and concentrating solely on the issues specific to the [subsequent project-specific action]." See 40 CFR §§ 1508.28, 1500.4(i), 1502.4(d), and 1502.20.

LCP 7
The 2003 Draft PSEIS does not examine an adequate range of alternatives.

Sample Quote(s)

> 'The alternatives identified do not address the appropriate federal action. In this situation, the agency has defined correctly the federal action at issue --the ongoing management of the North Pacific fisheries --but it has failed to consider any alternatives to the current course of action. Rather than alternate statements of policy, the agency must consider alternative management schemes for the North Pacific fisheries. Thus, rather than broad statements of policy, the alternatives should be various FMPs.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries received comments stating that there are too few policy alternatives being considered in the PSEIS and that there is not an appropriate range of reasonable alternatives examined. Specifically, the comments state that Alternatives 1, 3, and the PPA are not sufficiently distinct to allow meaningful comparison of the different ways to manage Alaska's groundfish fisheries and that Alternative 2 is unreasonable because it is not consistent with the various laws governing fisheries management. The commenters felt that Alternative 4 is the only viable contrast to Alternative 1 but that its range is too wide, noting that while it is useful to consider not fishing for purposes of analysis, FMP 4.2 is so dramatically different from FMP 4.1 that it should be a separate alternative. According to the comments, the broad range from a reasonable alternative (FMP 4.1) to no fishing (under FMP 4.2) makes the alternative vague and inconsistent with the ranges of management measures within the other alternatives, which are much narrower than the range of measures in Alternative 4. These commenters noted that the current structure of the alternatives provides no viable alternative that represents a substantially more precautionary and risk-averse policy approach than the status quo without shutting down all groundfish fishing.

NOAA Fisheries is of the opinion that the 2003 Draft PSEIS does examine an adequate range of alternatives consistent with the requirement of NEPA and the Court's order. Alternatives 1 through 4 and the PPA facilitate the examination of the environmental impacts expected from a fisheries management regime in which many of the current restrictions are removed to a fisheries management regime in which most fishing is prohibited as well as fisheries management regimes that fall in between these two ends. Under the provisions of the MSA, the Councils and the agency are required to balance several competing objectives. At one end of this spectrum is Alternative 2, which balances those objectives by placing more emphasis on the enhancement of economic and social opportunities. Under this fisheries management policy, assumptions are made that there are fewer instances wherein it is "practicable" to encumber the fishing industry with management measures that impose costs. (A more detailed description of why Alternative 2 is a reasonable alternative is provided in the response to LCP 8) In contrast is Alternative 4 at the opposite end of the spectrum, which balances those objectives by placing more emphasis on the protection of ecological aspects of the environment. Under this fisheries management policy, assumptions are made that there are many instances wherein a highly precautionary approach is appropriate and therefore it is "practicable" to encumber the fishing industry with management measures that impose costs.

NOAA Fisheries is of the opinion that there are significant differences between Alternative 1 and Alternative 3. Alternative 1 is the no action alternative, which must be examined in an EIS. 40 CFR 1508.25(b)(1). In the PSEIS, the no action alternative is defined by NOAA Fisheries as the existing management regime defined by the BSAI and GOA Groundfish FMPs as of June 2002. Such a definition of the no action alternative froze both the environment and the management regime at a given point in time to provide a static reference point necessary for preparing both the cumulative impact analysis of

past management actions as well as the determination of direct, indirect and cumulative effects of reasonable foreseeable future actions, as required by NEPA. 40 CFR 1508.7 and 40 CFR 1508.8.

Alternative 3 represents a more precautionary management policy based on both NPFMC and public input. It abandons the current policy of economic expansion and revenue for a more balanced, multi-species, ecosystem-based management approach. To illustrate this policy, FMP 3.1 presents modified FMPs that incorporate decisions either already adopted by the NPFMC but not yet approved by the Secretary, or work in progress. FMP 3.2 goes significantly further by examining different methods of achieving the policy goals and objectives presented of the Alternative 3 policy. Both the policy itself, and its illustrative bookend FMPs present a different management regime than Alternative 1.

Additionally, the PPA combines aspects from Alternatives 1, 3, and 4 and as such, some of the contrast between the PA and the other alternatives is softened. The fact that the PPA contains elements that overlap with another alternative does not mean that it violates the CEQ regulations regarding alternatives (40 CFR 1502.14). The PPA differs significantly from Alternatives 2 and 4 and while it is more similar to Alternatives 1 and 3, it is by no means identical to either and does allow analytical contrasts to be made between all the alternatives, thus "providing a clear basis for choice among options by the decision-maker and the public." (40 CFR 1502.14)

As for the Alternative 4 FMP bookends, the range between FMP bookends 4.1 and 4.2 is comparable to the range of impacts between the FMP bookends for the other alternatives. As the PSEIS analysis demonstrates, although fishing would occur under FMP 4.1, there would likely be substantial reductions in TAC as well as the closure of large portions of traditional fishing areas in the EEZ to groundfish fishing. In fisheries that would continue under FMP 4.1, the management measures call for the imposition of significant bycatch and incidental catch restrictions as well as additional time and area closures, and gear restrictions.

Under FMP 4.2, fishing could occur at levels similar to FMP 4.1 but only subsequent to a agency determination that prosecuting the fishery would not adversely impact the marine environment. We reference the ongoing two-year review of the BSAI pollock fishery by the Marine Conservation Council as an example of both a process and the time period needed to conduct such a review. It must again be made clear, that Alternative 4 is not a no fishing policy. Such a policy was examined previously and then rejected by the NPFMC. This was clearly stated in the 2003 Draft PSEIS and again in the final document. For details, see Section 2.6.7.

Since FMP 4.1 illustrates numerous fishing restrictions that are likely to result in substantially less fishing than would occur under Alternatives 1, 3 or the PPA, and since those fishing restrictions contained in FMP 4.2 are meant to be relaxed as more information concerning the effects of the fisheries on the environment becomes known, the range of impacts between example FMPs 4.1 and 4.2 are considerably narrower than the comments claim. Upon review of the alternatives under consideration in the PSEIS, NOAA Fisheries has concluded that there is an adequate range of and sufficient contrast between Alternatives 1 through 4 and the PPA to sharply define the programmatic issues facing fisheries management in Alaska.

LCP 8
The 2003 Draft PSEIS does not examine reasonable alternatives.

The alternatives considered in the 2003 Draft PSEIS are unreasonable because they fail to comply with minimum requirements of applicable laws. For example, in terms of bycatch minimization alone, the only FMP bookends the might comply with the MSA are bookends 4.1 and 4.2. The FMP bookends simply do not meet the minimum requirements of applicable law. The majority of the FMP bookends make no attempt to comply with the basic bycatch mandates of the MSA.

Sample Quote(s)

> 'Third, the heart of the EIS-the analysis of alternatives-is insufficient because the FMP bookends violate the law. While the analysis is thin, it is obvious that the FMP bookends simply do not meet the minimum requirements. This is apparent based on the suggested management tools. In terms of bycatch minimization alone, the only FMP bookends that might comply with the MSA are bookends 4.1 and 4.2.'
>
> *Trustees For Alaska* *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries disagrees. A "reasonable alternative" is defined by reference to a project's objectives (NRDC v. Pena, 972 F. Supp. 9 (D.D.C. 1997)). An alternative is reasonable if it will bring about the ends of the federal action, measured by whether it achieves the goals the agency has set out to achieve (City of Alexandria, Va. v. Slater, 198 F.3d 862 (D.C. Cir. 1999)). In other words, an alternative is reasonable if it satisfies the need for and purpose of the action. The Section 1.1 of the 2003 Draft PSEIS defines the federal action as "the ongoing management of the groundfish fisheries in the EEZ off Alaska, as authorized by the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and pursuant to NEPA and other statutes and executive orders." The same section states that the purpose of the action is two-fold: "to maximize the social and economic benefits of the groundfish resource to the people of the United states and to conserve the resource to ensure its sustained availability to current and future generations." The need to which the agency is responding in proposing the alternatives (including the proposed action) is for determining the most appropriate manner in which to continue managing groundfish fisheries in the EEZ off Alaska pursuant to MSA requirements (see Section 1.1, 2003 Draft PSEIS). Therefore, in order to be considered "reasonable" the alternatives analyzed in the 2003 Draft PSEIS must provide decision-makers and the public with enough information to determine the most appropriate manner in which to manage the fisheries while balancing the maximization of the social and economic benefits of the groundfish resource with the conservation of the resource.

NOAA Fisheries believes that each alternative meets the objectives of the action as set forth in the 2003 Draft PSEIS' Statement of Purpose and Need (Section 1.1) and is therefore reasonable. The alternatives encompass a range of potential fisheries management policy directions from less to more environmentally precautionary. The policy statements and objectives that comprise the alternatives provide the fisheries management framework within which the NPFMC and NOAA Fisheries will commit to operate and have, to the extent practicable, been design to comply with all appropriate statutory and other requirements. Each alternative commits, either through a policy statement, objective or both, to manage the fisheries in a manner commensurate with applicable statutes and Executive Orders (see Section 4.11 and FAQ Number 23 of the 2003 Draft PSEIS). The construct for the alternatives provides decision-makers and the public with enough information to determine the most appropriate manner in which to manage the fisheries while balancing the maximization of the social and economic benefits of the groundfish resource with the conservation of the resource.

Each alternative to status quo is also accompanied by a set of FMP-like bookends that act as examples of the range of actual FMP management measures that the NPFMC and NOAA Fisheries may adopt under that alternative's suite of policy and objectives statements. Analyses have shown that the adoption of some of the FMP bookend management measures, particularly for FMP bookend 2.1, may result in noncompliance with statutory mandates. This does not make Alternative 2 (or any other alternative that may include FMP bookend measures that potentially result in statutory noncompliance) unreasonable. Since the bookend measures represent a range of potential actions neither the NPFMC nor NOAA Fisheries are forced to choose those specific, problematic management measures. The NPFMC and NOAA Fisheries, mindful of their statutory responsibilities, would likely choose other, acceptable management measures contained within the bookend range. The bookend ranges have been designed as to serve as guides to decision-makers and the public to assist them in understanding the impacts that each alternative's policies and objectives may have on the environment. Statutorily acceptable suites of FMP management measures may be crafted from within the bounds of FMP bookends, even if the analysis of one the bookends shows that bookend to be potentially flawed.

Some commenters have argued that the alternatives are unreasonable because only the FMP bookends 4.1 and 4.2 that accompany Alternative 4 comply with the MSA bycatch minimization standards. NOAA Fisheries disagrees and believes that all the alternatives, to the extent practicable, comply with the bycatch standards.

MSA National Standard 9 (16 USC 1851(a)(9)) states the, "[c]onservation 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." FMP required provision 11 (16 USC 1853(a)(11) requires that FMPs "...establish a standard reporting methodology to assess the amount and types of bycatch occurring in the fishery, and include conservation and management measures that, to the extent practicable and in the following priority - - (A) minimize bycatch; and (B) minimize mortality of bycatch which cannot be avoided..."

The National Standards and FMP required provisions require that bycatch and bycatch mortality be minimized to the extent practical. The inclusion of the phrase "to the extent practicable" shows that the MSA recognizes that minimizing bycatch and bycatch mortality are goals that must be sought within the constraints of an overall fisheries management regime. Each alternative commits, either through policy statements, objectives or both, to manage bycatch to the extent practicable under the specific fisheries management philosophy of that alternative. Since the alternatives represent a range of fisheries management philosophies, each alternative embraces varying levels of bycatch standards, to the extent practicable, for that alternative, as required by the MSA. Each set of bookends reflects this fact. For example, the fisheries management regime envisioned by Alternative 2 relaxes restrictions on fisheries, allowing greater fishing effort and potentially greater harvests. The driving assumption behind Alternative 2 is that fishing does not have an adverse impact on the environment except in some specific cases. Under the Alternative 2 FMP bookend some, but not all, of the present bycatch reduction incentives and restrictions would be repealed. Under the Alternative 2 management regime it would be impracticable and contrary to the alternative's management philosophy to maintain a high level of bycatch restrictions while simultaneously embracing a more aggressive harvest strategy. Alternative 2 therefore is a reasonable alternative because it: 1) reduces bycatch and bycatch mortality to the extent practicable for that alternative's management regime and 2) because, as stated above, it meets the objectives of the action as set forth in the 2003 Draft PSEIS' Statement of Purpose and Need (2003 Draft PSEIS, Section 1.1) and informs the decision-makers and the public of the environmental impacts of the alternative. The same reasoning also applies to Alternatives 1, 2, 4 and the PPA.

LCP 9

The PSEIS should analyze the Oceans Alternative as a reasonable alternative for sustainable management of our oceans.

Sample Quote(s)

> 'These comments reflect our attempt to participate meaningfully in the 69 day public comment period for this 7,000 page document. We believe that the PSEIS is fundamentally flawed and that substantial changes to status quo fisheries management are necessary. We request that the NOAA Fisheries adopt and implement the Oceans Alternative, described herein, in the Record of Decision.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

> 'NOAA Fisheries has just released its plan for North Pacific groundfish fisheries. This current plan is fundamentally flawed, but if the NOAA Fisheries adopts the "Oceans Alternative" instead, sustainable management of our oceans will be possible.'
>
> *Georgia Robinett* *Citizen* *Commerce, TX*

Response

CEQ regulations require that the EIS objectively evaluate all reasonable alternatives in a comparative form thus sharply defining the issues and providing a clear basis for choice among options by the decision-maker and the public and for alternatives which are eliminated from detailed study, briefly discuss the reasons fro their having been eliminated. (40 CFR 1502.14) Case law in the 9th Circuit has held that while an agency doesn't have to consider every available alternative, a viable but unexamined alternative may render the EIS inadequate (see Muckleshoot Indian Tribe v. U.S. Forest Service, 177 f.3d 800, 814 (9th Cir. 1999)). However, it is also well settled in the 9th Circuit that NEPA does not require a separate analysis of an alternative which is not significantly distinguishable from alternatives actually considered, or which have substantially similar consequences (see Northern Plains Resource Council v. Lujan, 874 F.2d 661, 666 (9th Cir. 1990)). Thus, if the range of alternatives considered by an agency is adequate, the agency does not have to consider every available alternative (see Headwaters, Inc. V. BLM, Medford District, 914 f.2d 1174, 1180-81 (9th Cir. 1990)) For the reasons set forth below, NOAA Fisheries believes that the Oceans Alternative is not significantly distinguishable from alternatives actually considered and would likely have substantially similar consequences.

The four alternatives analyzed in the 2003 PSEIS reflect the full spectrum of reasonable management policies and illustrative measures. One alternative determined unreasonable and not carried forward was the "no fishing policy". The four alternatives carried forward and the PPA represent management policies ranging from a very relaxed management regime with a aggressive groundfish catch levels and few controls on bycatch and gear (Alternative 2), to a highly precautionary management policy where the burden of proof is shifted from the resource to the managers and users of the resource (Alternative 4). The current management policy (Alternative 1a and b) and a more precautionary management policy (Alternative 3 and the PPA), lay in between Alternatives 2 and 4. The alternatives analyzed in the 2003 Draft PSEIS were the work product of a two-and-a half year public process beginning with public scoping in early 2000 and ending in June 2002 after the agency's release of the 2001 Draft PSEIS. A decision on the final set of alternatives was based on a careful review of public comments on how best to restructure the alternatives so that they were truly viable. All of the alternatives reflect a multi-species, ecosystem-based management approach and conform to federal law. They differ in the number and specificity of the policy goals and objectives contained within each policy statement. The alternatives provide vision and set the stage for future decision-making. They capture the full range of philosophical differences and varying degrees of precautionary management when faced with uncertainty. They capture a range of values and needs from a diverse and educated group of public stakeholders. The goals and objectives are grouped around the key principals and issues identified by the public as being very important in the management of the Alaska groundfish fisheries.

NOAA Fisheries and the NPFMC have conducted a lengthy process where the public and the cooperating agencies have had numerous opportunities to review proposed alternatives, comment on those alternatives, and in almost every case, assist NOAA Fisheries in restructuring the alternatives for analysis. The decision on a final set of programmatic alternatives and their illustrative FMP bookends that capture the full range of issues and comments received on the 2001 Draft PSEIS was made in June 2002. At that time, the best description of the alternative policy now being called " the Oceans Alternative" was contained in a comment letters prepared by a number of environmental organizations. While not exactly providing all of the same recommendations, their general ideas and management concepts were used, to a great degree, in defining Alternative 4 (and to a lesser extent Alternative 3) and the FMP bookends in the 2003 Revised Draft PSEIS.

The Oceans Alternative is best described in the 2003 comment submission (#6141) prepared by a collection of environmental interest groups on the 2003 Draft PSEIS. Attachment E of the CAR provides an excerpt of the Alaska Oceans Program joint submission, which outlines the specific elements of the Oceans Alternative. For the most part, these are the same environmental groups who had previously submitted comments on the alternatives contained in the 2001 Draft PSEIS. Their earlier comments served, in part, as the basis for restructuring Alternatives 3 and 4 for analysis in the 2003 Draft PSEIS.

This letter, as well as other very thoughtful letters, will be provided in their entirety to members of the NPFMC and NOAA Fisheries officials prior to making a final decision on a PA. In addition, several of the environmental interest groups initiated various campaigns during the 2003 comment period in an attempt to generate support of their Oceans Alternative. Using the description of the alternative as stated in their form letters, the oceans alternative can be summarized as a management policy that "requires resource managers to: (1) proactively avoid harm rather than assuming that fisheries cause no harm; (2) maintain large margins of safety to avoid unforeseen impacts; and (3) protect all types of marine habitat, reduce overall catch levels, conserve biological diversity, ensure the integrity of the food web, protect marine fish, birds, mammals and invertebrates (such as crab and corals), and provide for ecologically sustainable fishing opportunities across generations".

Upon receipt of these comment letters, NOAA Fisheries carefully reviewed them to determine whether the Oceans Alternative was in fact a new alternative distinguishable from the range of alternatives already defined and analyzed in the 2003 Draft PSEIS. We have concluded that it is not. We base this determination on a number of factors. The first component of the Oceans Alternative is to proactively avoid harm rather than assuming that fisheries cause no harm. Under the existing management policy, neither the NPFMC nor NOAA Fisheries assume that fisheries cause no harm. They can be found to certainly cause harm at the level of individual fishes. However, our analysis of the Alaska groundfish fisheries has shown that there is no evidence that groundfish fishing causes harm at the target groundfish stock or population-level. We document in this PSEIS (and in prior MSA and NEPA documents) that there is considerable uncertainty with regard to groundfish fishery impacts on non-target and unspecified species. Any adverse impacts on these species are unknown at this time. It is for this reason that the NPFMC and NOAA Fisheries have taken management actions to reduce these potential impacts by setting bycatch limits, restricting certain gear types, and establishing closed areas. All of the PSEIS alternatives, as well as the Oceans Alternative, incorporate an adaptive management strategy, whereby managers will revise the FMPs based on new scientific information and public input. Only Alternative 2 in the PSEIS relaxes conservation based management policies. In making its preliminary decision on a preferred management alternative in June 2003, the NPFMC and NOAA Fisheries chose not to adopt Alternative 2 due to its unacceptable risk of causing adverse impacts on the human environment. They favored a modified version of Alternative 3 as the preliminary preferred alternative (PPA) because it more fully reflects the desire of the NPFMC to develop and accelerate a more precautionary management regime compared to the status quo policy in the groundfish FMPs.

The second component of the Oceans Alternative is to maintain large margins of safety to avoid unforeseen impacts. This component can also be found in Alternatives 1, 3, 4 and the PPA. As stated earlier, each of these alternatives differ in matters of degree. We describe in the PSEIS the steps scientists and mangers take to insert a protective buffer between the ecosystem and the commercial groundfish fisheries. For example, the NPFMC and NOAA Fisheries routinely adopt groundfish TAC levels that are below a target species ABC. The determination of a species ABC has built-in safety margins to reduce the risk of adverse impacts, although under Alternative 1, most of these precautionary measures are not formalized. Alternatives 3 and 4 differ from Alternative 1 by instituting formal precautionary measures in the TAC-setting process, with Alternative 4 representing the most highly precautionary management approach. Other examples are also provided in the PSEIS for each alternative and by their FMP bookends. Therefore, the concept of establishing a certain margin of safety is already captured in the range of alternatives and need not be analyzed further at the programmatic level.

The third component of the Oceans Alternative, "protect all types of marine habitat, reduce overall catch levels, conserve biological diversity, ensure the integrity of the food web, protect marine fish, birds, mammals and invertebrates (such as crab and corals), and provide for ecologically sustainable fishing opportunities across generations", can reasonably be shortened to "maintaining healthy ecosystems and sustainable fisheries". It is important to point out that this component encompasses key elements of the MSA, the Sustainable Fisheries Act, the NOAA Fisheries Strategic Plan, and many of the recommendations of the National Research Council. NOAA Fisheries relied heavily on all these

documents in its restructuring of the programmatic alternatives adopted in June 2002 and analyzed in the 2003 Draft PSEIS and indeed this component is encompassed to a greater or lesser degree in all the alternatives.

We evaluated each of the alternatives and the PPA against federal statutory requirements, the NOAA Fisheries Strategic Plan, the recommendations of the Agency's Ecosystem Principles Advisory Panel and the National Research Council in Section 4.11.1. As stated previously, Alternatives 1, 3, 4 and the PPA all contain the basic components of ecosystem-based management, but to varying degrees, with Alternatives 3, 4 and the PPA providing the strongest example of this approach. The Oceans Alternative components (as provided in the environmental groups 2003 letter; #6141), recommends both policy changes as well as specific management tools and measures that illustrate the alternative. The recommended policy changes are very similar to those presented in the organizations earlier comments and in Alternative 4. All of the ecosystem-based management concepts are captured in Alternative 4. All of the Oceans Alternative recommended management measures are either already reflected in the Alternative 4 FMP bookends, or fall within the range of actions that could be considered under the Alternative 4 policy. We have also determined that some, but not all of the recommended management goals and measures in the Oceans Alternative could also be considered within the range of the PPA FMP bookends. For example, it is recommended that a way to implement the Oceans Alternative policy goal of reducing the bycatch of prohibited species is to reduce the PSC caps by 10 percent over five years. Currently the Agency's PPA contains an identical goal with FMP bookends illustrating a range of actions ranging from maintaining the PSC caps at existing levels to reducing them by as much as 20 percent (no time limit specified), thus the proposed measure provided in the ocean's alternative clearly fits within the range of actions to be pursued by managers in the years ahead, should the PPA be adopted as the final PA.

Similarly, to achieve the Oceans Alternative goal to protect habitat, the groups have proposed filling necessary data gaps and establishing a basin-wide network of marine protected areas, understood to be closed to all commercial fishing, for up to 20-50 percent of the fishable EEZ. Under Alternative 4, an identical goal exists and in its FMP bookends we illustrated and analyzed a management plan where 50 percent of the fishable area was designated closed to all fishing (e.g. no-take marine reserves). This scenario was based on earlier public comments including those of the commenters. We also analyzed as part of Alternative 3, the FMP 3.2 bookend, a scenario where a marine protected area system would be established with up to 5 percent no-take, and up to an additional 15 percent of the fishable area closed to some forms of commercial fishing. The differences between the FMP bookends being the amount of fishable area being designated for an MPA program as well as a difference in the amount of area that would be closed to fishing. We believe that these differences provided sufficient contrast for comparing the programmatic alternatives. Our analysis of these type of measures in the 2003 PSEIS revealed, for the first time, the adverse impacts that could be caused if the areas designated were not properly located and that large total closures could negatively impact commercial fisheries, subsistence users, and coastal communities. Like the commenters, the NPFMC relied on this analysis and found the FMP 4.1 management scenario unacceptable as part of its PPA. The NPFMC chose instead to commit to considering a network of marine protected areas that was less restrictive and was best illustrated by FMPs 3.1 and 3.2. The oceans alternative would likewise mitigate the adverse impacts on recreational and subsistence users, but given its other similarities, it would still likely produce the same significant adverse impacts to commercial fisheries and coastal communities as FMP 4.1.

This example illustrates how the both the stakeholders and the decision-makers have used the analysis contained in this PSEIS to further advance and refine their position on the best way to manage these fisheries in the future. The NPFMC and NOAA Fisheries used the analysis in making its decision to use the FMP 3.2 scenario as one of its illustrative bookends for its preliminary preferred management policy instead of FMP 4.1. The environmental groups used the analysis to reject the FMP 4.1 scenario and are proposing a less severe alternative. We should reiterate that adoption of the PA by the NPFMC and the Agency, with final approval by the Secretary of Commerce, will result in an immediate implementation of a new policy framework that is ecosystem-based and reflects more than three years of public process in

conformance with MSA and NEPA requirements. Under this framework, it is expected that managers and the public will work together in determining the most efficient ways of achieving the goals and objectives stated the FMPs. Producing this PSEIS has served its purpose of informing the decision-maker and the public on the issues and potential environmental consequences of the PA and its alternatives. This PSEIS will also serve managers and the public in the future as a reference and guide for the mutual development of FMP amendments. To the degree that proposed management measures are already captured in the PPA FMP bookends, or within the range illustrated by the bookends, anticipated efficiencies in preparing second-level analyses can be achieved to the benefit of managers, the public, and the resource. Further analysis and refinements of different percentages of no-take areas versus commercial closures in an attempt to reach compromise on specific regulations, is beyond the scope of this programmatic action but falls within the range of actions to be taken in the future. We encourage interested stakeholders to fully participate in the MSA regulatory process where such decisions will be made.

LCP 10
The 2003 Draft PSEIS fails to explain what mitigation measures will be effective and why.

Sample Quote(s)

'At a minimum, alternatives that consider all of the above must be analyzed as reasonable under NEPA. Also, the EIS must explain what mitigation measures will be effective and why.'

E.B. Zukoski *Citizen* *Boulder, CO*

Response

NOAA Fisheries disagrees. The CEQ regulations require the discussion of mitigation measures in EISs (40 CFR 1504.14(f), 1502.16(h)). Mitigation is defined in the CEQ regulations (40 CFR 1508.20) as including:

(a) avoiding the impact altogether by not taking a certain action or part of an action;(b) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment;(d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or(e) compensating for the impact by replacing or providing substitute resources or environments.

EISs are to examine alternatives which include (1) the no action alternative, which is Alternative 1 in the case of the PSEIS; (2) other reasonable courses of actions (Alternatives 2, 3, 4 and the PPA); and (3) appropriate mitigation measures that are not in the proposed action. The purpose behind the requirement that mitigation measures be discussed "...is to ensure that environmental consequences have been fairly evaluated." Carmel-By-the-Sea v. U.S. Dep't of Transp., 123 F.3rd 1142, 1154(9th Cir. 1997) (quoting Roberston v. Methow Valley Citizens Council, 490 U.S. 332 (1989)).

NOAA Fisheries believes that each alternative is composed of a series of appropriate mitigation measures that vary in scope and intensity. That is, the very act of managing the groundfish fisheries entails determining how best to mitigate the effects of prosecuting the fisheries on the environment. Each alternative is composed of a set of policies and objectives which will drive future fisheries management decisions and a set of FMP bookend management tools that demonstrate how the policies may be implemented and objectives realized. Depending on how a policy is implemented, objective realized or tool is used, each policy, objective, and tool in some way can be considered a mitigation measure relative to the CEQ regulations at 40 CFR 1508.20. The range of alternatives in the 2003 Draft PSEIS therefore contains all the mitigation measures determined by NOAA Fisheries to be appropriate for the action. The alternatives demonstrate a range of mitigation measures more to less aggressive relative to those already in place under the status quo fisheries management regime.

The effectiveness of the policy and FMP tool management and mitigation measures are analyzed throughout the document. Appendix F of the 2003 Draft PSEIS contains qualitative analyses of each major groundfish fisheries management component (e.g. TAC setting, marine protected areas, bycatch and incidental catch restrictions, etc.) and the impact the policies in each alternative will have on the use and effectiveness of the components and on the environment. These analyses take a "hard look" at the consequences and effectiveness (relative to the resource and environment) of choosing one set of policy level measures over another. Through the use of the FMP bookend construct, Chapter 4 of the 2003 Draft PSEIS examines in great detail the consequences and effectiveness (relative to numerous resource categories) of choosing different sets of FMP management tools and mitigation measures. In this way, NOAA Fisheries believes that the 2003 Draft PSEIS has fairly evaluated the environmental consequences of the proposed action.

LCP 11
The evaluation of data gaps and incomplete information is lacking in the 2003 Draft PSEIS.

The CEQ regulations contain specific requirements for assessing incomplete or unavailable information, and these standards have not been met in the 2003 Draft PSEIS.

Sample Quote(s)

'NOAA Fisheries did not assess information gaps as required by CEQ Regulations.'
Trustees For Alaska *Environmental Group* *Anchorage, AK*

Page 4.1-11, Section 4.1.2. Data Gaps and Incomplete Information. The last sentence of the first full paragraph at the top of the page should be revised to remove the implication that there is a Council on Environmental Quality (CEQ) exemption for data gaps and incomplete information. The regulations provide a process that agencies are to use when there are data gaps or incomplete information. It is not an exemption.
Judith Leckrone Lee *Federal Agency* *Seattle, WA*

Response

Comments were received stating that the 2003 Draft PSEIS has not fulfilled CEQ requirements to evaluate information in accordance with 40 CFR 1502.22. The commenters noted that the 2003 Draft PSEIS indicates that there is uncertainty associated with each major resource category but that the PSEIS fails to analyze those numerous information gaps, fails to discuss credible scientific evidence, or to evaluate potential effects using a theoretical model, as required by CEQ regulations. The comments indicated that the 2003 Draft PSEIS appears to assume that the costs of obtaining all missing information would be exorbitant, but does not comply with the second part of the regulation. The commenters stated that much of the missing data, including a lack of sufficient information on population size and trends, feeding habits, disturbance by fishing vessels, and the amount, type, and effects of bycatch on the ecosystem, is information that is relevant to potentially significant adverse effects and therefore NOAA Fisheries must take a more detailed look at the missing data. The commenters concluded that these failures to evaluate the significance of these readily apparent holes in the Agency's science render the Agency's evaluation of the potential adverse impacts of its actions insufficient and the Agency must evaluate the lack of information in greater detail as required by CEQ. In one comment, the commenter recommended that the Agency amend Section 4.1.2 to remove the implication that there is a CEQ exemption for data gaps and incomplete information; the commenter noted that the regulations provide a process, not an exemption, that agencies are to use when there are datagaps or incomplete information.

CEQ regulations at 40 CFR 1502.22 set forth how agencies are to address the problem of incomplete or unavailable data when preparing an EIS. In summary, the regulations state that when agencies are evaluating reasonably foreseeable significant adverse effects on the human environment in an EIS and there is incomplete or unavailable information, the agency must make clear in the EIS that such information is lacking. If the incomplete information relevant to reasonably foreseeable significant

adverse impacts is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency must include the information in the EIS. However, if the information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it are exorbitant or the means to obtain it are not known, the agency must include within the EIS: (1) a statement that such information is incomplete or unavailable; (2) a statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment; (3) a summary of existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment; and (4) the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community. "Reasonably foreseeable" is defined by the CEQ regulation as including impacts which have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason.

Section 4.1.2 of the 2003 Draft PSEIS specifically addresses the requirements in 40 CFR 1502.22. NOAA Fisheries has clearly acknowledged those areas where there is incomplete or unavailable information. These acknowledgments can be found throughout Chapter 3 in many of the comparative baseline descriptions in Sections 3.5 through 3.10. Incomplete or unavailable information is also highlighted in Sections 4.5 through 4.9 of Chapter 4 as part of the direct, indirect and cumulative effects analyses. Additionally, as explained in Section 4.1.1, the impact ratings of unknown, conditionally significant adverse, and conditionally significant beneficial indicate a lack of complete data. Section 5.1, Data Gaps and Research Needs, was also added to the PSEIS to provide decision-makers and the public with an understanding of where more information is needed and is an attempt to help prioritize these data needs.

The 2003 Draft PSEIS states in Section 4.1.2 that efforts have been made to obtain all relevant information. NOAA Fisheries agrees with the comment that 40 CFR 1502.22 establishes a process, not an exemption, that agencies are to use when there are data gaps or incomplete information. As explained below, NOAA Fisheries complied with that process in the 2003 Draft PSEIS. The last sentence in the first full paragraph on page 4.1-11 of the 2003 Draft PSEIS should have explained that for the data gaps that still exists, the costs of obtaining the missing data were exorbitant or the means to obtain it are unknown. This statement has been supplemented in the Final PSEIS to provide more detail as to why the agency was unable to obtain the incomplete or unavailable data for use in the PSEIS (see Section 4.1.2).

When the ratings of unknown, conditionally significant adverse, and conditionally significant beneficial were determined, information is provided about the nature of the unavailable information and its relevance to the significance rating. In cases where a 'conditional' qualifier is used, the analysts, using credible scientific methods, have based their assessment on existing information and specific assumptions based on professional judgment in order to evaluate the reasonably foreseeable adverse or beneficial impacts. These assumptions are described in detail where a 'conditional' rating is used. An 'unknown' rating is used when not enough baseline information exists to evaluate the impact of the alternatives. This is demonstrated throughout Sections 4.5 through 4.9. Summaries of the existing scientific evidence relevant to impact ratings are described as part of the comparative baselines developed for each resource in Sections 3.5 through 3.10 of Chapter 3. The baseline includes actions and events through time that have influenced the condition of the resource. The comparative baseline indicates where data gaps or incomplete information are and provides an explanation of how this affects the analysis.

Finally, the PSEIS evaluates impacts based on theoretical approaches and research methods generally accepted in the scientific community. A methodology was developed, to assess the impacts of the various alternatives on each resource examined in the PSEIS. The methods for evaluating direct, indirect, and cumulative effects are presented in detail in Section 4.1.1 of the PSEIS where incomplete or unavailable data are listed for each resource. Each methodology takes into account the uncertainties inherent in the available data and clearly informs the reader of the assumptions used in determining the conclusions.

Given these descriptions and explanations contained in the PSEIS, NOAA Fisheries disagrees with the comments and is of the opinion that the PSEIS satisfies the requirements of 40 CFR 1502.22 for addressing incomplete and unavailable information.

LCP 12

The use of the 2002 baseline ignores the cumulative effects of the FMPs, minimizes uncertainties associated with fisheries management and predetermines the outcome of the analysis by ensuring that the continuation of the fisheries as currently prosecuted will not receive a negative rating.

Sample Quote(s)

> 'NOAA Fisheries' choice of last year as a comparative "baseline" ignores the cumulative effects of the FMPs, minimizes the large uncertainties associated with fisheries management in the North Pacific, and tilts the balance of the analysis to support the status quo. Given the history of NEPA failures in this management system, this approach effectively authorizes and perpetuates the status quo and the NEPA violations.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries disagrees. NOAA Fisheries chose to use 2001 or 2002 as the baseline because it represents the current state of the environment and fisheries and are the most recent years for which NOAA Fisheries has complete information (see the response to LCP 4). It is against this baseline that all environmental analyses are compared, including status quo. The use of the current state of the environment as a baseline for impacts analysis is an accepted practice under NEPA and has been upheld by the courts (see American Rivers v. Federal Energy Regulatory Commission, 187 F.3d 1007 (9th Cir. 1999)). The use of the 2001 or 2002 baseline in no way ensures that the current fisheries management regime will not receive a negative rating. There are two reasons for this. The first reason is that the past effects analysis contained in the document examines the effects of past management actions and FMP amendments on the environment (see Sections 3.2, 3.5 and Appendices C and F of the 2003 Draft PSEIS). During this analysis, it is entirely possible that past management practices could be found to have had a negative effect on the current environment, either singularly or cumulatively. If this is the case, the negative impact would be noted and brought forward as part of the cumulative effects analysis. The second reason is that the analysis of the impacts of both present and future actions, could, and indeed does, show some possible negative impacts to the environment (see various analyses in Chapter 4 and Appendix F of the 2003 Draft PSEIS). These possible negative impacts are noted in the document. It is instructive to note that alternatives 3, 4 and the preliminary preferred alternative all show less possible negative impacts to the environment than alternative 1, the status quo. Throughout the analyses, uncertainties are identified and discussed to the extent required by CEQ guidelines and regulations.

LCP 13

The use of the 2002 baseline ignores the past, cumulative effects of the FMPs and fails to provide decision-makers with sufficient information regarding the impacts of past fisheries management actions on the environment.

Sample Quote(s)

> 'While fishery management regulatory actions and FMP amendments have all been attended by environmental analyses, mainly EAs or EISs, none of those analyses attempted to examine the impact the FMPs in their entirety have had on the environment. The Final PSEIS should contain such an analysis and does not. That failure renders the impacts analysis insufficient.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries disagrees. As stated above in response to LCP 12, NOAA Fisheries chose to use 2001 or 2002 as the baseline because they represent the current state of the environment and fisheries and are the most recent years for which NOAA Fisheries has complete information. It is against this baseline that all environmental analyses are compared, including status quo. The use of the current state of the environment as a baseline for impacts analysis is an accepted practice under NEPA and has been upheld by the courts (see American Rivers v. Federal Energy Regulatory Commission, 187 F.3d 1007 (9th Cir. 1999)). The baseline was established, in part, by examining the past, cumulative effects of the FMP's and management measures taken. The baseline itself represents the state of the environment as effected by those past management decisions as well as other factors and is an invaluable reference point against which decision-makers can judge the effects of the FMPs and management measures. While the 2001 or 2002 baseline does represent the current state of the environment as effected by both past management practices and other external events, the past effects of fisheries management actions alone have also been examined (see Sections 3.2, 3.5 and Appendix C of the 2003 Draft PSEIS). These analyses provide a wealth of information to decision-makers and the public as to the past effects of management actions.

LCP 14

Determining the significance ratings for the impacts of the alternatives by the degree of deviation from the 2002 baseline fails to address ongoing adverse impacts, effectively masks the effects of fishing on the marine environment and allows incorrect insignificance ratings to be assigned to some management measures and/or alternatives.

Sample Quote(s)

'This overall effects ratings scheme hides from the public and the decision-maker the true effects of industrial scale fishing, denying them the information needed to participate effectively in the decision-making: process and predetermines a rating of "insignificance" for the status quo regime.'

Marc Spalding *Environmental Group* *Anchorage, AK*

'A credible evaluation of the direct, indirect and cumulative effects of the status quo and alternatives to the status quo would have focused on the additional, incremental effects of continued destructive fishing practices on already degraded state of marine habitat, and reached significance conclusions in light of these effects.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries disagrees. The 2001 or 2002 baseline represents the status of the environment against which the significance of future impacts must be analyzed, including those of the status quo alternative. As such any ongoing and future adverse (or positive) impacts and their significance will be exposed through the cumulative effects analysis which analyzes the impacts of past, present and future actions. Ongoing and future actions are analyzed against the baseline in an effort to determine if and to what extent the continuation of the action will positively or adversely impact the environment. The significance of ongoing and future impacts are necessarily measured against the baseline since the baseline represents the current state of the environment. It is through this process that NOAA Fisheries ensures that ongoing and future impacts to the environment are not masked and that the significance of any impacts are fairly weighted. Please see Section 4.1 of the 2003 Draft PSEIS for a thorough discussion relating to the determination of significance and the definitions and application of varying levels of significance.

LCP 15

The revised draft fails to adequately analyze the cumulative effects of the FMP amendments and fisheries management measures since the last EISs were prepared, without which the 2002 baseline can not be used to determine the significance of the alternative's effects.

Sample Quote(s)

> 'A second major deficiency in the 2003 Draft PSEIS is the lack of a comprehensive evaluation of management under the existing FMPs since they were implemented more than 20 years ago. The 2003 Draft PSEIS does attempt to analyze tile impacts of the numerous amendments to the two FMPs, but it never provides an assessment to the impacts of the FMPs themselves. To remedy this failure, NOAA Fisheries must either include a comprehensive discussion of these effects in its cumulative impacts discussion, or change the baseline for its impacts analysis so that it begins when the FMPs were promulgated.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries disagrees. The effects (both singular and cumulative) of the FMP amendments are analyzed in Sections 3.1 and 3.2 and Appendix C of the 2003 Draft PSEIS. The comparative baseline, which describes the affected environment, was prepared utilizing data available through 2001 or 2002 and incorporates the effects of past fishery management practices, FMP amendments and other external factors. The comparative baseline was then used to assess the past, present and future direct, indirect and cumulative effects for each alternative.

MSA Compliance

LCP 16

The 2003 Draft PSEIS fails to adequately assess whether the alternatives comply with the requirements of the Sustainable Fisheries Act to minimize bycatch to the extent practicable.

The PPA, in particular, does not include measures to minimize bycatch, only to minimize bycatch mortality. This failure also has NEPA compliance implications.

Sample Quote(s)

> 'A second flaw is the profound lack of information. NOAA Fisheries failed to address most of the bycatch mandates of the MSA in the DPSEIS. It also failed to provide sufficient detail of necessary background information. Furthermore, NOAA Fisheries does not fully explore all of the negative impacts caused by incidental catch under the status quo and other proposed FMP bookends. Therefore, NOAA Fisheries did not fulfill the fundamental purpose of NEPA: to provide information in sufficient detail for both the agency and the public to make informed decisions.'
>
> *Trustees For Alaska* *Environmental Group* *Anchorage, AK*

Response

National Standard 9 states, "Conservation and management measures shall, to the extent practicable: 1) Minimize bycatch; and 2) To the extent bycatch cannot be avoided, minimize the mortality of such bycatch." Bycatch is defined as "fish that are harvested in a fishery, but that are not sold or kept for personal use." "Bycatch does not include fish released alive under recreational catch-and-release fishery management programs." "To evaluate conservation and management measures relative to this and other national standard, as well as to evaluate total fishing mortality, Councils must: 1) Promote development of a database on bycatch and bycatch mortality in the fishery to the extent practicable. 2) For each management measure, assess the effects on the amount and type of bycatch and bycatch mortality in the fishery. 3) Select measures that, to the extent practicable, will minimize bycatch and bycatch mortality. 4) Monitor selected management measures."

The PPA addresses the four standards for reducing bycatch through a variety of actions. Under The NPFMC has been working with NOAA Fisheries and other interested scientists to identify new methods for management of non-target species. Whether non-target species are treated as a separate management group or existing groups are reassessed, the goal of this amendment package is to improve management of non-target species (Item 3 above). The NPFMC has also been active in imposing restrictions on the amount of discard (IR/IU).

LCP 17
The 2003 Draft PSEIS habitat analysis violates the MSA National Standard requiring the use of best available scientific information to manage the fisheries.

Response

Please refer to the responses to HAB 1.

LCP 18
The 2003 Draft PSEIS analysis is insufficient to guide decision-makers in managing the fisheries.

Because the PSEIS is solely a policy-level analysis, it cannot adequately inform practical decision-making.

Sample Quote(s)

> 'However, a disconnect continues to exist between information on the NEPA decision-making process in Chapter 1 and the fishery management decision-making process in Chapter 2. The PSEIS should provide the reviewer with a succinct explanation of the connection between the requirements of the NEPA process and how that process interacts with the overall fishery management decision-making framework. A simplified figure comprising elements of Figures 1.4-1, Figure 2.4.1, and Figure 2.4.2 would provide the reader with a clearer understanding of the connection between the NEPA and FMP processes.]'
>
> *Judith Leckrone Lee* *Federal Agency* *Seattle, WA*

Response

The Agency received comments stating that the intent of NEPA is to help public officials make decisions that are based on understanding the environmental consequences of alternative actions and that the intent of the MSA is to take actions that protect, restore, and enhance the marine environment. The commenters believe that the PSEIS fails these mandates of NEPA and the MSA because the policy alternatives do not address the various decisions that must be made by the agency in managing the fisheries under the MSA, and therefore the analysis of the environmental consequences of each alternative is insufficient. In order for the agency to fulfill its obligations under the MSA and NEPA, the commenters argue that the PSEIS should examine alternative FMPs that would identify a single set of "conservation and management measures" for the components of that FMP alternative. According to the commenters, such FMP alternatives would provide a level of information on the environmental impacts of the alternatives sufficient to guide decision-makers in managing the Alaska groundfish fisheries.

As explained in other responses, NOAA Fisheries is of the opinion that the alternatives structure within the PSEIS is co-extensive in scope with the structure of the current BSAI and GOA groundfish FMPs and examines alternatives to all of the major components of the FMPs consistent with the requirements of NEPA, the MSA and the Federal action as described in the PSEIS. Contrary to the statements made in these comments, the PSEIS analysis displays not only the environmental impacts that occur under the current FMPs but also provides in sufficient detail for a programmatic analysis the environmental effects of alternative management policies and management measures in Alternatives 2 through 4 and the preliminary preferred alternative. Specifically, the appropriate scope of a programmatic EIS is delineated in our response to LCP 6. NOAA Fisheries disagrees with the commenters that only alternatives that contain a single suite of FMP management measures can sufficiently display the environmental impacts of the PSEIS alternatives for informed decision-making. While the environmental impacts of a single set

of measures for a given alternative would display environmental impacts of that alternative, the PSEIS's analysis of two sets of management measures for each alternative other than status quo also sufficiently displays the environmental impacts of each alternative commensurate with a programmatic analysis under NEPA. Beneficial, adverse, neutral and unknown impacts to various aspects of the environment are presented in the PSEIS. The PSEIS provides decision-makers with sufficient information on which to make programmatic decisions concerning the future management of the Alaska groundfish fisheries and provides information on which future analyses may tier.

Endangered Species Act and Marine Mammal Protection Act Compliance

LCP 19

The 2003 Draft PSEIS has not analyzed whether the alternatives are in compliance with ESA requirements to rebuild endangered species populations.

The PSEIS does not individually analyze the effects of the alternatives on each endangered marine mammal population.

Sample Quote(s)

> 'NOAA Fisheries must assess whether the alternatives considered in the DPSEIS are consistent with requirements under the ESA. In other words, NOAA Fisheries must evaluate whether or not fishing practices are compatible with endangered species' recovery plans and do not unlawfully take marine mammals. In order to do so, it must assess all potential impacts on endangered marine species.'
>
> *Trustees For Alaska* *Environmental Group* *Anchorage, AK*

Response

Several federal statutes mandate NOAA Fisheries to manage, conserve and protect the Nation's marine resources. Each alternative analyzed in the PSEIS, including the PA, complies with these statutes, which includes the Endangered Species Act of 1973. As stewards of the marine environment, NOAA Fisheries is committed to the long-term sustainability of the marine ecosystem and specifically, protected species under the agencies' jurisdiction including cetaceans and pinnipeds (excluding walruses). By reducing conflicts that involve protected species and committing to the recovery and sustainability of protected species populations, NOAA complies, and in some cases, exceeds the requirements of the Endangered Species Act and other applicable federal statutes. For further discussion of the ESA and other federal statutes, please refer to Section 4.11.1 and table 4.11-1. Please also refer to the response to MAM 6.

LCP 20

NOAA Fisheries admittedly violates its monitoring responsibilities of fisheries interactions with marine mammals.

The MMPA requires that NOAA Fisheries monitor fishery-marine mammal interactions.

Sample Quote(s)

> 'Additionally, NMFS does not evaluate whether the various FMP bookends will bring the agency into compliance with the law. There is no assessment of the measures that will be taken under each FMP bookend to comply with the statutory requirement to accurately monitor marine mammal mortality and injury due to interaction with commercial fisheries.'
>
> *Trustees For Alaska* *Environmental Group* *Anchorage, AK*

Response

The Alaska groundfish fisheries in the BSAI and GOA are regulated by the federal government under the authority of the MSA and other applicable federal statutes and executive orders, and administered jointly by the NPFMC and NOAA Fisheries through a highly developed system of FMPs and amendments. Among many other provisions, the FMPs and amendments have the authority to prohibit, limit, condition, or require the use of specified types and quantities of fishing gear, fishing vessels, or equipment for such vessels, including devices which may be required to facilitate enforcement provisions, including monitoring requirements under MMPA (MSA Sections 303(a) and (b), 16 USC 1853(a) and (b)). Please refer to PSEIS Sections 2.3, 2.4, and 2.5 for a detailed description of the present regulatory and management structure governing the groundfish fisheries.

The North Pacific Groundfish Observer Program (NPGOP) is responsible for the collection, maintenance and distribution of data for scientific, management, and regulatory compliance purposes for fisheries in the EEZ off the coast of Alaska (Appendix F-10). One of the tasks of this program is to provide information on incidentally caught marine mammals and other protected species. Monitoring interactions between marine mammals and the groundfish fisheries is accomplished through both fisheries observers and self-reporting.

Tiering and Implementation

LCP 21
Contrary to the Agency's intention, it will not be possible to tier from the PSEIS directly to fishery management plan amendments.

The PSEIS is not an adequate FMP EIS, as it only deals with policy-level alternatives. Therefore, it cannot be used as a tiering document for plan amendment analyses.

Sample Quote(s)

> 'Nor can the agency tier appropriately from the PSEIS as it is constructed currently to plan amendments because there is a step missing in the analytic chain. While the agency may tier from a program-level EIS to a site-specific determination, it cannot tier directly from a program-level EIS to amendment-level EAs or EISs.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries received comments stating that due to the flawed structure of the alternatives under consideration in the 2003 Draft PSEIS given the Federal action and the current groundfish FMPs, the agency will be unable to tier subsequent EAs or EISs for future FMP amendments or regulatory actions from the PSEIS. Without the PSEIS, these commenters note that the only programmatic NEPA evaluations of the groundfish fisheries are the 1978 and 1981 EISs, which have been recognized as no longer sufficient for management of the North Pacific fisheries and therefore NOAA Fisheries can no longer tier from those documents. Additionally, commenters stated that NOAA Fisheries is missing an important step if it attempted to tier subsequent EAs or EISs for future FMP amendments or regulatory actions from the PSEIS. These commenters argue that because the PSEIS only examines different fisheries policies, only NEPA documents that evaluate alternative FMPs that would further the preferred policy alternative can be tiered from the PSEIS. These commenters argued that only a NEPA document that evaluates alternative FMPs can be used as a basis from which to tier subsequent EAs or EISs for future FMP amendments or regulatory actions. Because the PSEIS has not evaluated alternative FMPs, but rather only evaluated different fisheries management policies, it cannot be used as a document from which to tier subsequent EAs or EISs for future FMP amendments or regulatory actions.

NOAA Fisheries disagrees with these comments. As already explained in the response to LCP 6, the alternatives in the PSEIS analyze comprehensive policy-level FMP alternatives that examine all of the major components of the BSAI and GOA FMPs at a programmatic level, commensurate in scope with the Federal action and therefore consistent with the requirements of NEPA. Each alternative contains a policy statement, goals and objectives for that policy statement, and except for Alternative 1 (status quo), a pair of FMP "bookends" that illustrate and frame the range of implementing management measures for the alternative's policy. The PSEIS has examined all that the commenters argue should be examined in a document that is to be used as a programmatic basis for future more specific, project-level amendments to the FMPs or their regulations. The commenters take issue with the agency's examination of two FMPs representing a range for the policies contained within the alternative rather than the examination of a single FMP as representative of the alternative's policies, stating that until a single FMP for a policy statement is examined, NOAA Fisheries has failed in its responsibilities to programmatically evaluate the authorization and management of the Alaska groundfish fisheries and therefore cannot tier future NEPA analyses from the PSEIS. NOAA Fisheries is not required by NEPA to prepare another document evaluating additional FMPs within the FMP bookend range before the NPFMC and the agency can use the PSEIS as a basis upon which to tier future NEPA documents. As such, the PSEIS when completed will supplant the 1978 and 1981 groundfish EISs and will serve as a document from which the agency can tier subsequent EAs or EISs for future FMP amendments or regulatory actions.

LCP 22
The specific management measures proposed in the PSEIS are so vaguely worded that there is no certainty that they will be implemented.

Sample Quote(s)

> 'Moreover, a choice among the four alternatives will not result in any direct, implementable change in fishery management. Rather, the agency has designed the PSEIS purposefully to avoid restricting: the Council's discretion in managing the North Pacific groundfish fisheries.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries received comments stating that the vague and discretionary language within the PPA suggests that nothing concrete will become of many of the measures contained in the PPA. These commenters expressed their concern that there are no commitments in the PPA's system of management and there is no accountability for decisions made. Even if improvements are implemented into FMP regulations under the PPA, the commenters felt that the public will have no way of knowing what improvements the NPFMC may ultimately adopt as FMP amendments, whether adopted regulations will provide the protection envisioned by NOAA Fisheries in either of the PPA bookends, when such improvements would be made, or how the effects of any improvements would interact with the effects of other improvements. One example provided in the comments focused on the lack of formal commitments in the PPA to address shortcomings in single-species management, stating that the PPA contained only vague promises of future improvements "as necessary" and the future incorporation of ecosystem-based considerations "as appropriate" based on "sound scientific research."

NOAA Fisheries disagrees with the comments stating that adoption of the PPA will result in no commitments or accountability by NPFMC and NOAA Fisheries. When NPFMC selects its PA at its April 2004 meeting, that decision will represent a commitment on the part of NPFMC to manage the Alaska groundfish fisheries pursuant to the policies as further defined by the FMP bookends within that alternative. In its pursuit of this policy, NPFMC will initially recommend to the Secretary FMP amendments that would change the policy statements within the BSAI and GOA FMPs so that they are reflective of the policy contained within the PA. If the Secretary approves these amendments, NOAA Fisheries will also commit to the implementation of the new fisheries management policy. These commitments mean that both NPFMC and the agency will apply the new policy to all actions currently

under consideration by NPFMC and the agency and that all future actions must be consistent with this policy or a reasonable explanation must be provided as to why a deviation from the policy is warranted. Furthermore, NPFMC will develop a schedule, or timeline, for addressing those aspects of the new fisheries management policy that are not sufficiently addressed in the FMPs.

While the language in the PPA is not the specific, detailed language typically used by NPFMC and NOAA Fisheries when developing project-specific actions that address a particular aspect of fisheries management, the language in the PPA is sufficiently detailed for making programmatic decisions on the management of the groundfish fisheries.

LCP 23
The timeline developed by the NPFMC for implementation of the preferred alternative should be reasonable and the NPFMC should review and revise the timeline as necessary in the future.

Sample Quote(s)

> 'The timeline developed by the Council should reflect a reasonable estimate of a schedule for implementation, but will not be a binding timetable. Although failure to meet a specific date in the timeline will not be an automatic violation of either statute, the Council should review and revise the timeline as necessary in the future.'
>
> *Ronald G. Clarke* *Industry Advisory Committee* *Juneau, AK*

Response

The NPFMC intends to develop a timeline at its June 2004 meeting that will contain estimates as to when NPFMC plans to initiate analyses and take final action on various actions consistent with its new groundfish fisheries management policy. The timeline is being developed in recognition of the fact that NPFMC and NOAA Fisheries cannot consider all actions simultaneously and that some actions will take longer than others to develop and analyze. The timeline will be reviewed periodically by NPFMC to ensure that NPFMC's actions are proceeding according to schedule. If it appears that NPFMC will be unable to finish its review and make a recommendation on a particular action within the estimated time, then NPFMC will revise the timeline to reflect the new estimated completion date.

LCP 24
The language in the 2003 Draft PSEIS regarding research should be modified to avoid committing NPFMC or NOAA Fisheries to research commitments that may be impossible to meet due to new information or lack of funding.

Sample Quote(s)

> 'Any research needs identified in this PSEIS document should be qualified with "if funds were made available and research remains appropriate." This caveat will protect the agency from making research commitments that are neither useful nor possible in the future, and so avoid potential litigation if that research does not occur.'
>
> *Ronald G. Clarke* *Industry Advisory Committee* *Juneau, AK*

> 'NMML programs and activities that "will be pursued, " Page 5-6, 5.1.1.1. Stating that all of these items will be pursued may leave the agency open to litigation if they do not occur. Change the language by deleting "are" and adding, "if resources are available and the research topic judged still appropriate to the NMML include."'
>
> *Ronald G. Clarke* *Industry Advisory Committee* *Juneau, AK*

Response

NOAA Fisheries agrees that expanded research and monitoring programs are dependent on the Agency receiving funds for this purpose. However, it is the intent of the Agency to pursue these funds in order to achieve all the benefits of future research and monitoring outlined in the PPA.

LCP 25
The 2003 Draft PSEIS fosters a fair and transparent decision-making process and serves as a valuable tool for stakeholders and fishery managers to evaluate the effectiveness of past management actions, assess the potential costs and benefits of future actions, and set a course for improving the scientific information that forms the foundation for these actions.

Sample Quote(s)

'We strongly support the PSEIS as a means to foster both a fair and transparent decision-making process and as a valuable tool for stakeholders and fishery managers to evaluate the effectiveness of past management actions, assess the potential costs and benefits of future actions, and set a course for improving the scientific information that forms the foundation for these actions.'

Jan Jacobs *Commercial Fishing* *Seattle, WA*

Response

NOAA Fisheries acknowledges the comment and agrees with statements contained in the comment.

Public Process

LCP 26
The short comment period has hindered public process.

NOAA Fisheries responded early to calls for the 48-day comment period to be extended, resulting in a 70-day comment period. However, given the size of the document, the comment period was still insufficient for meaningful public participation, particularly from Alaska Natives.

Sample Quote(s)

'How in the world could anyone read this document in 48 days, no less read, digest, and draft comments on a document this size. The task is impossible. NO one on earth could do it. NMFS is not providing a "meaningful opportunity to comment" as the CEQ regulations require.'

Charles Moore *Citizen* *Anchorage , AK*

'NOAA Fisheries has scheduled public meetings in such a way as to preclude meaningful public participation. The PSEIS was made available to the public on August 29. No public meetings were scheduled after October 7. It is absurd of the agency to presume that meaningful comments on the substance of a 7000-page EIS could be prepared and ready to present one week after the document was made available to the public. If the agency were serious about encouraging and considering public participation, it would have scheduled public meetings later on in the process to allow stakeholders to formulate meaningful comments.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries received many comments on the length of the comment period for the 2003 Draft PSEIS, stating that it was an inadequate amount of time to read, digest, and then comment on a 7000+ page document and therefore NOAA Fisheries failed to provide a meaningful opportunity to comment as required by CEQ regulations. Some appreciated the extension of time for public review (NOAA Fisheries extended the public comment period from 48 days to 70 days) but still believed the time for public comment was inadequate given the scientific complexity of the analysis, the detailed descriptions and number of charts, figures, and graphs, the need to comprehensively evaluate the PSEIS's novel approach to alternatives, and the document's importance to the future of the North Pacific. Many commenters expressed the opinion that the comment period should have been at least 180 days. The commenters noted that NOAA Fisheries did not provide any justification for such a short comment period.

CEQ regulations at 40 CFR 1503.1(a)(4) provide that agencies are to request comments from the public, affirmatively soliciting comments from persons or organizations who may be interested or affected by the proposed action and alternatives under consideration. Additionally, CEQ regulations at 40 CFR 1506.10(c) state that agencies are to provide at least a 45-day comment period on draft EISs. The comment periods on both the 2001 and 2003 Draft PSEISs complied with these requirements. NOAA Fisheries acknowledges that the comment period for the 2003 Draft PSEIS was much shorter than the comment period for the 2001 draft PSEIS, but disagrees with the commenters that the shorter comment period precluded a meaningful opportunity for the public to comment on the 2003 Draft PSEIS. As a result of the comment period on the 2003 Draft PSEIS, the agency received 13,400 letters of comment, containing 2,557 substantive comments. These substantive comments covered all major areas of analysis within the 2003 Draft PSEIS. The agency received comments on harvest management, the TAC setting process, target groundfish species, bycatch, habitat, marine protected areas, marine mammals, seabirds, ecosystem health and management, economic and socioeconomic effects, Alaska Native issues, cumulative effects, monitoring and enforcement, research, the alternatives, legal compliance and public process, and editorial and document management. NOAA Fisheries considered these substantive comments and where appropriate has made adjustments and additions to the PSEIS based on these comments. Although the comment period was not a lengthy one and the public was required to generate their comments in a compressed timeframe, the agency received thousands of articulate, thoughtful, and illuminating comments on the 2003 Draft PSEIS. The volume and caliber of the comment received indicates that there was a meaningful opportunity to comment on the 2003 Draft PSEIS.

Several factors influenced the length of the comment period on the 2003 Draft PSEIS. In December 2001, NOAA Fisheries decided to substantially revise the 2001 draft PSEIS based on public comments the agency received on the draft. After making the decision to substantially revise the 2001 draft PSEIS, NOAA Fisheries solicited several rounds of public comment on the development of restructured alternatives to be analyzed in the revised draft and diligently began preparation of a revised draft PSEIS in 2002. In September 2002, NOAA Fisheries issued a schedule for the completion of the PSEIS. Under this schedule, a revised draft PSEIS was to be issued in September 2003, with a 110-day comment period, a final PSEIS was to be issued in January 2005 with a 60-day comment period, and a Record of Decision was to be issued in May 2005.

On February 6, 2003, the Western District of Washington ordered NOAA Fisheries to issue the final PSEIS and Record of Decision on the PSEIS by September 1, 2004. When the agency received this order, NOAA Fisheries evaluated the work that remained to be done on the 2003 Draft PSEIS as well as the tasks that needed to be completed to produce the final PSEIS and the Record of Decision. The agency also took into consideration NPFMC's pre-established meeting schedule for 2003 and 2004. Based on this evaluation, NOAA Fisheries significantly reduced and accelerated the agency's timeframes in which to develop, review, and produce the revised draft PSEIS, the final PSEIS, and Record of Decision by September 1, 2004, and determined that a 48-day comment period on the revised draft was the most the agency could provide. After receiving numerous requests to extend the comment period, NOAA Fisheries re-evaluated the remaining tasks and further truncated the agency preparation schedule to accommodate an extension of the comment period to a total of 70 days.

A complete history of the development of the PSEIS is provided in Section 1.5 of the PSEIS. Throughout the development of the PSEIS, NOAA Fisheries has diligently worked to complete the PSEIS and has complied with the letter and the spirit of NEPA by providing numerous opportunities for public participation at every major stage in the development of the PSEIS. The comments received from the public from each of those opportunities have substantially influenced the structure and content of the PSEIS.

LCP 27

The location and timing of the public meetings held by NOAA Fisheries during the comment period on the 2003 Draft PSEIS impermissibly precluded meaningful public participation.

Meetings were timed for the beginning of the comment period, before the public was able to come to grips with the lengthy document. Also, the meetings were held in locations convenient for industry participation but not for coastal communities, particularly Alaska Native communities.

Sample Quote(s)

> 'Moreover, the agency set the meetings in Maryland, Seattle, Juneau, Kodiak, and Anchorage --locations easily accessibly to industry, but far from the remote villages most directly impacted by management of the fishery resources. In so doing, the agency again failed to take simple steps, such as scheduling public meetings closer to the impacted people, to accommodate Native populations.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries received comments expressing the concern that meaningful public participation was precluded as a result of the location and timing of the public meetings held during the comment period on the 2003 Draft PSEIS. Specifically, commenters took issue with the fact that the 2003 Draft PSEIS was made available on August 29, 2003, yet no public meetings were scheduled after October 7, 2003, stating that meaningful comments on the substance of the lengthy document could not be prepared and ready to present one week after the document was made available to the public. Commenters noted that if NOAA Fisheries was serious about encouraging and considering public participation, it would have scheduled public meetings later in the comment period. Commenters also took exception with the location of the public meetings, stating that the meetings were held in locations that were easily accessible to the fishing industry but not to citizens of the remote villages most directly impacted by management of the fishery resources.

NOAA Fisheries disagrees with these comments for the following reasons. NOAA Fisheries held five public meetings during the public comment period on the 2003 Draft PSEIS shortly after it was made available to the public for review and comment. These meetings were held in Washington, D.C., on September 8, 2003, from 1-4 pm; Seattle, WA, on September 11, 2003, from 5-8 pm; Juneau, AK, on September 17, 2003, from 1-5 pm; Kodiak, AK, on September 24, 2003, from 3-7 pm; and Anchorage, AK, on October 7, 2003, from 5:30-8 pm. These meetings served three purposes: (1) to provide the interested public with an overview of the document and its findings early in the comment period in order to help the public understand and navigate its way through the lengthy analysis; (2) to provide a question and answer session for interested parties who were not prepared to give formal testimony, but had questions about the process or the analysis; and (3) to solicit formal public comment on the 2003 Draft PSEIS recognizing that, at least at the early September meetings, the public would not have had much opportunity to review the document and develop comments. The locations of the meetings were selected because many interested parties or their representatives are located within or near these cities. Additionally, the Seattle, Kodiak, and Anchorage meetings were all planned coincident with other Alaska fishery management meetings in order to accommodate those members of the public already in that location. NOAA Fisheries also extended additional comment opportunities to Federally recognized Alaska Native tribal organizations (please see response to comment AKN 8 for a further discussion). Among other things, CEQ regulations at 40 CFR 1503.1(a)(4) state that after preparing a draft EIS and before preparing a final EIS, an agency must request comments from the public, affirmatively soliciting comments from those persons or organizations who may be interested or affected. NOAA Fisheries fulfilled this responsibility by providing the public in general and interested persons specifically with a copy of the 2003 Draft PSEIS and requesting comments during a 48-day comment period that was extended by NOAA Fisheries at the request of interested organizations to a 70-day comment period. NOAA Fisheries provided several ways in which the public could submit comments on the 2003 Draft PSEIS: (1) through written submissions, (2) through electronic submissions via a NOAA Fisheries

website, and (3) through the ability to provide oral comments at the five separate public meetings referenced above. Neither the CEQ regulations or NOAA Fisheries' environmental review procedures for implementing NEPA contained in NAO 216-6 require the agency to hold public meetings during the public comment period on a draft EIS. However, for the purposes stated above, NOAA Fisheries determined that public meetings on the revised draft would provide an additional avenue by which to encourage and facilitate public involvement in the preparation of the PSEIS. To have held the public meetings later in the comment period as the commenters suggest would have undermined the first and second purposes for the meetings. Although some of the interested public may not have been able to provide the agency with substantive comments on the 2003 Draft PSEIS at the earlier meetings, NOAA Fisheries provided other opportunities to submit comments and soliciting public comment was not the sole purpose of the meetings.

As a result of the public meetings, NOAA Fisheries was able to present a condensed version of the information contained in the 2003 Draft PSEIS for the interested public, to speak informally with members of the public about the 2003 Draft PSEIS, and to increase public understanding of the 2003 Draft PSEIS by answering questions ranging from how to navigate to specific issues within the document, to the history behind the development of the alternative framework, to the practical outcomes resulting from the PSEIS process and the schedule for completion. The agency was also able to clarify issues to better focus the written and electronic comments that the agency received. NOAA Fisheries has made substantial efforts to involve the public and solicit public comment during each critical step in the development of the PSEIS. For these reasons, the timing and location of the public meetings did not preclude meaningful public participation in the development of the PSEIS.

LCP 28

NOAA Fisheries impermissibly limited the ways in which comments could be submitted on the 2003 Draft PSEIS in a deliberate attempt to reduce the number of comments received on the 2003 Draft PSEIS. Instead, NOAA Fisheries should have accepted comments on the 2003 Draft PSEIS in whatever format the public chose to submit its comments.

The public should be able to submit email or faxed comments, without restriction.

Sample Quote(s)

> 'I appreciate the opportunity to submit online comments, but feel that the 4000 character limitation is insufficient. Also, I received conflicting messages about whether faxed comments were acceptable. The public should be able to submit comments in any format that is available and should not be limited in the length of their comments.'
>
> *Geoff Shester* *Academia* *Stanford, CA*

Response

NOAA Fisheries received comments stating that the agency should have accepted all forms of comment on the 2003 Draft PSEIS and that by limiting the forms in which comments could be submitted, deliberately and impermissibly reduced the number of comments received. Specifically, the agency received comments from the public appreciating the opportunity to submit comments electronically but that there was not enough space in the electronic format in which to type a comment (i.e. that the 4000 character limitation was insufficient space in which to write a comment). NOAA Fisheries also received comments stating that faxed comments should have been acceptable and that comments submitted via email rather than through the agency's website should have been acceptable. By refusing to accept faxed or emailed comments, these commenters stated that NOAA Fisheries impermissibly restricted public participation. Some commenters also suggested that the agency's electronic comment website was a deliberate attempt to reduce the number of comments generated because interested parties had to log on to the NMFS website and submit comments through the interface created by the agency rather than being able to send e-mail comments as structured by the submitter. These commenters were of the opinion that the extra steps involved in the new system served no discernable purpose other than to discourage

interested individuals from participating in the public process. NOAA Fisheries disagrees with these comments. Agencies are required to solicit public comment and participation in the development of an EIS but there are no requirements in the CEQ regulations or NAO 216-6 concerning the format in which agencies must accept comments. With both the 2001 and 2003 Draft PSEISs, NOAA Fisheries provided the public with a range of commenting options that were designed to facilitate and encourage public participation and involvement.

For the 2001 Draft PSEIS, the public was invited to submit written comments by mail service or by facsimile, and to submit oral comments at the scheduled public meetings. At the time the 2001 Draft PSEIS was released for public comment, NOAA Fisheries' policy was to not accept public comments submitted via e-mail or the Internet, therefore the agency did not provide for the electronic submission of comments on the 2001 Draft PSEIS. During the last days and hours of the comment period on the 2001 Draft PSEIS, thousands of public comments were faxed to NOAA Fisheries. Because the fax number provided was constantly busy, many commenters utilized other agency fax machines, tying up those machines for hours and disbursing the comments throughout the agency rather than having all of the comments received at one central location. As a result, comments continued to be received via facsimile for several days after the close of the comment period and it is likely that some commenters who chose to fax their comments late in the comment period were unable to get their comments submitted or submitted in a timely way. When the 2003 Draft PSEIS was released for public comment, the public was invited to submit written comments by mail service or electronically through an agency website, and to submit oral comments at the scheduled public meetings. In the intervening time between release of the 2001 and 2003 Draft PSEISs, NOAA Fisheries developed and began testing an e-comments database. The 2003 Draft PSEIS was selected as a pilot project for testing the e-comments database. The website provided a systematic and reliable way for the public to submit comments through the internet and provided an electronic medium for categorizing the comments saving hours of agency staff time. The website also was designed to save the public time as well. The commenter utilized drop-down menus and other aids that allowed them to categorize their comments by issue. The website also provided links to the 2003 Draft PSEIS and other references. Contrary to the comments received, the website did not limit the length of testimony a commenter could submit. Due to technical constraints of the website, there was a 4000 character limit on the text that could be submitted at one time. However, commenters needed only to enter their personal information once, and at each 4,000-character submission, were invited to submit another comment. The misunderstanding that electronic comments were constrained to a 4000 character limit appeared to be an issue early in the comment period. NOAA Fisheries clarified the issue at each of the public meetings and it appears as though the misunderstanding was resolved because the agency received multiple e-comment submissions from individual commenters. NOAA Fisheries determined that it would not accept faxed comment on the 2003 Draft PSEIS. This decision was due in part to the experiences encountered with faxed comments on the 2001 Draft PSEIS as well as the development and use of the e-comments system. NOAA Fisheries believed that the growing interest in electronic submission of comments and the reliability of the e-comments system made it a preferable method for submitting comments. Additionally, NOAA Fisheries determined that there was no way to prevent a last minute rush of comments submitted via fax or the chance that the machinery could not keep up with the volume of comments that might be submitted. Although the agency received fewer submissions on the 2003 Draft PSEIS than it did on the 2001 Draft PSEIS, NOAA Fisheries still received 13,402 submissions on the 2003 Draft PSEIS. This high number of submissions indicates that public participation was not hindered. Furthermore, of the total number of submissions on the 2003 Draft PSEIS, 11,966, or approximately 90 percent, were submitted through the agency's e-comments website. The agency received comments on the 2003 Draft PSEIS from every state in the union as well as fifty-five foreign countries.

LCP 29
NOAA Fisheries should move with haste on the Final PSEIS.

Sample Quote(s)

'Please move with haste on the "Programmatic Supplemental Environmental Impact Statement".'
Juan DeMarco *Academia* *Palmyra, VA*

Response

NOAA Fisheries agrees with the comment and has diligently worked to complete the PSEIS in a timely manner. NOAA Fisheries intends to publish a Final PSEIS in July 2004 and issue a Record of Decision no later than September 1, 2004.

Environmental Uncertainties and the Burden of Proof

LCP 30
The burden of proof still rests solely on the environment, which is wrong.

Sample Quote(s)

'The status quo FMPs and PPA do assume that fishing has some adverse impacts on the environment, but the burden of demonstrating "significant impact" from fishing activities remains largely on the
Marc Spalding *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries disagrees that the burden of proof rests solely on the environment under Alternatives 1, 3, or the PPA. While not explicitly shifting the burden of proof from the environment to humans (Alternative 4), Alternative 1 does recognize the uncertainties associated with managing the Alaska groundfish fisheries and for that reason the NPFMC and NOAA Fisheries have chosen to manage conservatively. Under Alternative 4, the illustrative FMPs ranged from a severely restricted fishery scenario with substantial reductions in target quotas, and closed areas, to a temporary suspension of all groundfish fishing until each fishery could be individually reviewed and certified as having minimal impacts to the environment. Both the NPFMC and the Agency rejected this alternative as the PPA because the cost to humans would be too high. Instead, a modified version of Alternative 3 was selected as the PPA because it contained important elements of ecosystem-based management. It also provides an acceptable level of fishing necessary to meet local, regional, and national needs.

Conservative quotas, bycatch limits, closed areas, and gear restrictions, are all examples of management measures aimed at mitigating adverse impacts caused by fishing. As new scientific information becomes available, the Agency has a history of adapting its management regime to address concerns using the Magnuson Stevens Act National Standards as guiding principles. The PPA represents a shift in management policy toward a more precautionary position. It also provides an acceptable level of fishing necessary to meet local, regional, and national needs. The PA is an example of an adaptive management framework whereby the BSAI and GOA groundfish management plans can be amended as new information becomes available on the effects of fishing.

Both the NPFMC and the Agency determined that the PPA represented the best balance between both the risk of adversely impacting the ecosystem and the needs to harvest fish for human purposes. We anticipate significant changes to the regime will follow the implementation of the PA. The management regime will continue to adapt to new information so as to minimize any adverse impacts that affect the sustainability of the fisheries and overall ecosystem health. Until more in known, humans (e.g. fishermen, coastal communities, consumers, and the government) will share the burden of proof (e.g. cost) by operating under a more precautionary management plan.

LCP 31

The ratings of insignificance under the status quo or PPA alternatives are hard to understand given the uncertainties on impacts of the FMPs on the environment. The NPFMC should be more precautionary in their fishing practices due to uncertainties about environmental impacts.

Sample Quote(s)

'The "safety" of the current management regime for all species should be central to the analysis in this document. A management system that is not "safe" cannot be said to have insignificant effects.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

The results of the cumulative effects analyses of the FMPs are relative to the comparative baseline described in detail in Sections 3.5 through 3.10 and summarized in Section 4.4. In order to evaluate impacts on the environment, it is important to first establish a baseline against which the predicted direct, indirect and cumulative effects are compared. The baseline is more than just a snapshot in time but includes actions and events through time that have had an effect on the resource such that it has influenced the condition of the resource today. The significance findings presented in Chapter 4 tier from this comparative baseline and are combined with the reasonably foreseeable future external effects described in Sections 4.5 through 4.9 and are summarized in the cumulative effects tables located in Appendix A. These findings are based on the best available scientific information and although NOAA Fisheries acknowledges there are uncertainties about some impacts to the environment, these assumptions are well defined in Chapter 4. NOAA Fisheries has expanded the direct, indirect and cumulative effects analyses to describe the rationale behind these ratings more clearly in the Final PSEIS (see Sections 4.5 through 4.9).

The purpose of the PSEIS was to evaluate the current management regime and determine ways to improve environmental protection while maintaining a sustainable level of fishing as mandated under the MSA. Through this NEPA process, decision-makers have become further informed on some of the uncertainties regarding environmental impacts. By adopting the PA, NOAA Fisheries and the NPFMC are moving towards a more precautionary approach to fisheries management and are attempting to account for these uncertainties and develop ways to better monitor effects on the environment.

LCP 32

NOAA Fisheries must explain the roles played by NOAA Fisheries, the North Pacific Fishery Management Council and stakeholders in the decision-making and fisheries management process.

Sample Quote(s)

'In evaluating the impacts and efficacy of FMP amendments over time, the Fisheries Service must explain the central role of the North Pacific Fishery Management Council in the decision-making process, including its procedures for making tradeoffs and achieving "balance between competing uses" of the North Pacific marine environment.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

The roles played by the Secretary of Commerce, NOAA Fisheries, the NPFMC and stakeholders in the decision-making and fisheries management process are explained in detail in the 2003 Draft PSEIS, Section 2.4 and Appendix B, Sections B.3.1.1 and B.3.1.2. One comment remarked that NOAA Fisheries must explain how changes in the membership of NPFMC affect fisheries management decisions. New Council members bring new ideas, new perspectives and perhaps new priorities to NPFMC. Regardless of the shifting membership of NPFMC, all its members, and NPFMC as a whole, must comply with the requirements of all applicable federal statues and mandates. Furthermore, NPFMC, through this NEPA process and subsequent FMP amendment process, is setting a course to follow in the future management

of the groundfish fisheries of the North Pacific. If new members bring new priorities or raise new issues that are not addressed in the current FMPs, then NPFMC may, pursuant to the MSA, recommend to the Secretary of the Department of Commerce that the FMPs be amended (after appropriate NEPA analyses) to reflect these new priorities. Major shifts in NPFMC priorities would likely require the preparation of a supplemental EIS and FMPs amended with revised management approach statements and management objectives would be submitted to the Secretary for consideration.

The same comment remarked that "NMFS must explain the role it has apparently placed NPFMC in of not only advisor but also decisionmaker [sic], and must provide some assessment of Council's performance." The role of NPFMC in fisheries management is prescribed by the MSA (16 USC 1852(h)). The role of the Department of Commerce is also prescribed by the MSA (16 USC 1854). Simply stated, the MSA defines the role of NPFMC as recommending FMPs, FMP amendments and regulations to the Secretary of Commerce for approval or disapproval by the Secretary. It is not within the power of NOAA Fisheries to change the MSA-defined role of NPFMC in the fisheries management process and it has not done so. NOAA Fisheries is responsible for executing the day-to-day management of the fisheries as well the enforcement of fisheries management regulations (in conjunction with the U.S. Coast Guard).

As for the assessment of NPFMC's performance, there is no formal process in place (nor is there such a requirement) for NOAA Fisheries to assess NPFMC's performance of its duties. However, the impacts and results obtained from fishery management actions recommended by NPFMC and undertaken by NOAA Fisheries are examined in 2003 Draft SEIS by analyzing the impacts of past and present management actions and policies on the human environment (see generally, Chapter 3, Section 4.5, and Appendices C and D). Future assessments of the impacts and results obtained from fishery management actions recommended by NPFMC and undertaken by NOAA Fisheries will be based on future NEPA analyses. The annual Stock Assessment and Fishery Evaluation reports prepared by NPFMC with the assistance of NOAA Fisheries also provide valuable information as to the health of the fisheries and can also be used to gauge the effectiveness of NPFMC and NOAA Fisheries management actions (as can other scientific reports and papers produced by NPFMC, NOAA Fisheries and academic institutions). Also, the authority given to the Secretary by the MSA, to approve, disapprove or partially approve FMPs or FMP amendments submitted by NPFMC for consideration if such FMPs or FMP amendments are inconsistent with applicable law ensures that NPFMC recommended management measures comply with applicable law . Furthermore, the MSA also provides that the Secretary may prepare an FMP or FMP amendment if NPFMC fails to do so in a timely manner. The MSA also requires the Secretary to review any regulations proposed by NPFMC and the Secretary has the authority to determine such regulations are inconsistent with applicable law and to recommend changes. So, while there is no formal process for NOAA Fisheries to assess NPFMC's performance of its duties, there are NEPA documents prepared for each major action and there are numerous scientific studies undertaken and papers prepared that provide decision-makers and the public with valuable information as to the effectiveness of past and present fisheries management decisions. The performance of both NPFMC and NOAA Fisheries may be judged against the information provided in these documents.

LCP 33

NOAA Fisheries must explain the procedures used by it and NPFMC in their efforts to achieve a "balance between competing uses" of the North Pacific marine environment and should consider alternate forms of NPFMC representation to assess alternate ways to achieve such a balance.

Sample Quote(s)

> 'NOAA Fisheries must explain how the council process works, how the shifting balance of industry representation has affected decisions, implementation of FMP policies, and the planned implementation of policies; and how future tradeoffs will be weighed and made in the process of complying with an FMP policy containing the many competing goals and objectives included in the NPFMC's and NOAA Fisheries' preferred alternative. NOAA Fisheries must explain the role it has apparently placed the Council in of not only advisor but also decision-maker, and must provide some assessment of council's performance.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

The procedures used by NOAA Fisheries and NPFMC to best manage the fisheries are discussed in detail in Appendix B, Sections B.2, B.3 and B.4. Section B.2 describes the management measures and policies enacted by NOAA Fisheries and NPFMC from 1976 until present and also outlines the requirements of federal statutes and mandates with which NPFMC and NOAA Fisheries must comply when considering and/or taking management actions. Section B.3 describes the federal fisheries management process. Section B.4 describes the core fishery management tools and how they are used.

Regarding the request for NOAA Fisheries to consider alternate forms of Council representation, the composition of NPFMC membership, the procedures and requirements for choosing the members and the procedures and requirements for serving as a member are set forth in the MSA (16 USC 1852). The Secretary of Commerce is charged with the responsibility of appointing the members of NPFMC with advice from the Governors of Alaska and Washington. Since the federal action analyzed in the 2003 Draft PSEIS is "the ongoing management of the groundfish fisheries in the EEZ off Alaska as authorized by the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and pursuant to NEPA and other applicable statues and executive orders." (see Section 1.1) and not an analysis of the requirements of the MSA, an analysis of alternative forms of NPFMC representation is beyond the scope of the 2003 Draft PSEIS.

Marine Mammals

Overview

Public comments dealing with marine mammals (MAM) focused on incorporating more recent citations or suggesting a different interpretation of cited information. Comments also stated that the analysis of marine mammals was insufficient due to "lumping" species together for analysis, particularly whale species. Many comments expressed concern for declining Steller sea lion and northern fur seal populations; Steller sea lion closures are not preventing fishing in those designated areas. Comments stated that additional protection measures should be incorporated into the PA.

Protection Measures

MAM 1
Sea lions and other marine life must be protected.

Sample Quote(s)

> 'Our planet's resources, animal, plants, air quality, water quality, etc. are under major attack. Please do all you can do in this protection of stellar sea lions and other marine life!'
>
> *Cynthia Best* *Citizen* *Evergreen,, CO*

Response

NOAA Fisheries is committed to the long-term protection of marine mammal species. As a steward, NOAA Fisheries conserves, protects, and manages living marine resources, including marine mammals, in a way that ensures their continuation as functioning components of marine ecosystems.

MAM 2
Additional management measures to protect marine mammals should be included in the alternatives.

Sample Quote(s)

> 'NMFS must take proactive steps to ensure healthy marine mammal populations and prevent placing species in jeopardy. In order to comply with the law, NMFS must adopt a reliable monitoring system and install protective measures in FMPs.'
>
> *Trustees For Alaska* *Environmental Group* *Anchorage, AK*

Response

Please see the response to the previous concern statement, MAM 1, and as well as the response to concern statement MPA 1. NOAA Fisheries evaluated alternative management policies for the groundfish fisheries, which contained varying levels of protection for marine mammals. Alternative policy statements analyzed by NOAA Fisheries ranged from the considerably more aggressive harvest strategy in Alternative 2 to the extremely precautionary approach in Alternative 4. The PPA accelerates protection measures for marine mammals and is more precautionary than current management. The PPA increases constraints where necessary, formalizes precautionary practices in the FMPs, and initiates scientific review of existing practices as a necessary precursor to the decision of how best to incorporate adequate precaution. Under the current fishery management regime NOAA Fisheries has implemented numerous fishery protection measures for marine mammals including (but not limited to) protection measures for Steller sea lions as described in Appendix F-4, and trawl closures in important Northern fur seal habitat in the Pribilof Islands (published in the Federal Register on October 17, 1994). These protection measures

were included in all the alternatives and have been retained in the PPA. In the PPA, they are augmented with a philosophy of adaptive management that is designed to be responsive through modifications to the fisheries where the best available science indicates that the fisheries are adversely impacting marine mammals.

MAM 3
Declining mammal populations, particularly Steller sea lions and northern fur seals, demonstrate NOAA Fisheries' failure to provide adequate protection.

Sample Quote(s)

'Protected species habitat conservation: Steller sea lions and northern fur seals illustrate Fisheries Service's failure to provide meaningful habitat protection or to live up to its marine mammal stewardship obligations under the ESA and MMPA.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries supports and conducts dedicated research to understand the factors contributing to the decline of pinniped species such as northern fur seals and Steller sea lions in western Alaska. The continued decline of Steller sea lions in western Alaska has been a topic of an exceptional amount of scientific research and debate as described in NMFS 2001b and NMFS 2001c (see Section 4.3.2 of that biological opinion). There is a great amount of uncertainty surrounding the declines of these species which is confounded by the complexity of the marine ecosystems in which they exist and the current level of understanding of the dynamics of these ecosystems. Increased understanding of these species and systems through dedicated research programs such as those described in Sections 5.1.1 and 5.1.2.9 and in Section 3.6 of NMFS 2001c will increase the ability of NOAA Fisheries to recommend and implement management measures to relieve anthropogenic effects that may be found to be contributing the declines. Despite the absence of unequivocal explanations for the causes of these population declines, NOAA Fisheries has taken protective measures to mitigate potential adverse effects of groundfish fisheries on these populations (see Appendix F-4). As explained in Section 4.0 of Appendix O, NOAA Fisheries is constantly monitoring new information and research developments on Steller sea lions and other marine mammals to recommend management measures that provide protection measures for this species. It may be determined that anthropogenic effects do not account for all of the additive mortality resulting in the negative population trends for these species, in fact NOAA Fisheries has asserted as much in previous biological opinions (NMFS 2001c). NOAA Fisheries cannot control population declines resulting from natural environmental variability or other non-anthropogenic factors such as predation or disease, which have all been hypothesized to be contributing to the continued decline of these species (NMFS 2001c).

MAM 4
Declines of the Aleutian sea otter population have been indirectly linked to pollock fishing, which demonstrates that this species must be protected by management measures.

Sample Quote(s)

'I am especially concerned with the Bering Sea ecosystem because of the research I have done of the recent sharp declines of the Aleutian Sea Otters. These declines have been indirectly linked to the overfishing of pollock in the area. Since the sea otter is a keystone species whose decline affects the health of the kelp forest ecosystem, I believe it is imperative that steps be taken now to reduce the negative impacts that groundfish trawl fisheries have in this region.'

Susanna Blunt *Citizen* *Lakewood, CO*

Response

NOAA Fisheries supports management measures that ensure the integrity of the marine ecosystem. However, the best scientific information available to NOAA Fisheries does not indicate a link between pollock fishing and the decline of Aleutian sea otters. The cause, magnitude and geographic extent of the declining sea otter populations are unknown (http://www.absc.usgs.gov/research/sea_otters/popchange.htm, accessed 1/15/2004). Future research may demonstrate the need for restrictive fishing measures to protect this population of sea otters, though available data do not indicate that this would be an effective approach for recovery of this species. The U.S. Fish and Wildlife Service (USFWS) is currently pursuing adding sea otters in this region to the list of threatened species and may recommend conservation measures to slow the rate of population decline and assist in its recovery. NOAA Fisheries will track research developments for insight into potential effects threatening the continued existence of this population and will pursue cooperative management measures with the USFWS as appropriate (see response to MAM 5).

Marine Mammal Impact Analysis

MAM 5

According to a 1994 goal, marine mammal take must approach zero; the analysis of alternatives should determine if they are consistent with this goal.

Sample Quote(s)

> 'Effective April 30, 1994, it became the "immediate goal that the incidental mortality or serious injury of marine mammals occurring in the course of commercial fishing operations be reduced to insignificant levels approaching a zero mortality and serious injury rate within 7 years. The 7-year deadline was reached in 2001. Therefore, today's commercial fisheries must have marine mammal take levels hovering at zero. NMFS must measure whether the alternatives are consistent with this goal.'
>
> *Trustees For Alaska* *Environmental Group* *Anchorage, AK*

Response

Under Section 118 of the Marine Mammal Protection Act (MMPA), NOAA Fisheries must publish, at least annually, a List of Fisheries (LOF) that places all U.S. commercial fisheries into one of three categories based on the level of incidental serious injury and mortality of marine mammals that occurs in each fishery (16 U.S.C. 1387(c)(1)). The categorization of a fishery in the LOF determines whether participants in that fishery may be required to comply with certain provisions of the MMPA, such as registration, observer coverage, and take reduction plan requirements.

The current fishery classification system is based on a two-tiered, stock-specific approach that first addresses the total impacts of all fisheries on each marine mammal stock and then addresses the impacts of individual fisheries on each stock. Tier 1 considers the additive fishery mortality and serious injury for a particular stock, while Tier 2 considers fishery-specific mortality for a particular stock. This approach is based on the rate, in numbers of animals per year, of serious injuries and mortalities due to commercial fishing relative to a stock's Potential Biological Removal (PBR) level. Under the Tier 1 analysis, if the total annual mortality and serious injury across all fisheries that interact with a stock is less than or equal to 10 percent of the PBR level of such a stock, then all fisheries interacting with this stock would be placed in Category III. Otherwise, these fisheries are subject to the next tier to determine their classification. Under the Tier 2 analysis, those fisheries in which annual mortality and serious injury of a stock in a given fishery is greater than or equal to 50 percent of the stock's PBR level are placed in Category I, while those fisheries in which annual mortality and serious injury is greater than 1 percent and less than 50 percent of the stock's PBR level are placed in Category II. Individual fisheries in which annual mortality and serious injury is less than or equal to 1 percent of the PBR level would be placed in Category III. The threshold between Tier 1 and Tier 2 was set at 10 percent of the PBR level based on recommendations that arose from a PBR Workshop held in La Jolla, California in June 1994. The

Workshop Report indicated that if the total annual incidental serious injury and mortality level for a particular stock did not exceed 10 percent of the PBR level, the amount of time necessary for that population to achieve the optimum sustainable population level would only increase by 10 percent. Thus, 10 percent of the PBR level for a particular stock was equated to "biological insignificance." This approach ensures that fisheries are categorized based on their impacts on stocks and allows NOAA Fisheries to focus resources on those fisheries that have more than a negligible impact on marine mammals.

Ultimately, this approach is based on the fact that the MMPA established both a short-term and a long-term goal with respect to take reduction plans for reducing marine mammal mortality and serious injury incidental to commercial fishing operations. MMPA section 118(f)(2) provides: "The immediate goal of a take reduction plan for a strategic stock shall be to reduce, within 6 months of its implementation, the incidental mortality or serious injury of marine mammals incidentally taken in the course of commercial fishing operations to levels less than the potential biological removal established for that stock under section 117. The long-term goal of the plan shall be to reduce, within 5 years of its implementation, the incidental mortality or serious injury of marine mammals incidentally taken in the course of commercial fishing operations to insignificant levels approaching a zero mortality and serious injury rate, taking into account the economics of the fishery, the availability of existing technology, and existing state or regional fishery management plans." NOAA Fisheries established the tier-based fishery classification system with each goal in mind, and specifically, to ensure that fisheries progressively move toward the long-term goal of the MMPA.

In accordance with the MMPA (16 U.S.C. 1387(e)) and 50 CFR 229.6, any vessel owner or operator, or fisher (in the case of non-vessel fisheries), participating in a Category I, II, or III fishery must report all incidental injuries or mortalities of marine mammals that occur during commercial fishing operations to NOAA Fisheries. "Injury" is defined in 50 CFR 229.2 as a wound or other physical harm. In addition, any animal that ingests fishing gear or any animal that is released with fishing gear entangling, trailing, or perforating any part of the body is considered injured, regardless of the absence of any wound or other evidence of an injury, and must be reported.

NOAA Fisheries' Alaska Regional office is currently working with the NPFMC to review the issue of appropriate observer coverage in federal groundfish fisheries. All vessel categories in these fisheries, including those not currently required to carry observers, will be reviewed over the next several years to assess appropriate observer coverage levels for a suite of management and scientific needs.

NOAA Fisheries' Stock Assessment Reports (SARs) provide the best available information on both the level of serious injury and mortality of marine mammals that occurs incidental to commercial fisheries and the potential biological removal (PBR) levels for marine mammal stocks. The information contained in the SARs is reviewed by regional scientific review groups (SRGs), which represent Alaska, the Pacific (including Hawaii), and the U.S. Atlantic, Gulf of Mexico, and the Caribbean. The SRGs were created by the MMPA to review the science that goes into the stock assessment reports and to advise NOAA Fisheries on population status and trends, stock structure, uncertainties in the science, research needs, and other issues.

Currently, groundfish fisheries in the BSAI area and GOA are categorized as Category III fisheries under the MMPA. Currently, serious injury and mortality of marine mammals incidental to Alaska groundfish fisheries occur at levels determined to be insignificant to marine mammal populations and incidental take levels hover around zero for most marine mammal species in most fisheries. In the PSEIS, NOAA Fisheries estimated the take, where take was defined as mortality or serious injury of a marine mammal species, expected to occur for each of the alternatives. The direct/indirect effects analysis in Chapter 4 projects the amount of take (serious injury and mortality) expected to occur under each alternative and can be used to assess the changes in take expected to occur under each example bookend given the assumptions stated in Section 4.1.3.4. Under all of the alternatives, incidental take was not projected to

increase to a significant level for any marine mammal species. Take levels were expected to hover around zero under all of the fishery management alternatives.

MAM 6

Lumping Endangered Species Act (ESA) listed and depleted marine mammal species together with non-listed species for analysis, such as in the "other marine mammal" category, fails to address the effects on each species.

Sample Quote(s)

> 'Federal agencies are required to give special consideration to potential interference with listed mammals and are prohibited from taking action that may cause injury or death to them. NMFS, however, failed to consider such species individually to determine the particular effects of fishing practices on each endangered or depleted mammal. Rather, NMFS grouped these mammals into general categories, titled "other pinnipeds," "other baleen whales" and "other toothed whales."
>
> *Trustees For Alaska* *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries agrees that impacts to endangered species warrant separate analysis and discussion under each alternative FMP bookend and has amended the 2003 Draft PSEIS in response to public comment on this topic. The text under each whale group has now been modified in order to separate the discussion of ESA-listed species from non-listed species. Whales were grouped according to species groups (baleen whales and toothed whales) and within each group; species were discussed together where potential impacts are expected to be similar among species. ESA-listed species that are likely to experience similar effects (including the magnitude and intensity of the effect) are discussed together for each FMP bookend. In cases where there are deviations in the magnitude and intensity of the effects among species, these effects are discussed for individual species. Additional information on the goals of the recovery plans for individual species has also been added to the text in Section 3.8 for each ESA-listed species. If provisions of the FMPs conflict with these goals, they are discussed under that the specific FMP. For the pinniped species group, species are discussed individually within the same section where there impacts apply only to one species but where impacts are similar; they have been discussed together, which is appropriate, especially if there is little interaction with the groundfish fisheries.

MAM 7

The assessment of impacts to marine mammals is insufficient because it lacks an analysis of compliance with legal requirements to protect species, relies on incomplete information, and fails to adequately address uncertainty.

Sample Quote(s)

> 'Another dominant problem with the DPSEIS is the marine mammal analysis. NMFS repeated many of the mistakes made with the bycatch analysis. Namely, NMFS has not fully assessed the potential impacts on marine mammals caused by commercial fishing, it did not assess compliance with legal requirements designed to protect marine mammals, and it failed to analyze numerous information gaps that exist due to its failure to monitor commercial fishing and collect reliable data.'
>
> *Trustees For Alaska* *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries disagrees that the assessment of the effects on marine mammals is insufficient. Significance criteria used to assess and contrast the effects of the FMPs on marine mammals were defined based on the best available information. In cases where there is insufficient information or an effect on a species is unknown, the rationale behind the direct, indirect, or cumulative effects rating is provided. Four indicators were used to analyze potential effects on marine mammal populations and are described in Section 4.1.3.4.

Indirect effects on marine mammals, such as potential changes to the trophic structure of the BSAI and GOA marine ecosystems, are discussed and analyzed in the Ecosystem Sections 4.1.1.6, 4.1.3.6, 4.5.10, 4.6.10, 4.7.10, and 4.8.10. NOAA Fisheries relied on previous agency analyses and expert agency opinion with regard to the effects of the groundfish fisheries on marine mammal populations, especially with regard to the effects on ESA-listed species. These analyses have been incorporated into the PSEIS by reference. Under NEPA, NOAA Fisheries is required to evaluate the potential effects of the proposed action on the affected human environment, which includes marine mammals. Potential adverse effects on marine mammals from the groundfish fisheries are disclosed where the best available information allows for plausible links. To the extent practicable, NOAA Fisheries states whether an effect may be expected to have adverse impacts on an ESA-listed species and states whether or not these impacts may be likely to jeopardize the continued existence of a species or destroy or adversely modify their designated critical habitat. Section 4.11.1 provides an explanation of how each alternative avoids impacts to protected species. NOAA Fisheries has also analyzed the PA with an ESA Section 7 consultation to ensure that it complies with the ESA and MMPA (See Appendix O).

MAM 8
Cumulative effects ratings for Endangered Species Act (ESA) listed and depleted species should be modified or reassessed for the Final PSEIS.

Sample Quote(s)

> 'The large uncertainties and risks associated with the impacts of the groundfish fishery on top predator species, as well as large-scale fisheries removals of known food supplies and intense spatial/temporal concentration of fisheries catches in known foraging habitats of endangered Steller sea lions and depleted northern fur seals -to cite two examples -do not support NMFS's [NOAA Fisheries'] claim that the overall impact of the status quo FMPs is "insignificant" is unjustifiable.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries reassessed the cumulative effects rating of ESA and depleted species and modified the cumulative effects rating for the right whale in response to public comment (see Section 4.9). These whales were decimated by commercial whaling in the past and continue to be present in the Bering Sea in extremely low numbers. Although there has been no documented interaction with the groundfish fisheries, the potential for interaction exists and any mortality from interaction with the groundfish fishery has the potential to have an adverse population level effect. Effects of incidental take and mortality were rated “conditionally significant adverse” for this species as this is conditional on whether additional mortality from any source would affect the recovery of this species.

Conditionally significant ratings for humpback and fin whales is based on past adverse effects of whaling, their continued endangered status, and external sources of mortality. Although humpbacks and fin whales are believed to be recovering, they are occasionally taken in the groundfish fisheries and other fisheries. This rating is conditional on additional mortality affecting the species rate of recovery

Little is known of the actual populations numbers of sei whales or their current trends, but it is known the current population numbers are substantially lower than in historic times. However, since there is very little, if any, overlap with groundfish fisheries, direct effects are insignificant. External sources of mortality that would affect their recovery are poorly understood, but considering their endangered status, cumulative effects of mortality are rated as conditionally significant adverse, conditional on potential additional mortality affecting their recovery rate.

Sperm whale populations in the North Pacific were reduced from commercial whaling similar to other great whales. However, although reliable estimate of numbers are not available, the sperm whale population could be over 100,000 individuals and human-caused mortality for all sources is thought to approach zero (Angliss and Lodge, 2002). The sperm whale is not considered in danger of extinction (Angliss and Lodge 2003). Since the potential of this very low level of mortality is not expected to affect the rate of recovery, cumulative effects are rated as insignificant. Cumulative effect of mortality are considered significant adverse for the Western DPS (or stock) of the Steller sea lion as is prey availability and spatial and temporal effects. The "insignificant" rating in the text was a misprint and has been corrected.

Current Steller Sea Lion Harvest Strategies

MAM 9

Steller sea lion measures are not protecting critical habitat; more fishing occurred in these areas between 2002 and 2003.

Sample Quote(s)

> 'The analyses of fishing patterns in critical habitat demonstrate that the current sea lion "protection" regulations allow fishery catches to rise to levels and occur at times that were found to constitute jeopardy and adverse modification in the 1998 and 2000 Biological Opinions.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries has recently completed a Supplement to the 2001 Biological Opinion that further explains how the overall fishing pattern under the Steller sea lion protection measures avoids jeopardy and adverse modification to Steller sea lion critical habitat (NMFS 2003). See also the discussion in Sections 1.2 and 4.0 of Appendix O which describe how the 2002 fishing pattern under the Steller sea lion protection measures was displaced further offshore in areas that are used disproportionately less frequently by foraging Steller sea lions than the nearshore zones of critical habitat. An analysis of the fishing pattern under the Steller sea lion protection measures in 2002 compared to the pre-Steller sea lion protection measure fishery pattern based on fishery observer data is also provided in the Supplement to the 2001 Biological Opinion (NMFS 2003).

MAM 10

Harvest strategies should leave more fish in the water, disperse fishing effort in time and substantially reduce harvest in Steller sea lion critical habitat.

Sample Quote(s)

> '... to improve ecosystem carrying capacity for sea lions, the National Marine Fisheries Service must leave more prey in the water. The Harvest Control Rule manifestly fails to achieve that objective.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

Please refer to the response to MAM 13, to NOAA Fisheries 2001 Biological Opinion and its supplement (NMFS 2001c; NMFS 2003) and the Supplemental Environmental Impact Statement (SEIS) for the Steller sea lion protection measures (NMFS 2001b) for an evaluation of the effects of global harvest rates and the spatial and temporal measures adopted to reduce the potential for competitive overlap between the groundfish fisheries and Steller sea lions in Steller sea lion critical habitat.

Updating Data and Text

MAM 11

Statements on the western and eastern stocks of Steller sea lions need to be revised; some of them are reversed in the document.

Sample Quote(s)

'Section 4.6.8.2 Eastern Stock SSL Alt. 2 Analysis Comment Re: Page 4.6-343 states "only fisheries in the GOA would be expected to have an effect on eastern stock" SSL. However, it goes on to discuss the re-opening of Aleutian Island pollock fishery as a change of the F rate that would be "significant adverse" to SSL. Recommendation: Avoid "cutting and pasting" information from the western stock SSL analysis into the eastern stock section.'

David Fraser *Industry Advisory Committee* *Port Townsend, WA*

Response

In response to public comment, NOAA Fisheries revised the PSEIS to remove references to the eastern population of Steller sea lions from the text in sections on the western population (Section 3.8.1.). The reference to the western population of Steller sea lion in the discussion of the eastern populations of Steller sea lion in Alternative 2 analysis was also corrected.

MAM 12

The statement that Alternatives 1a and 1b represent the "minimum level of protection necessary to avoid a jeopardy finding" of Steller sea lions should be updated to reflect the 2001 BiOp.

Sample Quote(s)

'Appendix F-4 Section 9.0 Conclusion Comment Re: Page F4-44 states SSL measures under Alt. 1 a & b policy "represent the minimum level of protection necessary to avoid a jeopardy finding". Our understanding is the BiOp 2001 found the recommended management measures were "above the jeopardy bar". How much above the bar was not established in the BiOp. Our belief is that the Council did not "play chicken" with the jeopardy bar. Recommendation: This characterization is subjective, not found in the BiOp, and should be changed. The finding of the BiOp is simply that the current measures "avoid jeopardy and adverse modification". Delete the statement "represent the minimum level of protection necessary to avoid a jeopardy finding".'

David Fraser *Industry Advisory Committee* *Port Townsend, WA*

Response

NOAA Fisheries revised the PSEIS in response to this comment. The reference to a "minimal level of protection necessary to avoid a jeopardy finding" in the conclusion with regards to the 2001 BiOp was deleted from the Steller sea lion quantitative analysis paper presented in Appendix F-4.

MAM 13

Information on the declining population of northern fur seals and the effects of commercial fishing is deficient. The impacts of the overlap of commercial fisheries harvest and fur seal foraging habitat needs to be more thoroughly analyzed in the Final PSEIS.

Sample Quote(s)

'Northern fur seal, Qualitative Analysis Papers, Section F-4 SSL Protection Measures, p. F-4-17
Recommendation: Review and reconsider stating a single cause (i.e., SSL protection measures) for increased pollock fishing effort near the Pribilof Islands. List other potential causes. Change the sentence about expanding the pollock fishery to: "Expanding the pollock fishery from fishing only in the fall to the entire period when the fur seals are breeding potentially increases or decreases the competition for prey species."

Ronald G. Clarke *Industry Advisory Committee* *Juneau, AK*

'NMFS did not adequately assess the effects of fishing practices on the steadily declining northern fur seal population. Indeed, NMFS did not even provide in the DPSEIS all of the information it has available regarding commercial fishery harvest in areas significant to northern fur seals.'

Trustees For Alaska *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries agrees that northern fur seal sections in the 2003 draft PSEIS were confusing and inconsistent in some cases and warranted improvements and clarifications to these sections. The discussions of northern fur seals and the indirect/direct effects analyses have been rewritten to reflect the best available information on northern fur seals and potential impacts from the groundfish fisheries. Please see Sections 3.8.2, 4.5.8, 4.6.8, 4.7.8, 4.8.8, and 4.9.8 for updates and improvements to these sections.

Additional Data or Analysis

MAM 14

There appear to be inconsistencies in information provided on reasons for the decline on northern fur seal populations; reconsider the listed causes for the decline in the Final PSEIS.

Sample Quote(s)

'1. PPA Sec 4.9.8.3 – 4.9.8.9 a. Northern fur seals Recommendation: Change rating to "insignificant."'

Ronald G. Clarke *Industry Advisory Committee* *Juneau, AK*

Response

Please see response to MAM 13 and refer to Section 3.8 of the Final PSEIS for updates to the life history information.

MAM 15

Doubts that nutritional stress is a leading cause of marine mammal population declines must be included in the Final PSEIS.

Response

There is evidence that bottom-up forcing (i.e. nutritional stress resulting from food limitation and/or reduced prey quality) was likely to have been an important contributor to the decline in the 1970's and 1980's along with direct mortality from anthropogenic sources but during the 1990's, top-down forcing (i.e. predation) may have been a primary factor in this period of less steep decline. The text in Section 3.8.1 has been modified to better describe the current schools of thought regarding the causes for the phases of the decline of Steller sea lions.

Analyses of Marine Mammal Takes and Groundfish Interactions

MAM 16
Marine mammal take information should be presented in the PSEIS; the PSEIS does not consider all types of take.

Sample Quote(s)

> 'Additionally, NMFS does not consider all types of take. It assumes for purposes of the DPSEIS that "incidental take refers to animals which are deceased or have injuries that are expected to result in the death of the animal…This is not the full meaning of take. Under the MMPA, take means "harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal...This definition applies to all marine mammals. For endangered mammals, the ESA definition of take offers even broader protection. Among other things, it prohibits harming, pursuing, and wounding.'
>
> *Trustees For Alaska* *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries has provided information on the level of takes incidental to groundfish fisheries in the PSEIS. For this NEPA analysis, take is defined as incidental takes that result in the mortality or serious injury of a marine mammal (see Section 4.1.3.4) as effects were being analyzed at the population level (see Section 4.1.1.4). "Take" of individuals that was not expected to result in population level effects to the species was not considered to be a "significant effect" for this NEPA analysis. NOAA Fisheries publishes Marine Mammal Stock Assessments on an annual or triennial basis according the availability of new information. These stock assessment reports are referenced in the 2003 Draft PSEIS and are the best source for current count and trend information. Marine mammal census and trend information is also discussed for each species in Chapter 3.

MAM 17
Analysis of individual endangered whale species and their interaction with the groundfish fisheries is lacking or insufficient in the 2003 Draft PSEIS.

Sample Quote(s)

> 'NMFS must assess whether the FMP bookends are consistent with recovery and conservation plans. Since each endangered whale is required to have its own recovery plan, a specific analysis of whether or not the FMP bookends meet each recovery plan is necessary. Likewise, NMFS must assess whether each bookend is consistent with conservation plans designed pursuant to the MMPA. NMFS has not even mentioned recovery and conservation plans in the analysis section of the DPSEIS.'
>
> *Trustees For Alaska* *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries disagrees that the analysis of endangered whale species and their interactions with groundfish fisheries is insufficient in the 2003 Draft PSEIS. In addition to the analysis of the indirect/direct effects in Chapter 4, NOAA Fisheries has appended a biological assessment of the effects of the PA on listed species since the 2003 Draft PSEIS which resides in Appendix O.

Citations

MAM 18
Some citations presented in the 2003 Draft PSEIS have been misinterpreted.

Sample Quote(s)

'While there has been some consensus, food was one driver in the decline in the 80's, the text should make the distinction that the NAS (2002) study suggests a food shortage is not apparently inhibiting recovery.'

Ronald G. Clarke *Industry Advisory Committee* *Juneau, AK*

Response

Table 3.5-156 was meant to provide an example of the importance of forage fish in the diet of fur seals. This table has been deleted in the Final PSEIS and the reader is directed to new information of fur seal prey items (Section 3.8). Additional citations have been added from literature published after the completion of the analysis in the 2003 Draft PSEIS and existing citations have been checked and clarified where appropriate according to the comments received.

MAM 19
There is disagreement with information cited in the 2003 Draft PSEIS; the numbers used are unreliable.

Sample Quote(s)

'The figures NMFS is using in the DPSEIS are unreliable. The actual amount of marine mammal mortality and injury is not known. Yet, in the DPSEIS, NMFS does not assess the lack of reliable information and potential effects on marine mammals whose interaction with fisheries may be grossly underreported and under estimated.'

Trustees For Alaska *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries agrees that numbers of marine mammals taken in the groundfish fisheries are potentially under-reported as are all fisheries that are not observed 100 percent. However, the numbers reported are a very good approximation of the actual take in these fisheries since the sample size of observed interactions is very large and these numbers can be used to determine the probable impact of the fisheries on marine mammals.

MAM 20
More recent citations on marine mammals should be used for the analysis in the Final PSEIS such as the 2003 Steller seal lion BiOp.

Sample Quote(s)

'The document states that the latest BiOp was issued October 2001. Recommendation: Update text to refer to the Supplemental to the BiOp released June 2003.'

Ronald G. Clarke *Industry Advisory Committee* *Juneau, AK*

Response

NOAA Fisheries agrees that recent literature and additional data have become available since the 2003 Draft PSEIS analysis was finalized, which used the data up to 2002. Relevant information that sheds new light on the analysis and that has become available since the 2003 Draft PSEIS was released, has been incorporated in the Final PSEIS where appropriate. However, additional annual data that have yet to be analyzed or that do not add substantially to or change the outcome of the analyses presented in the PSEIS are not included. Additional literature includes the 2003 Biological Opinion (NMFS, 2003), which was released after the completion of the 2003 Draft PSEIS, has been cited as the most recent information on Steller sea lions in Section 3.8.1. The following recent citations were also considered and included in the PSEIS.

MAM 20 References

Springer, et al. 2003 - recent information the potential role predation of transient killer whales in the decline of the western populations of Steller sea lions and included in Section 3.8.1.

Loughlin, et al. 2003 - Additional information on Steller sea lion foraging trips and movements has been added in Section 3.8.1.

Matkin, et al. 2003 – population numbers from recent surveys of killer whales within the range of the western populations of Steller sea lion has been increased to 125 to 175 in Section 3.8.1 and 3.8.22.

Past/Present Effects and Comparative Baseline

MAM 21

The past/present effects tables and the comparative baseline for some species should be modified or updated.

Sample Quote(s)

> 'Section 3.8.3, Pacific Walrus. Both Cape Pierce and The Twins are listed as part of the Walrus Sanctuary but are not mentioned among haulout sites listed in the first paragraph on page 3.8-22, nor in the first paragraph of page 3.8-23, under the prohibition of fishing vessels inside 12 miles.'
>
> *Ronald G. Clarke* *Industry Advisory Committee* *Juneau, AK*

Response

The past/present effects tables and comparative baseline summaries are meant to present a brief discussion of the some of key aspects of the life history, ecology and management of each individual species. NOAA Fisheries has tried to include the most relevant information with which the impact of groundfish fisheries could be assessed but this information is not meant to be all-inclusive. Additional information was added to comparative baseline summaries and tables in Section 3.8 of the Final PSEIS for Steller sea lions, northern fur seal, harbor seal, and sea otter. In 1994, an amendment to the MMPA included provisions for the development of cooperative agreements between USFWS, NOAA Fisheries, and Alaska Native organizations to conserve marine mammals and provide for co-management with Alaska Natives. In 1994, an amendment to the MMPA included provisions for the development of cooperative agreements between USFWS, NOAA Fisheries, and Alaska Native organizations to conserve marine mammals and provide for co-management with Alaska Natives. These agreements were added to the baseline summaries where applicable.

MAM 22
Persistent past effects in the cumulative effects analysis should not change across alternatives.

Sample Quote(s)

'Recommendation: It seems like Persistent Past Effects should not change between alternatives. Be consistent and either repeat the same text in each alternative – or save a lot of paper and cite the Persistent Past Effects once in the baseline alternative and simply refer the reader to them under the other alternatives.'

David Fraser *Industry Advisory Committee* *Port Townsend, WA*

Response

NOAA Fisheries agrees the persistent past effects in the cumulative analysis should be similar across all alternatives. The text has been modified to make persistent past effects consistent across all alternatives and is shown in Sections 4.5.8, 4.6.8, 4.7.8, 4.8.8 and 4.9.8. of the Final PSEIS.

MAM 23
The comparative baseline selected for this analysis is inappropriate. The effects of the status quo Fishery Management Plans on marine mammal species such as Steller sea lions and northern fur seals should not be rated "insignificant."

Sample Quote(s)

The large uncertainties that the Fisheries Service says are associated with the impacts of the groundfish fishery on competing top predator species underscore the risks in allowing large-scale fisheries removals of known food supplies in known foraging habitats of protected species in the North Pacific. The documented impacts of the groundfish fisheries on Steller sea lion critical habitat in the 2002 baseline (NMFS 2003a), which the Fisheries Service fails to examine in this draft PSEIS, simply do not support the Fisheries Service's claim that the impact of the status quo FMPs are "insignificant."

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

NOAA disagrees that the baseline selected for this analysis is inappropriate. Please refer to Sections 3.1.1 and 3.10.1 for the rationale behind the baseline. Please see the responses to LCP 12 and 13 for additional information on the baseline.

MAM 24
Relevant information on the effects of fishing on Steller sea lion and northern fur seal physiology, reproductive biology, and foraging ecology is not discussed or disclosed in this analysis.

The Fisheries Service's analysis of fishery impacts on ESA- And MMP A-protected species fails to disclose, discuss or analyze relevant information relating to the effects of fishing on Steller sea lion and northern fur seal physiology, reproductive biology, and foraging ecology, which are energetically expensive and therefore particularly vulnerable to declines in prey availability caused by large-scale trawl fisheries in the North Pacific.

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

Information on Steller sea lion biology and foraging ecology is included Section 3.8.1 and Appendix F-4 of the 2003 Draft PSEIS. Background information on the effects of fisheries on northern fur seals is provided in Section 3.8.2. While NOAA Fisheries does not profess to have included an exhaustive overview of Steller sea lion and northern fur seal physiology, reproductive biology, and foraging ecology, NOAA Fisheries has included information on Steller sea lion and northern fur seal trophic interactions and foraging distributions (to the extent that they are known) and a discussion of the spatial and temporal overlap of the groundfish fisheries with these species such that the potential for competitive overlap among the alternatives could be assessed. See also Section 4.1.3.4, which describes how harvest of marine mammal prey species was analyzed in the PSEIS.

Marine Protected Areas

Overview

Public comments dealing with marine protected areas (MPAs) outlined suggestions for increasing protection measures, expanding geographic scope of designated protection areas, and improving enforcement of "no-take zones" and fishing closures.

MPA 1
Stronger protection measures for marine mammals and their habitat are needed.

Sample Quote(s)

'I think that our laws should be created in a stronger manner to protect the wild creatures and plants living in the Bering Sea. This waterway is an essential habitat for many living creates and like all ecosystems is very delicate. Please take the utmost care in developing this plan and try to come up with alternatives to fisheries.'

Briana Hiller-Hannan *Citizen* *Tucson, AZ*

Response

The PPA accelerates protection measures for marine mammals and habitat and is more precautionary than current management policy. The PPA increases constraints where necessary, formalizes precautionary practices in the FMPs, and initiates scientific review of existing practices as a necessary precursor to the decision of how best to incorporate adequate precaution. Habitat protection measures range from the continuation of existing closures to implementing closures of up to 20 percent of the BSAI and GOA as no-take reserves and MPAs. An Aleutian Islands Special Management Area and rotational closures are also possible under the PPA. A discussion of habitat measures under the PPA are presented in Section 4.9.6 and summarized in Table 4.5-98. The measures in the PPA that are designed to protect habitat, also provide protection for marine mammals and include five different types of management areas including: No Take Marine Reserves, No Steller sea lion Trawling MPA, No Bottom Trawling MPA, No Steller sea lion Hook-and-Line, Pot or Trawl MPA. Measures in the eastern GOA include No Steller sea lion Hook-and-Line, Pot or Trawl and No Trawl MPA. For more specific information on marine mammal protection under the PPA, please refer to Section 4.9.8 of the PSEIS.

MPA 2
NOAA Fisheries should increase protection for endangered and threatened species and enforce legislation dealing with these species.

Sample Quote(s)

'In addition to a stronger management plan than is currently proposed in the 2003 Draft PSEIS, I would urge the establishment of new MPAs to protect biological diversity and restore populations of threatened species. This should be guided by ecological science and not by business (financial) interests. I care about wildlife for it's own sake, but for those who don't, it still makes sense to protect the abundance of the Bering sea in order to enjoy continued fishing opportunities.'

Jennifer Lennon *Environmental Group* *New Windsor, NY*

Response

Several federal statutes mandate NOAA Fisheries to manage, conserve and protect the Nation's marine resources. Each alternative analyzed in the 2003 Draft PSEIS, including the PPA, complies with these statutes, which includes the ESA of 1973. As stewards of the marine environment, NOAA Fisheries is committed to the long-term sustainability of the marine ecosystem and specifically, protected species under the Agencies' jurisdiction including cetaceans and pinnipeds (excluding walruses). By reducing conflicts that involve protected species and committing to the recovery and sustainability of protected species populations, NOAA complies, and in some cases, exceeds the requirements of the ESA and other applicable federal statutes. For further discussion of the ESA and other federal statutes, please refer to Section 4.11.1 and table 4.11-1.

MPA 3

Establish selected areas that prohibit trawling and other fishing techniques in order to allow regeneration of fish stocks and other affected species.

Sample Quote(s)

'Management is important, but sometimes it is better to let Nature adopt its own course by protecting it with a no-entry zone.'

Onno Koelman *Citizen* *San Rafael, CA*

'I would like to see areas of sanctuary made available where marine animals and plant life can be nurtured and unharmed, so that individual species can be protected and environments be re-established to an optimum level, not only for our future but for our children's children's future.'

Jenny Odea *Citizen* *Nashville, TN*

Response

The PPA designates areas where trawling is prohibited. Table 4.5-97 shows that 19.3 percent of the Bering Sea fishable area is closed to bottom trawling under the PPA.1. Figure 4.5-4 shows areas closed to trawling only at various times of the year under the FMP bookend PPA.1, while Figure 4.5-5 depicts just those areas closed to fixed gear only. As shown in Table 4.5-97, approximately 43 percent of the Aleutian Islands is closed to trawling at some point in the year and nearly 46 percent of the fishable area in the GOA to trawling at one time or another during the year as shown on Table 4.5-97 and Figures 4.5-4 and 4.5-5. FMP PPA.2 also illustrates some additional measures to further protect habitat and regeneration of fish stocks including rotational closures and a "band approach" to closure areas. Rotational closures have been suggested as a concept of protecting seafloor habitat while not permanently closing an area to fishing. However for protection of habitat, permanently closed areas are preferred over temporary or rotating closures. Incorporation of a "band-approach" where closures are oriented perpendicular to depth contours from nearshore to deep water would assure protection of diversity of habitat types across a range of geographic areas. The elements of the PPA regarding closure areas are discussed in more detail in Section 4.9.6.

MPA 4

Reinstitute the Bristol Bay Crab Pot Sanctuary in addition to designating and enforcing areas set aside as Habitat Areas of Concern (HAPC), Essential Fish Habitat (EFH), and Marine Protected Areas

Sample Quote(s)

> 'Reinstitution of the Bristol Bay crab pot sanctuary would provide additional protection for habitats essential to red king crab reproductive success (Annstrong et al. 1993). Habitat Areas of Particular Concern (HAPC) should be designated for these historically well-known centers of crab abundance and the former boundaries of the Crab Pot Sanctuary should be reinstated as a trawl exclusion zone. The region within this boundary overlaps the sea lion conservation area (SCA) and is also an important halibut nursery ground as well as the locus of a major Bering Sea cod spawning ground, thus habitat protection provided to red king crab by reinstating the Crab Pot sanctuary would address multiple objectives for reduction of by catch, protection of Essential Fish Habitat, and conservation of an endangered species' critical foraging habitat.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

The PPA has the potential to reduce and avoid impacts to habitat by careful placement of closures, and includes an Aleutian Islands special management area to protect coral and live bottom habitat. (See Section 4.10.6.7). The PPA has the objective of developing a MPA policy in coordination with national and state policies and developing procedures to identify MPAs and no-take marine reserves. In regards to the Crab Pot Sanctuary, about half of this area is currently closed to trawling by the nearshore Bristol Bay and Red King Crab Savings areas. Under the PPA, and through the NPFMC process, the public is invited to submit for consideration management proposals that are intended to achieve the PPA's policy goals and objectives. Expansion of the Crab Pot Sanctuary closure could be considered under a formal MPA procedure.

MPA 5

Protect all types of marine habitat, including corals, in order to maintain biological diversity.

Sample Quote(s)

> 'Please see that all types of marine habitat are protected. Please reduce overall catch levels, conserve biological diversity, ensure integrity of the marine food web, protect marine fish, birds, mammals, and invertebrates (such as crab and corals) and provide ecologically sustainable fishing opportunities across generations.'
>
> *Jay (John) Bowman* *Citizen* *St Paul, MN*

Response

Protection of marine habitat, including corals, is included in the FMP bookend PPA.2. For example, the incorporation of a "band-approach", where closures are oriented perpendicular to depth contours from nearshore to deep water, would assure protection of diversity of habitat types across a range of geographic areas. An objective of the PPA.2 illustration is to develop goals, objectives, and criteria to evaluate the efficacy of MPAs and no-take marine reserves as tools to maintain abundance, diversity, and productivity. The public is encouraged to participate with the NPFMC in developing the MPA process and to consider any management proposals received.

Monitoring and Enforcement

Overview

Public comments regarding monitoring and enforcement (MON), its implementation, and its overall adequacy, as well as other monitoring programs and enforcement measures for groundfish fishery management, are captured in this issue category. Overall, recommendations for stricter supervision, monitoring, and enforcement of commercial fishing activities, bycatch levels, and restrictions on bottom trawling comprise the majority of these comments.

MON 1
Increase reporting requirements, public access to data, and the enforcement of more restrictive fishing regulations

Sample Quote(s)

> 'Please consider the impact that overfishing and the extreme waste of "by-catch". Stricter laws and limits must be imposed to secure the future generations of harvest, and reduce the environmental destruction of the present.'
>
> *James Melnychuk* *Citizen* *Norridge, IL*

Response

It is important to understand that the Alaska groundfish fisheries in the BSAI and GOA are regulated by the federal government under the authority of the MSA and other applicable federal statutes and executive orders, and administered jointly by NPFMC and NOAA Fisheries through a highly developed system of FMPs and amendments. Among many other provisions, the FMPs and amendments have the authority to prohibit, limit, condition, or require the use of specified types and quantities of fishing gear, fishing vessels, or equipment for such vessels, including devices which may be required to facilitate enforcement provisions" (MSA Sections 303(a) and (b), 16 USC 1853(a) and (b)). Please refer to 2003 Draft PSEIS Sections 2.3, 2.4, and 2.5 for a detailed description of the present regulatory and management structure governing the groundfish fisheries. A major purpose of this PSEIS is to evaluate the present regulatory framework and examine alternative approaches to determine what improvements should be made. Alaska groundfish catch statistics and summaries are available to the public and can be accessed online at: http://www.fakr.noaa.gov/sustainablefisheries/catchstats.htm. These data include weekly regional and PSC reports, vessel-specific bycatch rates, product reports, and annual catch reports for the BSAI and GOA.

MON 2
Increase the level of effort, coverage, and data utilization of the observer program

Sample Quote(s)

> 'The draft PSEIS fails to consider outstanding issues in the Observer Program. Allowing fishing companies to negotiate directly with observer companies for observer services creates a potential conflict of interest and reduces NMFS's management controls over observer companies' performance (67 FR 58452). Observer providers are under pressure to provide observers who meet their clients needs rather to focus on data quality assurance (67 FR 58452).'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

The 2003 Draft PSEIS Section 2.5.2 and Appendix F-10, Observer Program, address these topics. The range of alternatives presented in Section 2.6 includes various options for increasing or modifying observer coverage, and these are discussed further in Appendix F-10. NOAA Fisheries is considering options for restructuring the Observer Program in various ways. Plans for modifying the Observer Program in the future will be commensurate with the fisheries management policy alternative selected for implementation.

MON 3
Enact and enforce international treaties that govern fisheries regulations.

Sample Quote(s)

> 'We are concerned about laxity in enforcement of international protection of our oceans. We support legislation and increased international agreements and enforcement to maintain sustainable fishing.'
>
> *Karen Backinoff &Ste Backinoff* *Citizen* *Kilauea, HI*

Response

The establishment of international agreements is outside the jurisdiction of the NPFMC and NOAA Fisheries and beyond the scope of this PSEIS. However, the enforcement of international agreements as they pertain to U.S. waters off Alaska is inherent in the entire alternative fisheries management policy frameworks discussed in this PSEIS. Both the NPFMC and NOAA Fisheries have traditionally consulted with the Department of State on matters pertaining to international fisheries and will continue to do so.

MON 4
Consider new programs to improve fishery conservation measures.

> 'Limited access quota programs are no panacea for conservation, and additional programs should be examined as tools to end the race for fish, reduce the waste and bycatch associated with derby fisheries, improve compliance with other conservation regulations, improve vessel and crew safety, increase the value of the catch, and protect dependent fishing communities from pre-emption or consolidation of fishery
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

The 2003 Draft PSEIS Section 2.5.1, Management Tools, discusses fishery conservation measures presently in effect, and the range of alternatives examined in Section 2.6 encompass a variety of measures to improve or add to these measures. Detailed plans for the development of additional programs, if any, would be commensurate with the fisheries management alternative selected for implementation.

Research

Overview

Few comments specifically addressed research needs (RES) and/or priorities to be considered and adopted in the Final PSEIS. Of the comments that did address research concerns, two main topics can be summarized as: 1) A need for research focusing on alternative fishing methods to significantly decrease and/or eliminate bycatch and protect habitat; and 2) Agency support for ongoing scientific studies to determine the extent to which habitat destruction occurs from different fishing practices and the establishment of protected areas based on the results of these findings.

RES 1
The Alaska groundfish fisheries should be managed with the best available science.

Scientific research should guide fishery management decisions.

Sample Quote(s)

'Help protect our oceans and ocean habitat by using the best available scientific research to implement a solution.'

Ronald Holland *Citizen* *New York, NY*

Response

NOAA Fisheries agrees that the fisheries should be managed in accordance with best available science. This is also a mandate of the MSA. NPFMC is guided in all its fishery management recommendations by the advice of its Scientific and Statistical Committee (SSC), which is made up of government and academic scientists of diverse disciplines. Additionally, all fishery management decisions are made with the benefit of a rigorous scientific analysis of the environmental impacts of the decision.

RES 2
It is important to provide funding and incentives for scientific research.

NOAA Fisheries should increase cooperation between university and government agencies for furthering important fisheries research.

Sample Quote(s)

'Create incentives for scientific research in the field'

Tracy Baving *Citizen* *Cape Town, NA*

Response

NOAA Fisheries agrees that funding and collaboration are important considerations in furthering the scientific research required for managing the Alaska groundfish fisheries. NOAA Fisheries currently partners with many research agencies (government, academic, and private) for projects applicable to the Alaska groundfish fisheries.

RES 3
Bycatch reduction and habitat protection should be research priorities.

Understanding the patterns of fishery bycatch and benthic habitat-fishery interactions, and developing alternative fishing methods, are all important foci of research.

Sample Quote(s)

'Another step must be taken for research that will find alternatives for fisheries that will still enable them to catch the proper amount of fish, while eliminating the bycatch and waste.'

Shane Thomas *Citizen* *Ames, IA*

Response

NOAA Fisheries agrees to the importance of research into bycatch and habitat issues. Chapter 5 of the 2003 Draft PSEIS includes a list of current research initiatives that address bycatch and habitat concerns, as well as identifying various research needs in these areas.

RES 4
NOAA Fisheries does not indicate how research programs will be implemented or funded. Simply encouraging research programs will not ensure that programs will materialize.

'NMFS does not indicate how research programs will be encouraged. Further, simply encouraging research programs will not ensure that such programs materialize. This is not a concrete management tool that will address the requirements of the MSA.'

Trustees For Alaska *Environmental Group* *Anchorage, AK*

'There should be ongoing scientific study of the ecosystems involved and of how fisheries can function in a productive and sustainable manner, with a long-term rather than a short-term vision. This may involve the establishment of protected areas to allow for the regeneration of stocks and for the maintenance of biological diversity.'

Veronique Foti *Citizen* *State College, PA*

'Longer-term ecosystem monitoring is needed to collect baseline information, but existing research information from a variety of ongoing research initiatives is not being fully utilized at present. The Oceans Alternative Research Plan emphasizes better coordination of scientific; research and better use of existing data, with a focus on interdisciplinary research integrating already available (and extensive) data from ongoing research at all levels of the federal, state and university institutions.'

Marc Spalding *Environmental Group* *Anchorage, AK*

Response

NOAA Fisheries agrees to the importance of long-term ecosystem research. Various ecosystem research initiatives are currently underway, as detailed in Section 5.5.1 of the document. Additional research needs are also specified in that chapter. The Agency acknowledges that without additional funding, the Agency's ability to pursue the research identified in Chapter 5 is limited. However, NOAA Fisheries is optimistic that with public and Congressional support, future fishery impact studies will provide greater knowledge about the effects of fishing on the marine ecosystem. With that improved knowledge, future fisheries management will have the ability to address the public's concerns about the sustainability of the Alaska groundfish fisheries and a healthy marine ecosystem.

Seabirds

Overview

Public comments on the seabirds (SEA) ranged from support of the PPA to calls for more specific and stringent protection measures for seabirds. Some comments requested clarification of how the PPA differed from the other alternatives with regard to specific seabird protection measures. Some reviewers requested the inclusion of the most recent data and research reports in order to illustrate particular conclusions regarding seabird/fishery interactions. Other comments challenged the degree of ecosystem-level analyses on seabird foraging ecology, the appropriateness of species groupings, and the conclusions on impact significance.

SEA 1

The Preliminary Preferred Alternative (PPA) provides for an ongoing commitment to protecting seabirds and includes recently developed measures that are proving effective at substantially reducing incidental take of seabirds, especially albatrosses and fulmars.

Sample Quote(s)

> 'The North Pacific Longline Association (NPLA) supports the PPA objectives for protecting seabirds, as well as the measures implementing those objectives. We do not believe that different or additional objectives or measures are necessary. We recommend adoption of the PPA as the agency's final action.'
>
> *Thorn Smith* *Commercial Fishing* *Seattle, WA*

Response

One policy goal of the PPA is to "Avoid Impacts to Seabirds and Marine Mammals". The PPA has one seabird-specific management objective under that goal, "Continue to cooperate with USFWS to protect ESA-listed species." It also contains policy goals and objectives to preserve the food web and integrate ecosystem concerns into fishery management decisions. These policy goals have broad implications that could be used to protect seabird food supplies and to incorporate seabird feeding ecology into fishery management.

SEA 2

Editorial suggestions were made for improving or clarifying tables, figures, and text for seabird sections.

Sample Quote(s)

> 'Page 4.1-9, Section 4.1.1.3 Seabirds. The parenthetical for Item 2 is not clear. Is it intended to mean that the Laysan and black-footed Albatross and shearwaters do not breed in Alaska and don't feed on or near the surface of the water, or that they do not breed in Alaska, but feed on or near the surface of the water?'
>
> *Judith Leckrone Lee* *Federal Agency* *Seattle, WA*

Response

The text, tables, and figures have been edited for clarity and accuracy in response to specific editorial comments. Please refer to Appendix A for tables and figures.

SEA 3

Ratings of "insignificant impacts" on seabirds are invalid either because the rating criteria are based on a depleted baseline or because they are not supported by the information presented for the status quo or the Preliminary Preferred Alternative (PPA). Uncertainty about impacts does not mean they are insignificant.

Sample Quote(s)

> 'Acknowledged uncertainties regarding the effects of fishing on marine mammals and birds, combined with large-scale fisheries removals of known food supplies and spatial/temporal concentration of catches in known foraging habitats of at-risk species, do not support claims of "insignificance" for the status quo FMPs or the PPA.'
>
> *Marc Spalding* *Environmental Group* *Anchorage, AK*

Response

These comments took issue with findings of "insignificant" impacts on seabirds for the status quo and PPA bookends and claim that the 2003 Draft PSEIS ignores important effects of the fisheries on seabirds, especially concerning seabird foraging ecology. NOAA Fisheries acknowledges that many of the potential interactions of fisheries with the foraging ecology of seabird species are poorly known but disagrees that these effects were not considered in the analysis of Alternatives. The potential effects of the fisheries on the availability of food for each species or species group were considered for all FMP bookends and in the cumulative effects analysis. Section 5.1.2.8 describes the information gaps and most pressing research needs relating to seabird/fishery interactions. The USFWS is responsible for the conservation and management of seabirds and conducts research on seabird population trends and reproductive success. Another federal agency, the U.S. Geological Survey-Biological Resources Division (USGS-BRD), also conducts research on seabird population dynamics and feeding ecology. NOAA Fisheries will need to cooperate with these agencies as well as academic institutions to make progress on seabird/fishery interaction research. This type of information is necessary for developing a more integrated ecosystem management program, as proposed in the PPA.

The baseline condition for each seabird species is described in Section 3.7 and includes the most recent population status and trend information, if known, as provided by the USFWS and literature review. The analyses of effects and significance ratings in Sections 4.5 through 4.9 begin with the baseline condition for each species, including past effects of the fisheries and other external factors, and discuss the potential population-level effects of the FMP bookends on each species or species group. Except for quantitative data on the incidental take of seabirds in different fishing gear, the analyses are qualitative in nature and represent professional judgments on the likelihood of different outcomes. The 2003 Draft PSEIS identified conservation concerns for some seabird species, especially the albatrosses, ESA-listed eiders, and species of management concern, that were independent of the BSAI/GOA groundfish fishery and that were likely to continue regardless of which policy alternative is selected.

In response to previous comments, the analyses represent a concerted attempt to incorporate all the relevant information into the ratings of significance and to estimate the complex effects of diverse fishery management decisions. Significance ratings were based on the likelihood that alternative fishing regimes would cause population-level effects on given seabird species. NOAA Fisheries acknowledges that there is necessarily a large degree of uncertainty involved in future predictions and that reasonable people may disagree on the likelihood of particular outcomes. The sources of uncertainty regarding seabird population-level effects and the challenge of resource management in the face of continuing uncertainty are discussed in the Seabird Protection Measures QA Paper, Appendix F-6.

SEA 4

It is not clear what specific measures the Preliminary Preferred Alternative (PPA) proposes with regard to seabirds. Similarities and differences between Fishery Management Plans and the Preliminary Preferred Alternative should be clarified for seabird policy statements.

Sample Quote(s)

> 'It is not clear what the PPA proposes with regard to seabirds; this needs to be clarified before the PPA can be evaluated usefully by the public. In various sections of the document, the PPA's proposal for seabirds ranges from reducing their protection below current level, to a major enhancement of research on seabird populations.'
>
> *Stanley E., Craig S. Senner, Harrison* *Environmental Group* *Anchorage, AK*

Response

Each alternative policy includes a description of its Management Approach followed by broad policy goals and more specific policy objectives. The seabird-specific policy goal of each alternative, including the PPA, is to, "Avoid Impacts to Seabirds and Marine Mammals". However, there is a substantial difference between the objectives of the alternative policies.

The PPA contains one policy objective that is specific to protecting seabirds, "Continue to cooperate with USFWS to protect ESA-listed species". The status quo FMP, Alternative 1(b), has a broader policy objective to protect seabirds, "Continue to cooperate with USFWS to protect ESA-listed species and other seabird species". The Alternative 2 policy objective is similar to the PPA in that it only commits to protecting ESA-listed species, "Maintain current protection measures to protect ESA-listed seabird species". Alternative 3 contains two seabird-specific policy objectives: 1) "Continue to cooperate with USFWS to protect ESA-listed species and other seabird species", and 2) "Initiate a joint research program with USFWS to evaluate current population estimates for all seabird species that interact with the groundfish fisheries". Alternative 4 also has two seabird-specific policy objectives: 1) "Set protection measures immediately for all seabird species and cooperate with USFWS to develop fishing methods that reduce incidental takes to levels approaching zero for all threatened or endangered species and for USFWS's list of species of management concern", and 2) "Initiate a joint research program with USFWS to evaluate current population estimates for all seabird species that interact with the groundfish fisheries and modify protection measures based on research findings." The alternative policies also contain several goals and objectives that would have indirect effects on seabirds, such as the ban on directed forage fish fisheries (included in the PPA) and other ecosystem considerations. These issues are discussed in Appendix F-6.

NPFMC could adopt a range of specific management measures in order to implement the policy objectives. Although selection of a PA would only commit NPFMC to a policy statement, NPFMC has defined specific management measures in the illustrative FMP bookends as examples of the management direction it would take under those policies. For the PPA, there is a discrepancy between the policy objective of committing to protect only ESA-listed species and the illustrative management measures described for PPA.2, to "Cooperate with USFWS to develop scientifically-based fishing methods that reduce incidental take for all seabird species". The bookend language is similar to the status quo practice of developing and implementing protection measures that are intended to protect endangered species but actually provide substantial protection for other species as well. For example, the development and recent adoption of new seabird deterrent measures for longliners was motivated primarily to reduce the risk of incidental take of short-tailed albatross but NPFMC and fishing industry also recognized that it would result in substantial reductions in the take of other seabirds, including other albatrosses and fulmars. Similar concerns for potential incidental take of short-tailed albatross in collisions with trawl gear may lead to changes in fishing gear or techniques that reduce incidental take of other species in trawls. The NPFMC will likely address the difference between the intent of its management practice, as expressed in the illustrative FMP bookend objectives, and the PPA policy objective when deciding on the PA.

SEA 5

Some of the species groupings are inappropriate and the impact analyses for these groupings are invalid because the constituent species have different life history and behavioral characteristics that make their responses to commercial fishing unique.

Sample Quote(s)

'The combined analysis of impacts on large, arbitrary groups of seabirds is meaningless: "Other piscivorous species (most alcids, gulls, and cormorants)" have almost nothing in common, other than a superficial similarity in diet. They are not any sort of ecological unit. Yet conclusions are drawn as if all piscivorous birds are somehow interchangeable. (pgs 4.10-13 and 4.10-46) This is completely inappropriate.'

Stanley E., Craig S. Senner, Harrison *Environmental Group* *Anchorage, AK*

Response

Section 3.7 describes, to the extent that they are currently known, the life history characteristics, ecological requirements, and past interactions with fisheries and other anthropogenic factors for each individual seabird species. At the end of each species account is the rationale for discussing the species separately or within the context of a species group during the Chapter 4 analyses of the alternatives. Some species were grouped together because they have similar legal or regulatory status while others are based on similar feeding ecology and type of interaction with the fishery. NOAA Fisheries acknowledges that there are a number of reasonable ways to group species for discussion of fishery effects. Within the species group analyses, types of effects that are common to all or most species in the group are discussed in general followed by species-specific effects or conservation concerns if they could be determined. This format allowed for discussion of common issues with a minimum of repetition but retained the opportunity to discuss individual species as needed. In some cases, conclusions of significance differed for species within a group. These species-specific conclusions were described in both the text and summary tables. Inclusion of a species within a species group did not mean that its unique characteristics or ecological connections were ignored in the analysis. However, in most cases it was impossible to make distinctions between species in a group based on the limited amount of fishery interaction data available and the dynamic nature of the fisheries under the different illustrative bookends.

In response to public comments on the 2003 Draft PSEIS, NOAA Fisheries has separated the analysis of effects on sooty and short-tailed shearwaters from Laysan and black-footed albatross. Effects on shearwaters are discussed under a separate heading in the Final PSEIS. The reference to shearwaters being discussed in conjunction with other “piscivorous” species was inadvertent and was corrected.

SEA 6

Impact analyses on seabirds neglect potential ecosystem-effects of fisheries on seabird prey availability.

Sample Quote(s)

'The analysis of past and present effects of fisheries on seabirds and eiders neglects the potential ecosystem effects of fisheries on seabird prey availability. It is not acceptable to assume that an unknown effect is minimal. The statement included in the Steller's eider should be placed in the relevant cell for every species table. There are no discussions for seabirds that acknowledge the possible effects of fisheries on their prey. This contrasts with material provided for marine mammals. These considerations are equally important for seabirds.'

Stanley E., Craig S. Senner, Harrison *Environmental Group* *Anchorage, AK*

Response

The 2003 Draft PSEIS was written and organized to emphasize ecosystem-level effects of the fisheries to the extent that they are known. The introduction to Section 3.7 and the individual species accounts summarize the extensive literature on seabird foraging ecology. Chapter 4 analyses the potential effects of different fishing regimes as described in the FMP bookends. In addition, the Ecosystem sections of the document analyze the past and future potential of the fisheries to affect species at lower trophic levels and conclude that the groundfish fisheries have not been fishing down the food web. NOAA Fisheries acknowledges that there are major gaps in basic research data and in our current level of applied ecological understanding, especially regarding specific effects of different types and intensities of fisheries on the prey fields or foraging success of seabirds. These research needs and data gaps relating to seabirds are described in Section 5.1.2.8. The potential for including information on seabird populations in ecosystem-level fishery management decisions is described in the Seabird Protection Measures QA paper (Appendix F-6).

SEA 7

The tables, figures, and text should be updated with seabird incidental take data from 2002 because this data exemplifies the effectiveness of new longline deterrence techniques that have been widely adopted by the freezer longline fleet and that are proposed in the Preliminary Preferred Alternative.

Sample Quote(s)

> 'Incidental seabird take tables and all text relating to longline incidental take should be revised to include longline take data for 2002. That data will inform the public as to the likely future far better than the old data that reflects takes when no avoidance was being attempted. Longliners have experienced steady improvement since the regulations went into place.'
>
> *Thorn Smith* *Commercial Fishing* *Seattle, WA*

Response

Incidental take data from the 2002 fishing season were analyzed and reported in the SAFE, Ecosystems Considerations for 2004 Report, which was published after the seabird sections of the 2003 Draft PSEIS were written. NOAA Fisheries has decided not to incorporate those data into the Final PSEIS because it would require extensive rewriting of text and tables in all the seabird sections but would not change any of the conclusions of significance. The 2002 data support the expected pattern of a substantial reduction in incidental take of surface-feeding seabirds by longliners that was discussed in Chapter 4 of the 2003 Draft PSEIS.

This reduction of incidental take was anticipated to arise from the adoption of new seabird deterrence measures for the longline fleet that were based on a collaborative research program (Melvin et al. 2001). NPFMC adopted these measures in December 2001 and requested NOAA Fisheries to begin the process of enacting regulations that would make these seabird deterrence measures mandatory for all groundfish vessels using hook-and-line gear. The final regulations were published in the Federal Register on January 13, 2004 (69 FR 1930) and will be in effect for the 2004 fishing season. Most of the BSAI freezer longline fleet and many smaller vessels in the GOA began using the new seabird deterrent devices on a voluntary basis during the 2002-fishing season. It should be noted that there are a number of factors that influence the number of birds that are caught in any one-year besides the type of seabird avoidance measures that are used. These include the spatial and temporal distribution of fishing effort, weather, sea state, and previously observed inter-annual variations in overall food availability that appear to affect the intensity with which seabirds attack baited hooks. It may not be possible to ascertain how much different factors may have contributed to the reduced level of take in 2002 and it remains to be seen whether this reduced level of take will continue in the future. However, the 2003 Draft PSEIS concludes that the management practice of using experimental research to develop new seabird protection techniques will result in further reductions in seabird incidental take. This process of cooperative research, involving

academic institutions, agencies, the fishing industry, and other interested parties, is being conducted under the status quo management system and is consistent with the other Alternatives, including the PPA.

There are three issues that arise from an examination of incidental take data with respect to seabird protection measures, especially as they have changed over time. First, efforts to reduce the risk of incidental take of short-tailed albatross on longline gear have helped reduce incidental take for some species, e.g. fulmars and other albatross, but not others, including gulls. Second, some species are taken more often in trawl gear than in longline gear, including shearwaters and alcids. Seabird regulations on the longline fleet do little to reduce overall take of these species. Third, as effective protection measures have been developed for the longline fleet, the proportion of birds taken by longline gear versus trawl gear has fallen substantially. NOAA Fisheries is currently examining the risk of trawl gear to short-tailed albatross and potential mitigation of that risk. This may shift the focus of seabird protection measures under the PPA to the trawl fleet and may yield benefits for other species as well.

The 2002 data are included in the following table along with average annual takes from the 1993-2001 data set for comparison purposes. The entire 1993-2001 data set is presented in Tables 3.7-2 to 3.7-5 in the 2003 Draft PSEIS. Although many species have individual identification codes in the North Pacific Groundfish Observer Program database and observers are trained to distinguish species, including the most commonly taken species of alcids and gulls, incidental take of some species is reported in larger species groups. Unidentified birds are often only partial remains of birds that were caught as gear was being deployed and had been eaten by sand fleas or other scavengers while the lines soaked. Seabird incidental take data are updated on a yearly basis in the SAFE, Ecosystems Considerations Report, and are available on-line at: http://www.fakr.noaa.gov/npfmc/SAFE/SAFE.htm.

Please refer to Table A.1, CAR Attachment A for more information.

SEA 8

Appendix F-6, the Qualitative Analysis (QA) Paper of Seabird Protection Measures, would be more useful for the comparison of alternatives if it included the Preliminary Preferred Alternative (PPA).

Sample Quote(s)

> 'Appendix F-6, Qualitative Analysis Paper of Seabird Protection Measures: This useful appendix was not helpful in sorting out the confusion, since the PPA is missing from it.'
>
> *Stanley E., Craig S. Senner, Harrison* *Environmental Group* *Anchorage, AK*

Response

The Seabird Protection Measures QA paper was written to help NPFMC develop the PPA and was intended to provide an overview of possible fishery management tools that could be used to protect seabirds. Although the PPA is not included in this paper, the conservation issues that it would address and management tools that it would incorporate are all discussed in the QA paper under various alternatives. NOAA Fisheries has decided not to include the PPA in this appendix because: 1) NPFMC may choose to change the language of the PPA or adopt another alternative as its final PA, and 2) NPFMC is expected to choose among the management tools discussed in the QA paper to address seabird protection concerns.

SEA 9

The Preliminary Preferred Alternative (PPA) should include more specific and more stringent measures to protect seabirds than is proposed. Suggestions are made for protective measures that should be included in the PPA.

Sample Quote(s)

> 'At a minimum, we suggest that the PPA commit to the following measures, some of which are actually ongoing or would cost little.1) Commit to management policies consistent with all Federal laws that mandate seabird protection, including not only Endangered Species Act, but also Migratory Bird Treaty Act and Executive Order 13186 of January 10, 2001 ("Responsibilities of Federal Agencies to Protect Migratory Birds). 2) Commit to fixing the problem with observers' reports from trawlers, which has prevented useful estimation of the mean incidental take of seabirds in trawl gear. (page 3.7-10).3) Improve observer training for identification of dead seabirds. In addition, collect documentation of birds that observers cannot identify (including, apparently, all auks)4) Support and cooperate with USFWS on populations, trends, foraging behavior, and food requirements of selected seabird species of concern. It is not necessary to commit to studying all species as proposed in Alt 3.
>
> *Stanley E., Craig S. Senner, Harrison* *Environmental Group* *Anchorage, AK*

Response

The FMP Alternatives are statements of policy goals and objectives but do not include specific regulatory language. Examples of regulatory measures that are consistent with the stated policies are described in the illustrative FMP bookends. NPFMC has broad discretionary power to adopt a range of specific measures within the context of the FMP policy, including new measures that address future conservation concerns or new techniques for addressing existing concerns. One management tool that was requested in comments, the use of "thresholds of mortality" for species other than the short-tailed albatross, is consistent with Alternative 4 but is not included in the illustrative PPA bookends. The potential for using this management tool to address seabird conservation concerns is discussed in the Seabird Protection Measures QA paper, Appendix F-6.

Under the PPA, NOAA Fisheries will pursue several improvements to observer program data collection that were mentioned in the comments, such as improved observer training in seabird identification, changes in the way trawl samples are recorded to improve statistical estimates of seabird incidental take, and the possibility of collecting voucher specimens and/or photographs for later identification. Changes to the seabird data collection program have been limited by funding and/or by competition for the observer's time and attention to other fishery data collection needs.

NOAA Fisheries is also currently cooperating with the USFWS, University of Washington, Washington Sea Grant Program, and the fishing industry to examine the risk of short-tailed albatross colliding with trawl gear and to develop potential mitigation measures. These efforts are similar to earlier work with longline gear and may lead to modifications of trawl gear or fishing techniques that reduce incidental take of other species in the trawl sector as well as reducing risk to short-tailed albatross.

SEA 10

The reported level of incidental take of northern fulmars from all gear types approaches one percent of the population per year and should be considered "significant" for this long-lived species.

Sample Quote(s)

> 'The conclusion of "no significant impact" of incidental take on Northern Fulmars seems superficial. Page 4.5-184 gives for fulmars "a total estimated average take of about 15,300 birds per year from all fisheries. The latest population estimate for [Alaskan] fulmars is about 2 million birds. Mortality from the groundfish fishery is thus equal to about 0.76 percent of the population. This is considered to be insignificant at the overall population level." On the contrary, mortality approaching 1% per year would be a significant fraction of the natural mortality rate for a long-lived seabird. Furthermore, there is concern about a possible population decline in the Northern Fulmar colony on St George Island.'
>
> *Stanley E., Craig S. Senner, Harrison* *Environmental Group* *Anchorage, AK*

Response

The 2003 Draft PSEIS considered a number of variables in the analysis of whether effects of the fisheries were significant or not. Section 3.7 presents historical data on incidental take of fulmars for all sectors of the groundfish fisheries along with the most recent population estimate. Concerns about potential population-level effects of incidental take were described, especially with regard to potential colony-level effects on the Pribilofs. However, the 2003 Draft PSEIS rated the significance of the fisheries on fulmars (as well as other species) based on the projected effects of the alternative policies. Except for Alternative 2, all alternative policies would include enactment of regulations to require the longline fleet to use the new seabird deterrent measures adopted by NPFMC in December 2001. The 2003 Draft PSEIS anticipated a substantial reduction in the incidental take of surface-feeding species once these measures were in widespread use and thus concluded that the projected incidental take of fulmars would be insignificant at the population-level.

Since the seabird sections of the 2003 Draft PSEIS were written, incidental take data from the 2002 season were analyzed and published in the SAFE, Ecosystems Considerations for 2004 Report. Most of the BSAI freezer longline fleet and many smaller vessels in the GOA began using the new seabird deterrent devices on a voluntary basis during the 2002 fishing season. The 2002 data therefore give some indication of the potential effectiveness of the new regulations in reducing take of fulmars and albatross. These data indicate that, in the BSAI longline sector, the incidental take of fulmars decreased by more than ten times in 2002 (estimated 701 birds) compared to the average take of the previous 3 years (estimated 8,100 birds per year in 1999-2001). This reduction took place even though longline effort increased in 2002 (approximately 216 million hooks) compared to the previous 3 years (approximately 192 million hooks per year in 1999-2001). The rate of incidental take for all seabird species on BSAI longlines was 0.018 birds per 1000, hooks set in 2002 compared to an average rate of 0.072 birds per 1000, hooks set in 1999-2001. Incidental take of fulmars in the GOA is much less than in the BSAI but take levels in 2002 (129 birds) were estimated to be less than half the average of the 3 previous years (average 268 birds). The rate of incidental take for all seabird species on GOA longlines was 0.007 birds per 1000, hooks set in 2002 compared to an average rate of 0.023 birds per 1000, hooks set in 1999-2001. As described above in SEA 7, many factors could have contributed to this substantial reduction in take of fulmars in 2002. However, it is very likely that the voluntary adoption of the new deterrence devices by the longline fleet, before they were required under regulation, played a major role in the observed reduction in take of fulmars.

The combined take of fulmars in the BSAI/GOA longline fisheries in 2002 was 830 birds (95% confidence bounds = 606-1057, birds). Incidental take of fulmars in the 2002 BSAI/GOA trawl sector remained within the range of estimates from 1998-2001 and was estimated to be between 3,111 - 6,809 birds. The estimated take in the combined 2002 pot fisheries was18 fulmars (95% confidence bounds = 5-34 birds). Combining the high range of estimated take in the trawl fisheries with the high end of the

95% confidence bounds for estimated take in the longline and pot fisheries yields a "worst-case" estimate of 7900, fulmars taken in the 2002 BSAI/GOA groundfish fisheries. The most recent population estimate for northern fulmars in the BSAI/GOA is 2 million birds. The combined take of the groundfish fisheries therefore represents approximately 0.4 percent of the population. Although this level of take is not considered significant to the overall population (as discussed in Chapter 4.5.7.3), the potential for disproportionate take from the Pribilof Islands colony continues to be a conservation concern and is the focus of continuing USGS-BRD research.

Attachment A

Tables and Figures

Figure A.1 HMM 9 Response
and
Table A.1 SEA 7 Response

Figure A.1- HMM 9. Theoretical range of probable numerical responses of predators to a reduction in prey abundance.

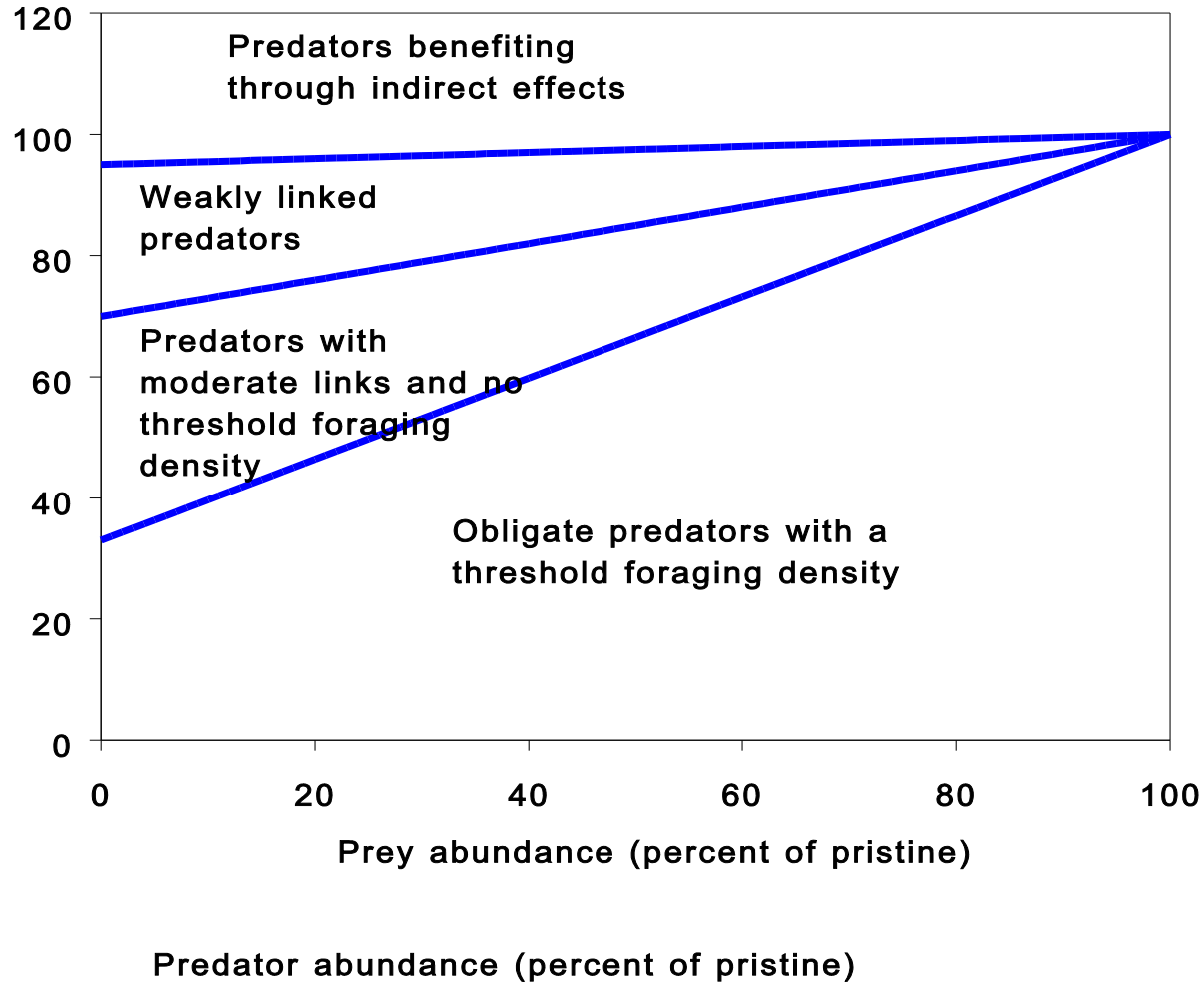

Table A.1. SEA 7. Estimated incidental take of seabirds by species and species groups[a] in the BSAI/GOA groundfish fisheries. Values in Parentheses are 95% Confidence Bounds.

Year	Observed Number Taken[b]		STAL	BFAL	LAAL	NOFU	Gull	SHWR	Unid. Tubenoses	Alcid	Other	Unid. ALB	Unid. Seabird	Total
Bering Sea and Aleutian Islands longline fisheries														
1997-2001	na		2 (0-4)	11 (5-18)	643 (558-728)	10,689 (10,069-11,309)	3,268 (3,028-3,507)	578 (514-643)	156 (100-213)	13 (6-19)	30 (18-43)	7 (2-13)	1,245 (1,091-1,399)	16,642 (15,966-17,318)
2002	877		0	0	48 (19-77)	701 (582-819)	2,523 (2040-3006)	154 (95-213)	17 (5-34)	10 (2-23)	16 (4-32)	5 (1-14)	361 (259-462)	3,835 (3,328-4,342)
Gulf of Alaska longline fisheries														
1997-2001	na		0	156 (86-227)	124 (81-167)	406 (268-544)	147 (75-219)	18 (6-31)	0	1 (0-4)	1 (0-5)	4 (0-10)	13 (1-28)	871 (696-1,047)
2002	51		0	33 (10-57)	0	129 (24-238)	83 (17-177)	0	0	0	0	0	14 (3-30)	259 (114-404)
Combined BSAI/GOA trawl fisheries[c]														
1997-2001	na	Low	0	0	46	274	326	271	2	178	1	0	66	961
		High	0	0	133	5,891	222	1,327	236	340	575	0	787	9,687
2002	69	Low	0	0	1	3,111	4	4	0	1	9	0	59	3,193
		High	0	0	56	6,809	71	595	0	68	124	0	475	9,008
Combined BSAI/GOA pot fisheries														
1997-2001	na		0	0	0	42 (21-64)	4 (0-10)	2 (0-6)	3 (1-6)	2 (0-6)	0	0	8 (0-25)	61 (33-88)
2002	6		0	0	0	18 (5-34)	0	0	0	0	0	0	3 (0-26)	21 (6-38)

Notes: [a]Species or species group codes.
[b]Observed number taken is the total number of seabirds recorded dead in the observed hauls.

Attachment B

Public Comment Index

The following series of tables is designed to allow agencies, organizations, and the public to locate responses to comments within the CAR. Below is a description of each table and instructions on how to use the tables to locate specific responses to comments.

Table B-1. Joint Submission Groups and Members

Five submissions were received jointly from multiple organizations (Joint Submissions). These groups and the individual members are listed in Table B-1. Each organization that signed the submission has been catalogued in the database, however, due to database constraints, only one "name" is used to identify the entire joint submission group. All comments associated with each joint submission are listed under the name of the *First Signatory*.

For example, in Table B-1 the *First Signatory* for Joint Submission 3 is "Marc Spalding." All comments associated with Joint Submission 3 are listed in Table B-2 under "Spalding, Marc." See the Table B-2 discussion below for more information on finding the response to comments.

Table B-2. Public Commenter Names and Concern Statements

Table B-2 lists each commenter *Name* or signatory (for joint submissions), along with their coded comments. Generally, each submission has more than one comment identified, each with a unique comment identification number (*Comment #*). Every *Comment #* has been assigned at least one statement of concern (*SOC*) code (e.g., HMM 2, BYC 6) listed adjacent to the *Comment #* in Table B-2. The organization or public commenter then uses the statement of concern code to locate the response to their comments in the CAR.

Table B-1. Joint Submission Groups and Members

Joint Submission Group 1	**First Signatory: Alice Ruby**
Group Name: Southwest Alaska Municipal Conference	
Aleutian Pribilof Island Community Corporation	
Bristol Bay Economic Development Corp	
Central Bering Sea Fisherman's Association	
Coastal Villages Region Fund	
Norton Sound Economic Development Corporation	
Yukon Delta Fisheries Development Association	
Joint Submission Group 2	**First Signatory: Ronald G. Clarke**
Group Name: Marine Conservation Alliance	
Alaska Groundfish Data Bank	
Alaska Leader Fisheries	
Alaska Pacific Seafoods	
Aleutian Islands Brown Crab Coalition	
Aleutian Pribilof Island Community Development Council	
Alyeska Seafoods	
At-Sea Processors Association	
Bristol Bay Economic Development Corp	
Central Bering Sea Fisherman's Association	
City of Unalaska	
Coastal Villages Region Fund	
Groundfish Forum	
High Seas Catchers Cooperative	
Icicle Seafoods	
Marine Conservation Alliance	
McCarty and Associates	
Mid-Water Trawlers Cooperative	
Mothership Group	
North Pacific Scallop Cooperative	
Norton Sound Economic Development Corporation	
Pacific Seafood Processors Association	
Prowler Fisheries	
Seafood Cold Storage Association	

Joint Submission Group 2 (cont.)	
Southwest Alaska Municipal Conference	
Trident Seafoods Corp	
United Catcher Boats	
Western Alaska Fisheries, Inc	
Yukon Delta Fisheries Development Association	
Joint Submission Group 3	**First Signatory: Marc Spalding**
Alaska Oceans Program	
Center for Biological Diversity	
Earthjustice	
Greenpeace	
National Environmental Trust	
The Ocean Conservancy	
Trustees for Alaska	
Joint Submission Group 4	**First Signatory: Stanley E. Senner**
Audubon Alaska	
Pacific Seabird Group	

Table B-2. Public Commenter Names and Concern Statements

Name	From	Comment #	SOC
,	NA	02579	PAL 13
,	NA	03296	PAL 13
,	NA	14430	ECO 6
,	NA	14430	PAL 15
, Andrea	NA	02696	PAL 16

A

Name	From	Comment #	SOC
Aaron, Allysa	NV	08530	MPA 2
Albers, Andi	CA	02964	PAL 12
Albers, Andi	CA	02964	ECO 6
Anthony, Anita	NY	01881	PAL 11
Aganon, Anne	CA	02789	PAL 13
Avery, Catherene	VA	08157	PAL 13
Anthony, Cheryl	MN	08534	BYC 3
Allan, Claire	AZ	02608	PAL 13
Aksoy, Darlene	TX	02597	PAL 13
Azarva, Gert & Hal	FL	01514	PAL 11
Alexander, Jace	NY	03975	PAL 13
Ayers, Jim	AK	14845	PAL 13
Ann, Julie	NY	00769	PAL 11
Alavi, Kamran	CA	08426	PAL 13
Anastasio-moore, Laura	CA	08541	PAL 13
Adams, Marita	KY	02626	PAL 13
Alicea, Michael	MD	01068	PAL 11
Attar, Mohan	OR	02272	PAL 13
Anderson, Paulette	CA	00644	PAL 11
Anderson, Peter	CA	03524	PAL 13
Audette, Rebecca	MA	08302	PAL 13
Allen, Richard	WA	02884	MAM 1
Andrejewski, Rob	NY	08258	HMM 14
Anthony, Robert	CO	02535	PAL 13
Agosta, Rosemarie	NJ	08214	PAL 12
Appleby, Russell	FL	02189	PAL 12
Appleby, Russell	FL	02189	ECO 1
Ahdoot, Samantha	VA	02688	BYC 4
Anthony, Susan	OH	00918	PAL 11
Allen, Susan	OH	02936	HMM 3
Allen, Susan	OH	02936	ECO 6
Adajian, Thomas	VA	03300	PAL 13
Adamski, Thomas	CT	08517	PAL 13
aguilar, Vanessa	VA	02862	PAL 16
aguilar, Vanessa	VA	02862	ECO 3

A

Name	From	Comment #	SOC
Aureala, Willow	HI	14496	PAL 11

B

Name	From	Comment #	SOC
bliss, abigail	FL	01277	PAL 11
Banasik, Ada H.	IL	01164	PAL 12
Banasik, Ada H.	IL	01164	ECO 1
Barber III, Addison	MI	02482	ECO 6
Barber III, Addison	MI	02482	PAL 12
Bartholomew, Alice	NY	01236	PAL 11
Burch, Alvin R.	AK	14844	PAL 1
Bond, Alyssa	TX	02195	PAL 13
Brzeczek, Amy	CA	02112	PAL 13
Bash, Anthony C.	UT	01609	PAL 11
Becker, Barbara	NY	02776	MAM 1
Burke, Bonnie	CA	00135	PAL 12
Baier, Carol	CA	14090	PAL 11
Barnwell, Carolyn	VT	08448	HMM 3
Barnwell, Carolyn	VT	08448	PAL 15
Barry, Cheryl	ND	14018	PAL 13
Bellovary, Chris	WI	00252	PAL 15
Blackwell, Christopher	NM	01398	HMM 14
Blackwell, Christopher	NM	01398	BYC 3
Brisbane, Cindy	MD	00126	PAL 12
Brockway, Cindy	FL	02929	PAL 16
Best, Cynthia	CO	02783	MAM 1
Brown, Cynthia M.	CA	00218	MPA 1
Bornhoeft, Dana	IL	03344	PAL 13
Burdick, David	OR	03298	PAL 13
Bradford, Debby	CA	00294	PAL 13
Bradford, Debby	CA	00294	ECO 1
Beauchamp, Desiree	PA	08244	PAL 15
Bambach, Dixie	TX	03834	PAL 13
Berry, E	DC	00166	PAL 12
Barnes, Elizabeth	CA	03964	PAL 13
Babb, Evelyn	MN	02236	MPA 1
Babb, Evelyn	MN	02236	PAL 13
Breen, Frank	WA	14838	PAL 1
Breen, Frank	WA	14839	PAL 13
Breen, Frank	WA	14840	ESE 12
Bibber, Heidi	VA	01523	PAL 11
Binnie, James	NA	00234	PAL 11
Baker, James	OH	03928	PAL 13

- James Baker

Table B-2 (continued).

B

Name	From	Comment #	SOC
Balsiger, James W.	AK	13996	PAL 1
Balsiger, James W.	AK	13997	ESE 1
Balsiger, James W.	AK	13998	PAL 1
Balsiger, James W.	AK	13999	ESE 1
Ball, Jane	MN	02271	PAL 13
Bowman, Jane	MN	02869	PAL 12
bulluck, jason	TN	02950	PAL 16
Brune, Jason	AK	13995	PAL 1
Bowman, Jay (John)	MN	14469	PAL 11
Bowman, Jay (John)	MN	14473	PAL 13
Bowman, Jay (John)	MN	14473	MPA 5
Bowman, Jay (John)	MN	14473	HMM 14
BURNS, JEANNE	CA	03056	ECO 6
BURNS, JEANNE	CA	03056	PAL 12
Broussard, Jen	FL	00672	PAL 11
Behrman, Jeri	PA	01206	PAL 12
Behrman, Jeri	PA	01206	ECO 8
Bush, Joan	CA	03409	ECO 6
Bush, Joan	CA	03409	PAL 12
Blaszczak, Joe	AZ	00607	PAL 11
Bowman, John A.	IA	02737	PAL 12
Biro, Juliana	NY	01229	PAL 11
Bonney, Julie	AK	13990	PAL 6
Bonney, Julie	AK	13990	PAL 5
Bonney, Julie	AK	14000	PAL 1
Balster, Kaci	CA	01304	PAL 11
Baglio, Karen	NY	02979	PAL 12
Baglio, Karen	NY	02979	ECO 8
Backinoff, Karen Backinoff &St	HI	01258	MON 3
Blank, Kathleen	VA	00927	PAL 11
Buoncristiani, Kathy	HI	02374	ECO 6
Buoncristiani, Kathy	HI	02374	PAL 12
Barnhart, Kerri	CA	02607	BYC 1
Berg, Kim	MN	00848	PAL 11
Balliet, Kris	AK	15764	EDI 7
Balliet, Kris	AK	15764	LCP 28
Balliet, Kris	AK	15764	LCP 27
Balliet, Kris	AK	15764	LCP 26
Bagot-Parker, Lynda	OR	00124	PAL 11
Barnes, Marcia	AK	03090	ECO 6
Babich, Maria	MD	08201	BYC 1
Bosworth, Mary and Ken	ID	14307	PAL 7
Bogut , Maureen	PA	02301	PAL 13
Brooks, Melanie	WI	03091	PAL 16
Bryan, Melissa	CA	02336	PAL 9

B

Name	From	Comment #	SOC
Bryan, Melissa	CA	02337	ECO 7
Beno, Monica	MI	00353	MPA 1
Bensinger, Mrs. Irene	WA	00873	PAL 11
Baumgardner, Nancy	IN	03029	PAL 12
Beavers, Nancy	TN	08666	PAL 13
Blossom, Nancy Tucker	PA	02556	ECO 3
Bauknight, Nicole	NA	14472	PAL 13
Belle Isle, Paul	MO	01734	PAL 11
Burns, R. Michael	CO	00880	ESE 9
Brownell, Raelynn	FL	08406	BYC 3
Buchanan, Rebecca	NC	01974	PAL 11
Boldt, Roger	IA	00555	PAL 11
Bert, Shawn	CA	00226	PAL 13
Bedrick, Sue	NY	02603	PAL 13
beattie, susan	FL	02159	MON 1
beattie, susan	FL	02161	HAB 18
Bailey-Pruc, Susan	OH	08552	PAL 13
Braun, Susan	AK	14347	PAL 11
Blunt, Susanna	CO	08177	MAM 4
Blunt, Susanna	CO	08177	MAM 2
Blunt, Susanna	CO	08177	PAL 13
Butler, Thomas	CA	02380	PAL 4
Bommarito, Tom	MO	03708	ECO 1
Baving, Tracy	NA	02703	RES 2
Baving, Tracy	NA	02705	PAL 13
Brown, Tristan	MI	03515	PAL 13
Brown, Vera	CA	00696	PAL 11
Brown, Virgina	NM	03926	ECO 1
Brown, Virgina	NM	03926	PAL 15
Breiby, Wendy	MA	03246	PAL 12
Berry, William	FL	01906	BYC 2
Berry, William	FL	01909	PAL 12

C

Name	From	Comment #	SOC
Cutchin, Aaron	CA	14498	PAL 11
Cooke, Alison	NA	00825	MPA 1
Conway, Amy	CA	02668	PAL 12
Caton, Barbara	CA	02233	PAL 12
Caton, Barbara	CA	02233	ECO 8
Chew, Benjamin	PA	02385	ECO 1
Chew, Benjamin	PA	02385	PAL 15
Caley, Bernard	IN	00005	HAB 21

Table B-2 (continued).

C

Name	From	Comment #	SOC
Caley, Bernard	IN	00006	HMM 14
Caley, Bernard	IN	00007	PAL 13
Caley, Bernard	IN	00008	PAL 13
Caley, Bernard	IN	00009	PAL 13
Coila, Bridget	WA	02956	ECO 1
Coila, Bridget	WA	02956	PAL 16
Cotsonis, Carol	TX	03259	PAL 12
Cerqua, Catherine	PA	03383	PAL 13
Cline, Celena	FL	00985	PAL 11
Carrington, Christy	NY	00646	PAL 11
Clements, D. Sean	NY	03214	PAL 11
Cayford, David	CA	02534	PAL 12
Cayford, David	CA	02534	ECO 1
Chmielecki, David A	CT	00957	PAL 11
Clark, Deborah	AZ	03519	PAL 13
Caro, Diana	CA	02533	PAL 13
Carney, Diane	CA	08609	PAL 13
Christensen, Doug	WA	14847	PAL 1
Christensen, Doug	WA	14847	PAL 5
Christensen, Doug	WA	14848	PAL 9
Christensen, Doug	WA	14849	ESE 8
Carter, Dru	MI	00205	MPA 1
Clark, Dylan	GA	03913	HMM 14
Clark, Dylan	GA	03913	ECO 6
Clark, Dylan	GA	03914	ECO 6
Clark, Dylan	GA	03914	PAL 15
Carlstrom, Eva-Lise	WA	08505	PAL 13
Carlstrom, Eva-Lise	WA	08506	HMM 14
Carlstrom, Eva-Lise	WA	08507	HAB 13
Carlstrom, Eva-Lise	WA	08507	HAB 19
Counts, F	NA	00928	PAL 11
Cone, Frances	SC	14343	PAL 11
Cox, G.	AK	03681	EDI 7
Cox, G.	AK	03681	LCP 28
Crouse, PhD, Gerrit	NY	02395	PAL 13
Crouse, PhD, Gerrit	NY	02396	HAB 18
Crouse, PhD, Gerrit	NY	02397	BYC 1
Crouse, PhD, Gerrit	NY	02399	MPA 3
Crouse, PhD, Gerrit	NY	02400	ECO 1
Crouse, PhD, Gerrit	NY	02400	PAL 15
Co, Ivy	NA	01635	PAL 11
Capozzelli, J.	NY	02740	PAL 13
Capozzelli, J.	NY	02741	PAL 12
Capozzelli, J.	NY	02742	PAL 15
Crema, Jacquie	WI	14480	PAL 13

C

Name	From	Comment #	SOC
Conboy, Janet	MO	02731	PAL 16
Conboy, Janet	MO	02731	ECO 1
Chang, Jennifer	NA	00091	PAL 15
Childers, Joe	AK	14026	PAL 1
Cook, Joe	ID	14514	PAL 11
Coonradt, Jolene	IA	08350	PAL 13
Cartisano, Judith	NY	02796	ECO 1
Cartisano, Judith	NY	02796	PAL 13
Casey , Julia K.	OH	03473	PAL 16
Casey , Julia K.	OH	03473	ECO 1
Culverhouse, Karin	CA	00372	PAL 13
Culverhouse, Karin	CA	00373	ECO 1
Crank, Katherine	CA	03780	PAL 13
conroy, kathleen	MA	02810	PAL 16
Couch, Kathryn W.	FL	00284	ECO 7
Couch, Kathryn W.	FL	00284	PAL 15
Crupi, Kevin M	MI	08685	PAL 11
Crupi, Kevin M	MI	08687	PAL 11
Christiansen, Kirsten	NY	08474	PAL 13
Cotter, Larry	NA	14866	ESE 4
Cotter, Larry	NA	14867	AKN 6
Conradi, Laurie	PA	02750	ECO 2
Caulkins, Leighann	VA	01535	PAL 11
Comminos, Linda	IL	02524	ECO 8
Comminos, Linda	IL	02524	PAL 12
Craig, Linden	TN	14433	PAL 11
Cuevas, Luis	CA	08163	PAL 13
Cornett, Margaret	IL	03064	PAL 13
Chomyszak, Maria	GA	00984	PAL 11
Cross, Maria	OR	02838	PAL 16
Cone, Mrs. Frances M.	SC	03110	PAL 16
Cohn-Burke, Nancy	CA	01247	PAL 11
Carroll, Niall	OR	08614	PAL 12
CLAYPOOLE, PAT	OH	01593	PAL 13
Cabral, Phillip	RI	03820	PAL 13
Capozzelli, R.	NY	02758	ECO 1
Capozzelli, R.	NY	02758	PAL 15
Courson, Rachel	IL	01036	PAL 11
Cantlin, Rachel	MO	03885	PAL 13
Claridge, Rhonda	CO	01639	PAL 11
Clarke, Ronald G.	AK	15053	PAL 1
Clarke, Ronald G.	AK	15056	LCP 23
Clarke, Ronald G.	AK	15057	LCP 6
Clarke, Ronald G.	AK	15060	PAL 10
Clarke, Ronald G.	AK	15061	PAL 10

Table B-2 (continued).

C

Name	From	Comment #	SOC
Clarke, Ronald G.	AK	15062	PAL 1
Clarke, Ronald G.	AK	15063	PAL 1
Clarke, Ronald G.	AK	15064	ESE 8
Clarke, Ronald G.	AK	15064	AKN 1
Clarke, Ronald G.	AK	15065	PAL 9
Clarke, Ronald G.	AK	15066	PAL 9
Clarke, Ronald G.	AK	15067	PAL 1
Clarke, Ronald G.	AK	15072	PAL 9
Clarke, Ronald G.	AK	15072	PAL 1
Clarke, Ronald G.	AK	15073	HMM 1
Clarke, Ronald G.	AK	15073	PAL 9
Clarke, Ronald G.	AK	15074	HMM 1
Clarke, Ronald G.	AK	15084	PAL 1
Clarke, Ronald G.	AK	15085	PAL 1
Clarke, Ronald G.	AK	15086	PAL 5
Clarke, Ronald G.	AK	15087	PAL 5
Clarke, Ronald G.	AK	15088	PAL 5
Clarke, Ronald G.	AK	15089	PAL 5
Clarke, Ronald G.	AK	15090	PAL 5
Clarke, Ronald G.	AK	15091	PAL 6
Clarke, Ronald G.	AK	15092	PAL 6
Clarke, Ronald G.	AK	15093	PAL 6
Clarke, Ronald G.	AK	15094	PAL 6
Clarke, Ronald G.	AK	15095	PAL 6
Clarke, Ronald G.	AK	15096	PAL 6
Clarke, Ronald G.	AK	15097	PAL 6
Clarke, Ronald G.	AK	15098	PAL 6
Clarke, Ronald G.	AK	15099	PAL 6
Clarke, Ronald G.	AK	15100	PAL 6
Clarke, Ronald G.	AK	15273	MAM 20
Clarke, Ronald G.	AK	15274	EDI 10
Clarke, Ronald G.	AK	15275	EDI 10
Clarke, Ronald G.	AK	15276	EDI 5
Clarke, Ronald G.	AK	15277	HMM 13
Clarke, Ronald G.	AK	15278	HMM 13
Clarke, Ronald G.	AK	15279	HMM 13
Clarke, Ronald G.	AK	15280	HMM 13
Clarke, Ronald G.	AK	15281	EDI 2
Clarke, Ronald G.	AK	15282	HMM 13
Clarke, Ronald G.	AK	15283	HMM 13
Clarke, Ronald G.	AK	15284	HMM 13
Clarke, Ronald G.	AK	15285	EDI 2
Clarke, Ronald G.	AK	15286	EDI 2
Clarke, Ronald G.	AK	15287	EDI 2
Clarke, Ronald G.	AK	15288	EDI 2

C

Name	From	Comment #	SOC
Clarke, Ronald G.	AK	15289	HMM 13
Clarke, Ronald G.	AK	15290	EDI 3
Clarke, Ronald G.	AK	15291	EDI 3
Clarke, Ronald G.	AK	15292	EDI 10
Clarke, Ronald G.	AK	15293	SEA 7
Clarke, Ronald G.	AK	15294	SEA 2
Clarke, Ronald G.	AK	15295	SEA 4
Clarke, Ronald G.	AK	15296	MAM 14
Clarke, Ronald G.	AK	15297	MAM 8
Clarke, Ronald G.	AK	15298	MAM 13
Clarke, Ronald G.	AK	15299	MAM 13
Clarke, Ronald G.	AK	15300	MAM 8
Clarke, Ronald G.	AK	15301	MAM 8
Clarke, Ronald G.	AK	15302	MAM 18
Clarke, Ronald G.	AK	15302	MAM 20
Clarke, Ronald G.	AK	15303	MAM 20
Clarke, Ronald G.	AK	15304	MAM 21
Clarke, Ronald G.	AK	15305	EDI 10
Clarke, Ronald G.	AK	15306	MAM 13
Clarke, Ronald G.	AK	15307	MAM 13
Clarke, Ronald G.	AK	15308	MAM 21
Clarke, Ronald G.	AK	15309	MAM 20
Clarke, Ronald G.	AK	15310	MAM 19
Clarke, Ronald G.	AK	15310	MAM 20
Clarke, Ronald G.	AK	15311	MAM 20
Clarke, Ronald G.	AK	15312	MAM 20
Clarke, Ronald G.	AK	15312	MAM 18
Clarke, Ronald G.	AK	15313	MAM 22
Clarke, Ronald G.	AK	15314	MAM 11
Clarke, Ronald G.	AK	15315	MAM 11
Clarke, Ronald G.	AK	15317	MAM 12
Clarke, Ronald G.	AK	15319	HMM 10
Clarke, Ronald G.	AK	15320	HMM 11
Clarke, Ronald G.	AK	15320	ESE 3
Clarke, Ronald G.	AK	15321	HMM 10
Clarke, Ronald G.	AK	15322	HMM 8
Clarke, Ronald G.	AK	15323	HMM 12
Clarke, Ronald G.	AK	15324	HMM 7
Clarke, Ronald G.	AK	15326	HAB 1
Clarke, Ronald G.	AK	15327	HAB 16
Clarke, Ronald G.	AK	15328	HAB 16
Clarke, Ronald G.	AK	15329	LCP 17
Clarke, Ronald G.	AK	15329	HAB 2
Clarke, Ronald G.	AK	15329	HAB 3
Clarke, Ronald G.	AK	15330	HAB 1

Table B-2 (continued).

C

Name	From	Comment #	SOC
Clarke, Ronald G.	AK	15331	LCP 1
Clarke, Ronald G.	AK	15332	HAB 17
Clarke, Ronald G.	AK	15333	LCP 17
Clarke, Ronald G.	AK	15333	LCP 18
Clarke, Ronald G.	AK	15333	HAB 2
Clarke, Ronald G.	AK	15334	HAB 6
Clarke, Ronald G.	AK	15335	HAB 16
Clarke, Ronald G.	AK	15337	HAB 17
Clarke, Ronald G.	AK	15338	HAB 17
Clarke, Ronald G.	AK	15339	HAB 17
Clarke, Ronald G.	AK	15340	HAB 17
Clarke, Ronald G.	AK	15341	HAB 17
Clarke, Ronald G.	AK	15342	HAB 17
Clarke, Ronald G.	AK	15343	HAB 16
Clarke, Ronald G.	AK	15344	HAB 17
Clarke, Ronald G.	AK	15345	HAB 16
Clarke, Ronald G.	AK	15346	HAB 4
Clarke, Ronald G.	AK	15346	HAB 2
Clarke, Ronald G.	AK	15347	HAB 2
Clarke, Ronald G.	AK	15349	HAB 6
Clarke, Ronald G.	AK	15350	HAB 6
Clarke, Ronald G.	AK	15351	HAB 1
Clarke, Ronald G.	AK	15352	HAB 11
Clarke, Ronald G.	AK	15353	HAB 1
Clarke, Ronald G.	AK	15354	HMM 6
Clarke, Ronald G.	AK	15354	HMM 15
Clarke, Ronald G.	AK	15354	HMM 7
Clarke, Ronald G.	AK	15354	RES 4
Clarke, Ronald G.	AK	15720	HAB 3
Clarke, Ronald G.	AK	15721	HAB 3
Clarke, Ronald G.	AK	15723	HAB 3
Clarke, Ronald G.	AK	15724	HAB 11
Clarke, Ronald G.	AK	15725	HAB 3
Clarke, Ronald G.	AK	15726	HAB 3
Clarke, Ronald G.	AK	15727	HAB 1
Clarke, Ronald G.	AK	15728	HAB 22
Clarke, Ronald G.	AK	15729	EDI 10
Clarke, Ronald G.	AK	15730	HAB 17
Clarke, Ronald G.	AK	15731	HAB 23
Clarke, Ronald G.	AK	15732	LCP 24
Clarke, Ronald G.	AK	15732	RES 2
Clarke, Ronald G.	AK	15732	EDI 8
Clarke, Ronald G.	AK	15733	EDI 8
Clarke, Ronald G.	AK	15733	LCP 24
Clarke, Ronald G.	AK	15734	RES 4

C

Name	From	Comment #	SOC
Clarke, Ronald G.	AK	15735	EDI 10
Clarke, Ronald G.	AK	15735	RES 3
Clarke, Ronald G.	AK	15757	HAB 22
Clarke, Ronald G.	AK	15760	HAB 1
Clarke, Ronald G.	AK	15762	HAB 23
Caton, Roy	CA	02239	PAL 12
Caton, Roy	CA	02239	ECO 8
Clark, Ryan	CA	02199	PAL 13
Clark, Ryan	CA	02202	RES 1
Callaghan, Sara	NH	02860	ECO 4
Callaghan, Sara	NH	02860	HMM 14
Crouser, Seth	OH	08176	PAL 12
Crouser, Seth	OH	08176	ECO 6
Canard, Sherry	TX	03948	PAL 13
Carlough, Stacey	NJ	00342	PAL 11
Collins, Stefanie	TX	02156	AKN 1
Chaney, Stephanie	CA	08181	ECO 1
Charnas, Suzy	NM	01344	PAL 11
Chisham, Victoria	NA	08130	PAL 11

D

Name	From	Comment #	SOC
Dollyhigh, Adrienne	NC	00603	PAL 11
Dietzenbach, Amanda	IA	00636	PAL 11
Darcey, Anita M.	CA	01082	PAL 11
Dunbar, B. J.	FL	01561	PAL 11
Deutl, Bekah	MN	03039	PAL 16
DeLeon, Bernard	CT	03813	PAL 13
day, cathleen	TX	01606	PAL 12
day, cathleen	TX	01606	ECO 8
Duke, Chris Duke	WA	03797	MPA 3
Dowdle, Daniel	CA	03895	PAL 13
Dowdle, Daniel	CA	03896	HMM 14
Dowdle, Daniel	CA	03897	HAB 18
Dowdle, Daniel	CA	03898	BYC 2
Dowdle, Daniel	CA	03899	MPA 3
Daehnick, Debbie	CO	02369	PAL 13
Ducey, Dennis	OR	02587	HAB 18
Duplantis, Dienielle	LA	03654	PAL 13
Darovic, Elizabeth	CA	03686	PAL 13
Doineau, Emma	MS	03893	PAL 13
Davies, Heather	WA	02880	PAL 12
Duckwall, James	MI	02235	PAL 13

Table B-2 (continued).

D

Name	From	Comment #	SOC
Delker, Jennifer	UT	01686	PAL 11
Danforth, Joel	CO	08407	ESE 11
Dobbins, John	TX	01869	PAL 13
DeMarco, Juan	VA	14475	LCP 29
DeMarco, Juan	VA	14479	PAL 16
DeMarco, Juan	VA	14479	ECO 2
DeMarco, Juan	VA	14484	PAL 11
Dowling, Kim	CA	01198	PAL 13
DiNunzio, Lisa Ann	NJ	00487	PAL 11
Denison, Lou Anna	CA	01879	PAL 11
Dufoo, Lucrecia	NA	00639	PAL 11
DeAngelis, M. Alice	KY	02801	PAL 16
DeAngelis, M. Alice	KY	02811	HMM 3
DeAngelis, M. Alice	KY	02821	PAL 13
don carlos, maggie	WA	03293	HMM 14
don carlos, maggie	WA	03293	BYC 3
Doppke, Mark	NM	01363	PAL 11
Delibera, Melissa	OH	08659	PAL 11
Drake, Mercy	AZ	02230	PAL 12
DeLeo, Nanci	NY	01546	ECO 1
Dollard, Nancy	IN	08412	HMM 3
Danforth, Nina	MA	00961	PAL 12
Danforth, Nina	MA	00961	ECO 8
Diehl, Norma	VA	02968	MAM 2
D, Pamela	MD	00495	PAL 11
Desai, Parag	KS	00850	ECO 1
dishman, patricia	TN	01697	PAL 11
Daniello, Paul	OR	01399	HMM 14
Daniello, Paul	OR	01399	PAL 15
dahmes, perivoea	MN	00358	MPA 1
Doucet, Rev. B.J.	GA	01442	PAL 11
de Moraes, Roberto	VA	02329	HAB 18
de Moraes, Roberto	VA	02330	ESE 9
de Moraes, Roberto	VA	02330	AKN 1
Dunhill, Sara	TX	00067	PAL 12
Dunstan, Sarah	MO	08160	PAL 13
Domorski, Susan	FL	00789	PAL 11
Dobbelaere, Susan	KS	00991	PAL 11
Dzienius, Susan	CA	03511	PAL 13
Daly, Tina Stonorov	PA	02677	PAL 13
Daly, Tina Stonorov	PA	02680	PAL 11
Daly, Tina Stonorov	PA	02684	PAL 11
Daly, Tina Stonorov	PA	02686	PAL 11
Daly, Tina Stonorov	PA	02687	PAL 11
Daly, Tina Stonorov	PA	02690	PAL 11

D

Name	From	Comment #	SOC
Daly, Tina Stonorov	PA	02691	PAL 11
Daly, Tina Stonorov	PA	02693	PAL 11
Dreher, Tonya	NY	08169	PAL 11

E

Name	From	Comment #	SOC
e., amy	CA	01562	PAL 11
Easterly, Andrea	WA	00271	MPA 1
Escobar, Annette	FL	02595	PAL 13
Elasoff, Bill	NA	08180	PAL 15
Edwards, Carl	WA	03271	PAL 12
Elf, Chief	FL	03131	PAL 16
Elf, Chief	FL	03131	ECO 1
Emerson, Daniel	CA	03452	PAL 15
Estes, Douglas C.	CA	01175	PAL 11
Esteve, Gregory	FL	01135	PAL 11
Eaves, Jade	FL	03801	PAL 15
Eaves, Jade	FL	03801	ECO 1
Ewald, Jen	WI	01263	PAL 7
Ewald, Jen	WI	01263	ECO 1
Emery, Julie	NA	01616	PAL 13
Erickson, Kara	CA	01155	PAL 11
Eaton, Kathleen	DE	02722	PAL 16
Eaton, Kathleen	DE	02722	HMM 14
Eagle, Lisa Yellow	CO	00347	PAL 15
Eagle, Lisa Yellow	CO	00347	ECO 1
Engler, Mark	NA	00917	PAL 11
ELLIOTT, N	CA	02955	PAL 12
ELLIOTT, N	CA	02955	ECO 6
Esmay, Rick	KS	01271	PAL 11
Egerman, Robert	TN	02411	BYC 3
Egerman, Robert	TN	02412	PAL 13
Evans, Stephanie	KS	00919	PAL 11

F

Name	From	Comment #	SOC
Funk, Aaron	NA	02932	HMM 14
foung, alejandro	CA	02962	ECO 6
foung, alejandro	CA	02962	PAL 15
Fitzgerald, Andrea	UT	08204	PAL 11
Fieldman, Anita	WA	03692	PAL 11
Frames, Barbara	NM	08374	PAL 13

Table B-2 (continued).

F

Name	From	Comment #	SOC
Fowler, Beverly	WI	03415	PAL 16
Fowler, Beverly	WI	03415	ECO 8
fong, brian	NA	03430	PAL 16
Freedman, Carol	NJ	02898	ECO 6
Freedman, Carol	NJ	02898	PAL 12
Fischer, Carrie	VT	02829	PAL 16
Fischer, Carrie	VT	02829	HMM 14
Frost, Christopher	NJ	03373	PAL 13
Fabian, Cynthia	AZ	00172	PAL 11
Fabian, Cynthia	AZ	02639	PAL 13
Fraser, David	WA	03558	MAM 20
Fraser, David	WA	03561	MAM 19
Fraser, David	WA	03570	MAM 20
Fraser, David	WA	03579	MAM 22
Fraser, David	WA	03583	MAM 11
Fraser, David	WA	03587	MAM 11
Fraser, David	WA	03595	HMM 11
Fraser, David	WA	03596	MAM 12
Fraser, David	WA	03597	MAM 15
Fraser, David	WA	03598	MAM 15
Fraser, David	WA	03599	MAM 15
Fraser, David	WA	14960	MAM 20
Freed, Dianemarie	PA	02828	PAL 15
Foster, Dorothy	KS	08172	PAL 12
Figueiredo, Eva	NA	01688	PAL 11
Fogarty, Jennifer	NY	00198	ECO 1
Fogarty, Jennifer	NY	00198	PAL 15
F, jules	NA	08173	ECO 1
F, jules	NA	08173	PAL 16
Florence, Juvio	OR	01891	PAL 11
Fuller, Kelly	MI	00591	PAL 11
Fritts, Leah	CA	02423	PAL 12
Freed, Linda	AK	08641	PAL 1
Freed, Linda	AK	08643	ESE 8
Freed, Linda	AK	08644	PAL 1
Freed, Linda	AK	08645	PAL 1
Farr, Lisa	WI	01004	PAL 11
Forster, Lynne	NA	00779	PAL 11
Forrester, Mary	NA	00100	PAL 15
Fieleke, Michael	MA	02489	PAL 13
Flowers, Mr. Bobbie Dee	NY	03494	PAL 13
Freyer, Nancy	TX	03810	PAL 13
Fritz, Nicole	MI	03168	HMM 3
Fogarty, Patricia L.	GA	01653	PAL 13
Fogarty, Patricia L.	GA	01653	ECO 6

F

Name	From	Comment #	SOC
Foran, Priscilla	MI	03312	PAL 13
Furlong, Randy	TX	01150	PAL 11
Furlong, Randy	TX	01150	ECO 8
Foster, Richard	TN	02042	PAL 15
Foster, Richard	TN	02042	HMM 14
Faich, Ron	NM	02394	PAL 13
Froehle, Rosemary	MN	01844	PAL 11
Fierling, S	OR	01115	PAL 11
FISHER, SUSAN	CA	02382	PAL 13
folsom, susan	CA	02599	PAL 13
Foti, Veronique	PA	08212	RES 4
Foti, Veronique	PA	08212	MPA 3
French, Wanda	CA	03501	PAL 14

G

Name	From	Comment #	SOC
Goodell, Adele	VT	01073	PAL 11
Gorozdos, Anne	MD	03245	PAL 13
Greer, Bob	TX	02544	PAL 13
Gallagher, Bobi	OH	02313	PAL 16
Gallagher, Bobi	OH	02313	ECO 3
Gilmore, Cher	CA	01559	PAL 11
Griffin, Cheryl	MD	01307	PAL 11
Gillilan, Cinda	GA	01978	PAL 15
Gillilan, Cinda	GA	01978	BYC 4
Gibson, Connie	NJ	08125	ECO 8
Gibson, Connie	NJ	08125	PAL 12
Gartin, Courtney	CA	01447	PAL 11
Goodlin, David	MD	03116	ESE 9
Geppert, Deborah	VA	03998	PAL 13
Gries, Diana	CA	01021	PAL 13
Gould, Dona	FL	01619	ECO 8
Gould, Dona	FL	01619	PAL 12
Garlit, Donald	MI	08636	PAL 13
Gelder, Donna	WA	00059	PAL 15
Gump, Elizabeth	NC	00627	PAL 11
Grant, Elizabeth	GA	02198	PAL 13
Gibbling, Ellen	NA	00191	PAL 12
Gibbling, Ellen	NA	00191	ECO 8
Gasda, Emily	PA	02614	PAL 13
Gasda, Emily	PA	02615	PAL 13
Gorrell, Emmie	SC	00104	PAL 11
Goitein, Ernest	CA	14488	PAL 11

Table B-2 (continued).

G

Name	From	Comment #	SOC
Gamache, Gary	CT	14039	HMM 16
Gambino, Grace	NJ	02143	PAL 1
Gambino, Grace	NJ	02143	PAL 15
Gilsdorf, Helen	CA	03438	ECO 8
Gilsdorf, Helen	CA	03438	PAL 12
Goldman, Isalene	NY	03486	PAL 12
Goldman, Isalene	NY	03486	ECO 8
goodman, Jason	MA	02886	MAM 2
Greenfield, Jen	MD	08132	PAL 11
Grauer-Gray, Jenna	MA	02871	ECO 6
Grauer-Gray, Jenna	MA	02871	PAL 15
Griffith, Jennifer B.	GA	00240	HMM 14
Griffith, Jennifer B.	GA	00240	PAL 16
Gaulden, Jill	TX	00656	PAL 11
Gallo, John	NY	02339	PAL 12
Green, Jordan	NY	02373	PAL 13
Green, Jordan	NY	02373	ECO 1
Gray, Judy	AR	00068	PAL 15
Ganzer-Wiley, Kimberle	MN	01037	PAL 11
Guckenburg, Klis	FL	08627	PAL 13
Guckenburg, Klis	FL	08628	BYC 3
Guckenburg, Klis	FL	08629	HAB 18
Guckenburg, Klis	FL	08630	MPA 3
Girardeau, M.S., Laura	ID	02294	PAL 13
Gunter, Lisa	CA	01190	PAL 13
Grassgreen, Lori	CO	02467	PAL 13
Gaines, Luke	TX	01627	PAL 11
Gonzalez, Maria	GA	02714	ECO 1
Gonzalez, Maria	GA	02714	PAL 16
Glowka, Marya	FL	03338	PAL 13
Gribble, Matthew	CA	02788	PAL 13
Graubart, Michael	NA	00895	ECO 6
Graubart, Michael	NA	00895	PAL 15
Greek, Milt	OH	01019	ECO 1
Greek, Milt	OH	01019	PAL 15
Gathing, Nancy	WI	00404	PAL 15
Gathing, Nancy	WI	00404	ECO 8
GeigerWooten, Nancy	CO	08223	ECO 8
GeigerWooten, Nancy	CO	08223	PAL 12
Goldberg, Pat	?	02391	ECO 1
Goldberg, Pat	?	02391	PAL 13
Guedes, Ruth De Souza	IL	03096	PAL 16
Gorsline, Sally Marie	NY	00981	PAL 11
Greven, Sonja	NC	00982	ECO 1
Greven, Sonja	NC	00982	PAL 12

G

Name	From	Comment #	SOC
Griswold, Stephanie	TX	02981	PAL 11
Green, Susie	NA	01965	PAL 15
Green, Susie	NA	01965	BYC 4
Guthrie, Taza	AZ	00666	PAL 11
Gardner, Wendy	GA	03074	PAL 16

H

Name	From	Comment #	SOC
Hill, Alexandra	PA	02868	ECO 1
Hill, Alexandra	PA	02868	PAL 12
Hallberg, Angelika von Bargen	NA	01303	PAL 11
Hughes, Angie	WV	02629	ESE 9
Harbeson, Ann	NY	03004	PAL 13
Hull, Ashley	CA	02568	PAL 13
Hull, Ashley	CA	02569	HAB 18
Hanrahan, Barbara	MA	03025	PAL 16
Hui, Becket	AZ	02619	HMM 14
Hooker, betsy	FL	02646	PAL 11
Hebeisen, Brian	MA	08337	PAL 13
Hiller-Hannan, Briana	AZ	01937	MPA 1
Herder, Carl	CA	01326	PAL 11
Hillson, Carol	NY	00976	PAL 13
Hughes, Charis	PA	02855	PAL 16
Hind, David	CA	01907	ECO 8
Hind, David	CA	01907	PAL 15
Harrowe, David	AZ	08692	BYC 2
herron, delana	CO	03729	PAL 13
Henderson, DeWitt	TX	03388	PAL 12
Henderson, DeWitt	TX	03388	ECO 8
Harding, Donna	MO	00971	PAL 11
Hyre, Douglas	NA	14494	PAL 11
Hakala, Edward	AK	14040	BYC 5
Hakala, Edward	AK	14040	MPA 3
Hartt, Ernest	CA	02918	PAL 15
Hillyard, Frances	CA	03782	HAB 18
Hepburn, Frances E.	NY	00905	ECO 1
Hobin, Frank	TX	01103	PAL 11
Harris, Freya	GA	03306	PAL 13
Howatt, Gail	MA	03536	BYC 3
Howatt, Gail	MA	03536	RES 3
Harbin, George and Frances	FL	08440	PAL 13
Holm, Ginny	OR	08542	PAL 13
Hardie, Graeme	NJ	00925	PAL 11

Table B-2 (continued).

H

Name	From	Comment #	SOC
Harris, H. Donald	CA	14371	PAL 11
Horton, Harriet S.	TX	08222	PAL 12
Horton, Harriet S.	TX	08222	ECO 8
Houghton, Jack	CA	03969	PAL 13
Hall, Jack R	NJ	00272	HMM 14
Harris, James	CA	00901	PAL 15
Harris, James	CA	00901	ECO 7
Huntsman, JD	NY	03340	PAL 13
Holtzman, Jed	CA	01242	PAL 11
Heavilin, Jennifer	FL	03381	PAL 13
Heiden, Jessica	IA	01985	PAL 11
Hanser, jessica	NA	08371	PAL 11
Humphreys, John	PA	08668	PAL 13
Humphreys, John	PA	08669	PAL 15
Hartshorne, Joshua	MI	03247	PAL 13
Hardina, Judith	OH	08338	PAL 13
Hinderstein, Karen	NY	02973	HMM 3
Holland, Karsten	IL	00054	PAL 15
Holland, Karsten	IL	00055	PAL 11
Hinds, Kathryn	GA	01278	PAL 11
Herren, Ken	AR	00989	ECO 1
Heyer, Kim	CT	08377	PAL 13
Hilzinger, LaQuita	TX	03085	ECO 8
Hilzinger, LaQuita	TX	03085	ESE 9
Hutchinson, Lindsay L	NJ	00264	ECO 3
Hilsman, Lisa	GA	02242	PAL 13
Hollenbeck, Lori	NY	00583	PAL 11
Hoff, Marilyn	NM	01740	PAL 11
Hull, Markwood	WA	01610	PAL 11
Harte, Mary Ellen	CA	01654	PAL 11
Holleran, Mary K.	PA	02823	ECO 3
Holleran, Mary K.	PA	02823	PAL 16
Hagerty, Marycie	CA	01133	PAL 11
Hughes, MJ	WV	02986	PAL 11
Habeck, Nancy	WI	02824	PAL 16
Hale, Nola	NY	00835	MPA 1
Hamilton, Norma	FL	00002	PAL 13
Hamilton, Norma	FL	02282	PAL 15
Hauser, Patricia	MN	03922	BYC 4
Hauser, Patricia	MN	03922	ECO 8
Hughes, Paula	PA	02718	MAM 1
Harrell, Peter T.	CA	00224	MPA 3
Hollingsworth, Rebecca	CA	00187	ECO 6
Hollingsworth, Rebecca	CA	00187	PAL 15
Herron, Richard L	VA	00896	PAL 15

H

Name	From	Comment #	SOC
Herron, Richard L	VA	00896	ECO 1
Harrington, Rob	WI	02665	ECO 6
Harrington, Rob	WI	02665	PAL 15
Hollweg, Jr., Robert W.	CA	01960	PAL 13
Hollweg, Jr., Robert W.	CA	01960	ECO 2
Holland, Ronald	NY	00357	RES 1
Hartmann, Sarah	CA	01457	PAL 11
Hays, Sarah	TX	03822	PAL 13
Hayne, Shari	NA	03121	PAL 16
Hayne, Shari	NA	03121	ECO 1
Havelak, Sharon	OH	01324	PAL 11
Helland, Stephanie	FL	00698	PAL 11
Hazlett, Stephanie	OH	08352	PAL 13
Hall, Teresa	AL	02555	PAL 13
Harpole, Thane	VA	08144	MPA 3
Harpole, Thane	VA	08145	HAB 19
Harpole, Thane	VA	08145	BYC 2
Harpole, Thane	VA	08146	HMM 14
Haxaire, Thierry	NY	03240	PAL 13
Howell, Tom	SC	00262	MPA 5
Hiemstra, Trina	IN	03713	PAL 13
Handy, Vivienne	FL	03371	PAL 13
Hall, William	CA	01439	PAL 11
Harvey, William	PA	14333	PAL 11

I

Name	From	Comment #	SOC
Iliadis, Helen	NA	08185	ECO 1
iyengar, priyanka	NA	02941	PAL 16

J

Name	From	Comment #	SOC
jimerson, aaron	FL	01293	ECO 8
jimerson, aaron	FL	01293	PAL 12
Jaffe, Adelaide	OH	02334	PAL 9
Johnson, Badger	KY	01840	PAL 11
Johnston, Charlene	MA	02342	PAL 13
Jones, Dick	NY	01780	HAB 18
Jarmain, Dom	NA	03427	PAL 15
Jarmain, Dom	NA	03427	ECO 1
Jackson, Erlene	OR	08444	BYC 5
Javid, Farrokh	CA	03421	MAM 1

Table B-2 (continued).

J

Name	From	Comment #	SOC
Jutzi, Fran	CA	01027	PAL 11
Jonge, Henk De	NA	00884	PAL 15
Jacobs, Jan	WA	08589	ESE 15
Jacobs, Jan	WA	08589	PAL 1
Jacobs, Jan	WA	08590	RES 1
Jacobs, Jan	WA	08590	LCP 25
Jacobs, Jan	WA	08591	LCP 17
Jacobs, Jan	WA	08591	HAB 1
Jacobs, Jan	WA	08592	PAL 1
Joyner, Jerry	FL	02480	PAL 13
Jones, Johnathan	PA	08246	PAL 15
Jackson, Kathleen	CA	03809	ECO 1
Jackson, Kathleen	CA	03809	PAL 16
Jaeger, Koko	CA	01687	PAL 13
Jaeger, Koko	CA	01687	ECO 1
Jones, Leslie	PA	00594	PAL 11
Jensen, Pamela	MN	01047	PAL 11
Junaid, Sak	CA	02290	ECO 8
Junaid, Sak	CA	02290	PAL 12
Johnson, Shelley	AK	03450	LCP 26
Johnson, Shelly	NA	14961	HAB 21
Johnson, Shelly	NA	14962	PAL 11
Jackson, Stephanie	SC	02317	PAL 14
Janssen, Suzanne	IA	01693	PAL 11
Jones, Taimay	CA	03054	PAL 16
Jones, Taimay	CA	03054	ECO 1

K

Name	From	Comment #	SOC
Kilborn, Adam	WA	02274	PAL 13
Kimmel, Adam	NY	02475	PAL 13
Katz, Alissa	HI	00108	PAL 11
Karson, Annabeth	FL	01659	ECO 3
Karson, Annabeth	FL	01659	PAL 15
Kolesar, Anne	PA	08220	PAL 13
Kotlik, Annmarie	PA	03149	ECO 3
Kotlik, Annmarie	PA	03149	PAL 16
Kane, Caitilin	SD	00286	ECO 2
Khambholja, Chantelle	MA	03626	ECO 1
Kalins, David	CA	01106	PAL 11
Kaufman, David	ME	14042	PAL 11
Kilmartin, Debi	MI	08529	PAL 15
Kelly, Denys	NJ	03317	PAL 13

K

Name	From	Comment #	SOC
Kelly, Denys	NJ	03318	ECO 7
Kraft, Diane	NY	00416	ECO 1
Kraft, Diane	NY	00416	PAL 15
Kaplan, Dolly	WA	03405	ECO 2
Kaplan, Dolly	WA	03405	PAL 16
Krausser, Edward	NJ	14380	MON 1
Koplik, Elaine	NY	02141	PAL 15
Koplik, Elaine	NY	02141	ECO 6
kruger, elsa	CA	03440	PAL 16
kruger, elsa	CA	03440	ECO 1
Knazek, Evelyn V.	OH	02931	PAL 16
Knazek, Evelyn V.	OH	02952	PAL 11
Kelty, Frank	AK	14856	PAL 1
Kelty, Frank	AK	14857	ESE 8
Kelty, Frank	AK	14858	HAB 1
Kronk, Gretchen	MI	08470	AKN 4
Kellam, Janet	NY	14301	PAL 11
Kitchell, Jericho	MI	00023	PAL 11
Kasper, Jonathan	WA	02182	HMM 14
Kasper, Jonathan	WA	02182	BYC 4
Kasper, Jonathan	WA	02182	PAL 13
Krein, Joseph	NY	00740	PAL 11
Krein, Joseph	NY	00740	PAL 3
Kotzin, Joseph	CA	14451	PAL 11
Kotzin, Joseph	CA	14455	PAL 11
Keefer, Julie	MI	02327	PAL 13
Kelly, Julie	TX	03633	PAL 11
Kremer-Collins, Karen	CA	00977	PAL 12
Kirby, Kate	WA	02543	ECO 8
Kirby, Kate	WA	02543	PAL 12
Koelker, Katheryne	CA	00301	ECO 2
Kears, Kenneth	AK	14366	BYC 5
kretzer, kimberly	KY	02694	ECO 3
kretzer, kimberly	KY	02694	PAL 16
K., Laura	MN	01014	PAL 11
Khalil, Lisa	NY	02992	PAL 13
Kater, Mark	IL	00433	PAL 12
Kater, Mark	IL	00433	ECO 8
Kabisch, Maryethel	VA	00156	PAL 15
Karvoski, Melanie	PA	02477	PAL 13
Koelman, Onno	CA	01959	MPA 3
Koutsodimos, Rita	NA	00520	PAL 15
Koutsodimos, Rita	NA	00520	ECO 2
Kaplan, Robert B.	WA	01167	PAL 11
Keehn, Ruth	TX	03211	PAL 13

Table B-2 (continued).

K

Name	From	Comment #	SOC
Kube, Sara	PA	03790	PAL 13
Kendall, Sarah	VA	02882	MON 1
Koger, Sue	OR	08549	PAL 13
Kacskos, Suzanne	WA	02830	PAL 15
Kacskos, Suzanne	WA	02830	ECO 6
Kennedy, Virginia F.	TX	00401	PAL 11

L

Name	From	Comment #	SOC
Lerner, M.D., Albert H.	TX	00836	ECO 1
Lerner, M.D., Albert H.	TX	00836	PAL 15
Lamb, Alexandra J	CA	08678	PAL 7
Lamb, Alexandra J	CA	08678	PAL 3
Lamb, Alexandra J	CA	08679	PAL 13
Levi, Audrey	MN	03382	PAL 13
Lynn, Barb	NA	00891	PAL 11
Leaman, Bruce	WA	14837	EDI 3
Liberatore, Carol	PA	03533	ECO 1
Leadbetter, Carrie	MO	08397	PAL 13
Leadbetter, Carrie	MO	08398	HAB 18
Leadbetter, Carrie	MO	08399	BYC 1
Livingston, Curt	MA	14320	MPA 3
Leach, David	NY	03590	PAL 13
lancman, deborah	CA	03380	HMM 14
Lenz, Dennis	NY	08599	PAL 13
Lenz, Dennis	NY	08601	PAL 13
Lenz, Dennis	NY	08602	ECO 7
Lohr, Donna	OK	02989	PAL 13
Lohr, Donna	OK	02989	ECO 8
Lafferty, Donna	IL	14330	PAL 7
Lane, Earl and sue	MO	00689	PAL 11
Lundquist, Elizabeth	MN	00624	PAL 11
Lee, Evelyn	NY	08583	PAL 13
Little Jr., Godfrey	DE	03348	BYC 1
Little Jr., Godfrey	DE	03349	MPA 2
Liberasi, Hari	NY	00841	ECO 6
Liberasi, Hari	NY	00841	PAL 15
Lu, Helen	BC	00099	PAL 15
Lipner, Janet	IL	01747	PAL 11
LaPoint, Jeff	NY	01272	ECO 1
LaPoint, Jeff	NY	01272	PAL 12
Lamance, Jennifer	CA	03443	MAM 1
Lennon, Jennifer	NY	03807	PAL 13

L

Name	From	Comment #	SOC
Lennon, Jennifer	NY	03807	MPA 3
Lennon, Jennifer	NY	03807	MPA 2
Linneman, Jeremy	AK	03480	LCP 26
Linneman, Jeremy	AK	03484	LCP 22
Linneman, Jeremy	CA	03931	EDI 7
Linneman, Jeremy	CA	03931	LCP 26
Linneman, Jeremy	CA	03933	LCP 26
Linneman, Jeremy	CA	14044	LCP 26
Liston, John	AK	00011	LCP 26
Liston, John	AK	00012	PAL 13
Liston, John	AK	00013	RES 1
Liston, John	AK	03485	LCP 26
Liston, John	AK	03487	PAL 13
Liston, John	AK	03487	ECO 8
Liston, John	AK	03488	RES 2
Lopez, Josie	TX	01555	PAL 11
lopez, josie	TX	02017	PAL 11
Lyman, Judy	CA	00633	PAL 11
Lewis, Karen	CO	02768	ECO 8
Lewis, Karen	CO	02768	PAL 16
Lewis, Karen	CO	02768	PAL 12
Lawrence, Kirk	IL	01239	PAL 11
Lambeth, Larry	MO	01870	PAL 13
Little, Larry D.	GA	03923	HAB 18
Leung, Lily	CA	00868	MPA 1
Lupo, Linda	NY	02115	PAL 11
Lester, Lori	SC	03787	PAL 13
Lakota-ryan, Maggie	IL	00853	PAL 11
Learned, Margot Diaz	CA	08247	ECO 1
Ley, Marianna	NY	01791	PAL 11
Low, Marsha	PA	08674	PAL 13
Li, Maryann	DE	08121	ECO 8
Levitt, Michael	CO	03223	PAL 13
Letendre, Michael	NH	03323	PAL 12
Lott-Schlicher, Nancy	NH	02487	BYC 5
Lott-Schlicher, Nancy	NH	02488	PAL 12
La Bolle, Pamela	AK	14846	PAL 1
Leavitt, Patricia	CA	14497	PAL 11
Linders, Pieter	NA	00959	PAL 11
Launtz, Randy	NM	14401	HMM 14
Launtz, Randy	NM	14401	PAL 13
LaCaprucia-Hull, Rebecca	CT	02841	ECO 1
LaCaprucia-Hull, Rebecca	CT	02841	PAL 13
Lacey, Rebecca	NA	08428	PAL 13
Lee, jr., Robert E.	CA	02424	PAL 12

Table B-2 (continued).

L

Name	From	Comment #	SOC
Lee, jr., Robert E.	CA	02425	HMM 14
Lee, jr., Robert E.	CA	02426	HAB 18
Lee, jr., Robert E.	CA	02427	BYC 1
Lovern, Sharla	OK	03510	PAL 13
Lamb, Sloane	OR	08594	PAL 3
Lamb, Sloane	OR	08597	PAL 13
Lamb, Sloane	OR	08598	PAL 13
Liu, Sylvia	NA	14953	LCP 26
Luttrell, T. Edward	WA	14850	PAL 1
Luttrell, T. Edward	WA	14851	EDI 4
Lovell, Trevor	TX	02338	PAL 13
Layer, Whitney	NC	03270	PAL 11

M

Name	From	Comment #	SOC
Morgan, Allen	KY	14351	MPA 3
Mikalson, Amanda	WA	02905	ECO 5
Mikalson, Amanda	WA	02905	PAL 12
Moore, Annelise	CA	03414	PAL 16
Moore, Annelise	CA	03414	ECO 1
McComas, Barney	CA	01483	PAL 11
Mabry, Beth	TN	02784	PAL 15
Mabry, Beth	TN	02784	ECO 1
Messick, Brian	CO	02888	ECO 3
Messick, Brian	CO	02888	PAL 16
Mitchell, Caroline T.	CO	01342	PAL 11
Morrill, Carolyn	MA	03243	PAL 13
Mosley, Cathy	IL	00275	PAL 11
Mack, Charles	FL	00722	PAL 11
moore, charles	AK	03934	LCP 26
McKenna, Charley	NY	03858	PAL 15
McKenna, Charley	NY	03858	ESE 16
McCoy, Cherie	OH	00630	PAL 11
Morrow, Chris	PA	01775	PAL 11
Milko, Claralina	NC	02972	ECO 1
Milko, Claralina	NC	02972	PAL 12
Mitchell, Colleen	OR	02492	PAL 13
Mielke, David	HI	01962	PAL 15
Mielke, David	HI	01962	ECO 6
McDonald, Dawn	AZ	00847	PAL 11
Miller, Dusty	KS	02961	ECO 5
Miller, Dusty	KS	02961	PAL 16
Mroz, Emilee	NY	03844	PAL 13

M

Name	From	Comment #	SOC
Malmborg, Eric	CO	14046	BYC 3
McVoy, Erin	CO	00683	PAL 11
Moss, Evyn	OH	03831	MON 1
Myers, Frank	WI	08459	PAL 13
Mann, Fred	NC	00232	ECO 4
Mulloy, Gail	FL	00693	PAL 11
Martinea, Geradine	NJ	08694	PAL 11
Martinea, Geradine	NJ	08695	ECO 1
McCombs, Glenn	TN	03346	PAL 13
Mims, Heather	NC	08161	BYC 2
McCarthy, Heidi	AZ	02440	PAL 15
McCarthy, Heidi	AZ	02440	ECO 8
Moore, James	LA	03526	ECO 6
Moore, James	LA	03526	PAL 15
Moore, James	LA	03527	ESE 9
Melnychuk, James	IL	03912	MON 1
Melnychuk, James	IL	03912	PAL 13
Melnychuk, James	IL	03912	BYC 3
Mayer-Gawlik, Janice	CO	01806	PAL 11
Miller, Jean Marie	NC	08159	PAL 13
Moretz, Jeff	TX	03294	PAL 13
Moretz, Jeff	TX	03295	PAL 13
Mullins, Jeff	OH	03375	PAL 13
McIntire-Strasburg, Jeffrey O.	MO	02781	ECO 6
McIntire-Strasburg, Jeffrey O.	MO	02781	PAL 15
McDonnell, Jennifer	RI	02548	PAL 12
McDonnell, Jennifer	RI	02548	ECO 6
McAuley, Jennifer	NA	02814	PAL 16
Miller, Jerre	MO	14490	PAL 13
Mac Farlane, JoAnne	OR	02935	PAL 16
Moore, Joe	AK	03676	PAL 5
Moore, Joe	AK	14852	MPA 3
Moore, Joe	AK	14855	MPA 5
Moore, Joe	AK	14855	MPA 3
McCannon, John	MD	00323	PAL 3
McGruder, John	FL	03176	PAL 13
Marflitt, John	GA	08504	PAL 13
Meyer, John	OR	14123	HMM 14
malin, justin	DC	02745	ECO 8
malin, justin	DC	02745	PAL 15
McPherson, Kay	TN	02771	PAL 16
Mummert, Keith	VA	03130	ECO 3
Mummert, Keith	VA	03130	PAL 15
Marohn, Kim	NA	01419	PAL 11
Medlin, Kimlea	CO	02926	HAB 21

Table B-2 (continued).

M

Name	From	Comment #	SOC
Mukherjee, Kunal	CA	03332	PAL 13
McAdam, Kyle	NH	08561	MON 1
McAdam, Kyle	NH	08562	HAB 18
Malkani, Latika M.	CA	01382	PAL 11
McMillan, Laurie	GA	03071	HMM 3
Marmor, Lee	FL	01884	PAL 13
Moulthrop, Lisa	CA	03360	PAL 13
Marshall, Lisa	TX	03512	PAL 13
Mann, Louise	VA	00746	PAL 11
MFT, Maggie Meinschein,	CA	01385	PAL 11
Misko, Malinda	PA	03024	ECO 1
Munnelly, Marie-Claire	NY	01873	MPA 5
Munnelly, Marie-Claire	NY	01874	ESE 9
Munnelly, Marie-Claire	NY	01875	MON 1
March, Martha	NY	02887	PAL 12
McFarland, Mary Ann	VA	08241	MPA 3
McFarland, Mary Ann	VA	08241	ESE 9
McMahon, Mason	NY	01314	ECO 1
McDonald, Michael	MI	03253	PAL 13
Morello, Phyl	PA	00434	PAL 11
Mazor, Raphael	CA	02552	PAL 13
Mazor, Raphael	CA	02553	RES 1
Montoya, Richard	CA	00225	PAL 11
Minich, Rosanne	PA	01286	MON 1
Morrow, Rosemary	WA	08218	PAL 11
Magnotto, Sam	WA	08322	PAL 13
Moeller, Stuart	TX	03062	ESE 9
Marchant, Susan	KS	02473	PAL 13
Marchant, Susan	KS	02474	PAL 12
McCabe, Trevor	WA	14859	HMM 14
McCabe, Trevor	WA	14861	HAB 20
McCabe, Trevor	WA	14862	HAB 20
McCabe, Trevor	WA	14863	PAL 9
McCabe, Trevor	WA	14864	PAL 1
McCabe, Trevor	WA	14865	PAL 1
McClatchey, Walter	LA	00270	PAL 15
McClatchey, Walter	LA	00270	ECO 1
McMullin, William	MI	03770	PAL 13
Maranowski, Yvette	OR	00833	ECO 8
Maranowski, Yvette	OR	00833	PAL 12

N

Name	From	Comment #	SOC
Navarro, Barbara	PA	03804	PAL 16
Navarro, Barbara	PA	03804	ECO 1
Nadelman, Beverly	NY	03222	PAL 12
Novak, Deb	NM	02899	PAL 13
Nagyfy, Desi	WA	01702	PAL 11
Novak, Eve	WA	00330	ECO 8
Novak, Eve	WA	00330	PAL 12
Nguyen, Janice	MD	00613	PAL 11
Norman, Jody	GA	01964	PAL 11
Nichols, Karen	CA	00164	PAL 15
Nance, Karen	MO	00217	MPA 1
Nuckols, Kate	VA	00253	MON 1
Nicholas, Katy	NA	08387	PAL 11
Nygaard, Larry	CO	14133	PAL 11
Notermann, Philip	WA	00837	
Notermann, Philip	WA	00837	ECO 1
none, phoebe	NA	02173	ECO 6
none, phoebe	NA	02173	PAL 12
Nass, Scott	OH	00544	PAL 11
Nicol, Tiffany	NM	03137	PAL 12
Nicol, Tiffany	NM	03137	ECO 8

O

Name	From	Comment #	SOC
O, Almendra	PR	02901	PAL 16
Orth, Anne	MO	02787	PAL 16
Orth, Anne	MO	02787	ECO 1
O., C.	TX	00955	ECO 1
O., C.	TX	00955	PAL 15
Odell, Dena	NM	01197	PAL 11
Odea, Jenny	TN	00074	MPA 3
Ostoich, Julie A.	CA	01770	PAL 11
Olsen, Kristine	CA	01392	PAL 11
Ortquist, Melisaa	NY	03783	PAL 13
Obley, Stephanie	SC	08475	PAL 13
O'Reilly, Susan	CA	00206	MPA 1
Osuch, Susan	TX	02996	PAL 9

P

Name	From	Comment #	SOC
Przybylski, Anna	MN	08178	PAL 11
Pavlick, Anne	TX	02180	BYC 2

Table B-2 (continued).

P

Name	From	Comment #	SOC
Paulet, Anne	CA	02915	PAL 15
Pool, Barbara	AZ	00821	PAL 11
Peters, Bebe	PA	02708	PAL 11
Peters, Bebe	PA	02708	ECO 8
Pichel, Cheryl	MA	03341	PAL 13
Pennoyes, Christina	NY	14080	PAL 11
Plotkin, Christine	CA	08202	PAL 13
Padfield, Clare	NA	01538	PAL 11
Proctor, Deane	NC	03863	PAL 15
Proctor, Deane	NC	03863	ECO 3
Parker, Donna	WA	14841	PAL 1
Parker, Donna	WA	14842	HAB 10
Parke, Elizabeth	KS	02462	PAL 13
Parke, Elizabeth	KS	02463	HMM 14
Parke, Elizabeth	KS	02464	HAB 19
Parke, Elizabeth	KS	02465	AKN 2
Parke, Elizabeth	KS	02466	MPA 3
Penley, Elle	NC	02612	PAL 13
Prucha, Gabriele	NA	01683	PAL 11
Patton, Gary	NA	14958	AKN 5
palma-glennie, janice	HI	02387	PAL 12
Perrodin, Janice	LA	02943	MAM 2
Pijoan, Janna	CO	01887	PAL 11
Polden, Jaya	NA	01792	PAL 15
Polden, Jaya	NA	01792	ECO 8
Peress, Jeff	NY	01871	PAL 12
Pilon, Jessica	WI	01988	PAL 11
Politis, JoAnne	NY	01603	PAL 11
Pratt, John	CT	08269	HAB 21
Parker, Judith	PA	03799	PAL 13
Parker, Judith	PA	03800	PAL 13
Perkins, Katherine C.	TN	00822	PAL 11
Paris, Kathleen	WI	01742	PAL 11
Phillips, Kathleen	FL	03171	PAL 16
Peggar, Kathleen	CA	14078	PAL 13
Parke, Kathry	KS	02469	PAL 3
Parke, Kathry	KS	02471	AKN 1
Parke, Kathry	KS	02472	ECO 1
Parke, Kathry	KS	02472	PAL 12
Parfitt, Kelly	MI	01299	PAL 16
Peterson, Kent	WI	01203	PAL 13
Pallas, Margaret	MD	03889	PAL 12
Pendzich, Marie	NY	03775	PAL 13
Pawlowski, Nicolette	IL	01872	PAL 13
Packer, Patti	NY	03379	PAL 13

P

Name	From	Comment #	SOC
Piro, Peter	CT	00879	ECO 2
Piro, Peter	CT	00879	PAL 15
Popovich, Richard	MO	14129	PAL 13
Pedersen, S. Allan	NA	00844	MON 1
Profeta, Sandra	OR	01542	PAL 11
Phoenix, Susan	WA	00641	PAL 11
Petersen, Susan	CA	01173	PAL 11
Powers, Wendy	CA	00174	PAL 11
Powers, Wendy	CA	00175	PAL 12

Q

Name	From	Comment #	SOC
Quiggle, Dexter	CA	03013	BYC 1
Quiggle, Dexter	CA	03014	HAB 18
Quiggle, Dexter	CA	03015	MPA 3
Quinn, SallyAnne	ME	03769	PAL 12
Quinn, SallyAnne	ME	03769	ECO 8
Qureshi, Shahab	NA	01698	PAL 16
Qureshi, Shahab	NA	01698	ECO 1

R

Name	From	Comment #	SOC
Rotholz, Abigail	MD	03920	BYC 3
Rotholz, Abigail	MD	03920	HMM 14
Read, Adrian	NA	01701	PAL 11
Ramachandran, Ajay	WA	02456	AKN 1
Ruby, Alice	AK	14869	PAL 1
Ruby, Alice	AK	14870	PAL 1
Ruby, Alice	AK	14874	ESE 5
Ruby, Alice	AK	14875	ESE 5
Ruby, Alice	AK	14876	ESE 5
Ruby, Alice	AK	14877	ESE 6
Ruby, Alice	AK	14879	ESE 6
Ruby, Alice	AK	14880	ESE 7
Ruby, Alice	AK	14881	ESE 2
Ruby, Alice	AK	14882	ESE 2
Ruby, Alice	AK	14883	ESE 2
Ruby, Alice	AK	14885	PAL 5
Ruby, Alice	AK	14886	PAL 6
Ruby, Alice	AK	14887	PAL 6
Ruby, Alice	AK	14888	PAL 6
Ruby, Alice	AK	14889	PAL 6

Table B-2 (continued).

R

Name	From	Comment #	SOC
Ruby, Alice	AK	14890	PAL 6
Ruby, Alice	AK	14891	PAL 6
Ruby, Alice	AK	14893	LCP 1
Ruby, Alice	AK	14894	ECO 9
Ruby, Alice	AK	14896	ESE 9
Ruby, Alice	AK	14898	ESE 8
Ruby, Alice	AK	14900	ESE 14
Ruby, Alice	AK	14901	AKN 7
Reid-Peak, Amanda	FL	02591	PAL 13
Ramshaw, Anna	TX	01643	PAL 11
Ruff, Anne Marie	CA	00892	ECO 8
Ruff, Anne Marie	CA	00892	PAL 12
Russell, Barbara	NY	00369	PAL 13
Reider, Barbara	NM	08228	ECO 8
Reider, Barbara	NM	08228	PAL 16
Roller, Beck L.	CA	02288	PAL 13
Ryan, Bettie L	MN	00807	PAL 11
Rotecki, Bill	AK	14511	PAL 11
Rhea, Brenda	VA	02549	PAL 13
Ritz, Candace	NY	02162	PAL 13
Rich, Candace	OH	14500	PAL 11
Racchini, Carl	MI	02957	PAL 16
Racchini, Carl	MI	02957	ECO 1
Romesburg, Charles	UT	02550	PAL 13
Rich, Cyndy	NC	01300	PAL 13
Rusov~Morningstar, Dmitri	CA	00362	MPA 1
Riddle, Donna	OR	02558	PAL 12
Rivalsi, Douglas	GA	08229	PAL 9
Rivalsi, Douglas	GA	08229	PAL 13
Read, Ellen	TN	00829	ECO 1
Read, Ellen	TN	00830	ESE 9
Rossano, Gene	FL	02413	BYC 3
Rossano, Gene	FL	02434	BYC 3
Rossano, Gene	FL	02436	ESE 10
Robinett, Georgia	TX	01797	LCP 8
Robinett, Georgia	TX	01797	PAL 11
Robinett, Georgia	TX	01797	LCP 9
Robinett, Georgia	TX	01798	PAL 11
Rollman, Gordon	NH	08705	ECO 1
Rollman, Gordon	NH	08706	ECO 2
Rosenthal, Illia	NA	00329	PAL 11
Roberts, James	WA	14434	PAL 13
Roberts, Jan	AZ	08528	PAL 15
Ralls, Jane	MN	08671	PAL 13
Robinson, Jesse	WA	03190	PAL 11

R

Name	From	Comment #	SOC
Ramos, Jessica	CA	14446	ESE 9
Rose, John	IN	01097	PAL 11
Roush, Kathleen	LA	02432	PAL 13
Rhodes, Kathy	CO	08323	PAL 13
Ryan, Kelly	CA	01863	PAL 13
Riley, Kevin	TX	03277	PAL 12
Roth, Krista	MI	03909	PAL 13
Rogers, Lila	CA	00221	PAL 11
Rowland, Linda	TX	00042	HAB 21
Royall, Lynne	NC	03902	PAL 13
Ross, Marian	NJ	03766	PAL 13
Ross, Marian	NJ	03767	HMM 14
Rose, Marilyn Gaddis	NY	01012	PAL 11
Rible, Max	CA	00400	ECO 4
Rockwood, Meredith	OH	00592	PAL 11
Raney, Michael	PA	03081	PAL 12
Rutenber, Nancy	NY	02176	PAL 13
Richter, Pamela	FL	03778	PAL 11
Rourke, Patrick	WI	03788	PAL 13
Riley , Paul	PA	03477	PAL 13
Reed Bruns, Peg	NE	03428	PAL 13
Rainey, Peggy	NC	03261	HMM 14
Rainey, Peggy	NC	03262	HAB 19
Rainey, Peggy	NC	03263	BYC 1
Rainey, Peggy	NC	03264	AKN 1
Rainey, Peggy	NC	03265	MPA 5
Ryu, Regina	CA	00887	ECO 2
Regina-Sophia, Rev.	NY	00199	ECO 1
Regina-Sophia, Rev.	NY	00199	PAL 15
Raque, Rosalind	KY	00911	PAL 16
Raque, Rosalind	KY	00911	ECO 8
Runberg Cuddy, Sarah	KS	03924	PAL 16
Reitz, Stephanie	NC	00081	PAL 15
Ronald, William	IL	02900	PAL 12
Ronald, William	IL	02900	ECO 1
Ryan, William	CT	03320	PAL 13

S

Name	From	Comment #	SOC
Singer, Adam	NY	02133	PAL 12
Singer, Adam	NY	02133	ECO 8
Siddiqui, Aftab	TX	01580	PAL 11
Stevenson, Alice	ID	01384	PAL 11

Table B-2 (continued).

S

Name	From	Comment #	SOC
Sage, Amy	CA	02522	BYC 2
Sage, Amy	CA	02523	MPA 3
Salinas, Ana	TX	01491	PAL 11
Salinas, Ana	TX	08192	BYC 3
Smith, Angela	NA	08554	PAL 13
Sardelis, Annabelle	WI	01210	PAL 11
Scofield, Anne	CA	00017	PAL 10
Scofield, Anne	CA	00018	PAL 15
Shapiro, Barbara	IL	01046	PAL 11
Sweeney, Becca	CT	02580	PAL 13
Strunk, Bethany	IL	00048	PAL 12
Sterling, Bonnie	NJ	01648	PAL 11
Stephayn, Brian	TN	01552	ECO 1
Schwartzman, Carl	MD	03022	MAM 1
Shreve, Carol	FL	00623	PAL 11
Shaw, Cary	MA	01353	PAL 11
Sargent, Cathy	MA	01191	PAL 11
Samuels, Charlotte	CA	08210	ECO 6
Samuels, Charlotte	CA	08210	PAL 12
Schulte, Cheryl	GA	02529	PAL 13
Schulte, Cheryl	GA	02530	AKN 2
Soens, Chris	LA	00128	PAL 11
schwarz, cindy	CA	03947	ECO 8
schwarz, cindy	CA	03947	PAL 12
Smith, Colin	CA	02222	RES 2
Scott, Dixie	GA	00882	MPA 1
Schall, Donna R.	OH	00942	PAL 11
Smith, Doug	CA	00016	PAL 11
Starline, Eleanor	OH	14369	PAL 11
Sutphen, Ellen	NJ	02881	ECO 3
Sutphen, Ellen	NJ	02881	PAL 16
Sutton, Ellyn	WA	03528	PAL 13
Shamo, Erika	IL	08540	PAL 13
Stoddard, Eugenia	MI	00842	PAL 15
Stoddard, Eugenia	MI	00842	ECO 1
Smith, Gary	HI	02402	PAL 12
Shester, Geoff	CA	13988	LCP 28
Shester, Geoff	CA	13989	ESE 13
Shester, Geoff	CA	13993	LCP 7
Shester, Geoff	CA	13994	PAL 8
Shester, Geoff	CA	13994	PAL 4
Shester, Geoff	CA	13994	PAL 11
Shester, Geoff	CA	14001	PAL 11
Shester, Geoff	CA	14001	HAB 12
Shester, Geoff	CA	14002	HAB 8

S

Name	From	Comment #	SOC
Shester, Geoff	CA	14003	HAB 5
Shester, Geoff	CA	14004	HAB 11
Shapiro, Gerrie	NY	02484	ECO 8
Shapiro, Gerrie	NY	02484	PAL 13
Stewart, Ph.D., Glenn R.	CA	01776	ECO 8
Stewart, Ph.D., Glenn R.	CA	01776	PAL 12
Sauder, Heidi	NA	00069	PAL 11
Smith, Heidi	NM	01022	PAL 13
Studebaker, Hilary	CO	00295	ECO 1
Spagna, Hilda Zahn	AZ	01238	PAL 11
Sheppard, Hope	TX	00632	PAL 11
Sihoellhorn, Janine	AK	08684	PAL 11
Sihoellhorn, Janine	AK	08684	ECO 8
Scullion, Jason	WA	02836	ECO 1
Scullion, Jason	WA	02836	PAL 15
Salzman, Jaya	NM	01260	PAL 15
Salzman, Jaya	NM	01260	ECO 1
Stahl, Jeff	TX	02832	PAL 16
Sanders, Jessica	NA	00739	PAL 11
stratton, jewels	CA	02495	PAL 12
stratton, jewels	CA	02495	ECO 8
Schultz, Judy	CA	02716	PAL 15
Schultz, Judy	CA	02716	ECO 8
Simons, Julia	GA	03065	ECO 1
Simons, Julia	GA	03065	PAL 16
Sasse, Julian	FL	02511	PAL 13
Samuels, Kari	MA	02500	PAL 13
Scott, Karin	NY	03001	HAB 21
Stewart, Katherine	CA	03229	PAL 13
Stewart, Katherine	CA	03230	MPA 3
Stewart, Katherine	CA	03231	BYC 3
Stewart, Katherine	CA	03232	MPA 3
Steele, Kathleen	MD	02248	PAL 13
Sherrard, Kathryn	NC	08476	PAL 13
Scott, Kevin	PA	02978	PAL 13
Schaaf, Kristy	NV	08355	PAL 12
Sayen, Laura	MI	03658	PAL 13
Stanulis, Lauren	PA	01540	PAL 11
Stone, Leslee	OK	04003	PAL 13
Solte, Lynn	FL	01311	PAL 11
Spencer, Lynzi	PA	02715	MAM 1
Straub, Maggie	MD	08117	PAL 11
Silberberg, Maja	CA	00772	PAL 11
Steinberg, Marc	MD	08226	PAL 13
Spalding, Marc	AK	15111	PAL 11

Table B-2 (continued).

S

Name	From	Comment #	SOC
Spalding, Marc	AK	15111	LCP 9
Spalding, Marc	AK	15111	LCP 8
Spalding, Marc	AK	15112	PAL 11
Spalding, Marc	AK	15113	HMM 14
Spalding, Marc	AK	15114	HMM 6
Spalding, Marc	AK	15115	HMM 7
Spalding, Marc	AK	15116	HMM 15
Spalding, Marc	AK	15119	HMM 14
Spalding, Marc	AK	15120	BYC 9
Spalding, Marc	AK	15121	HAB 12
Spalding, Marc	AK	15122	PAL 11
Spalding, Marc	AK	15123	MON 2
Spalding, Marc	AK	15123	MON 1
Spalding, Marc	AK	15124	MON 2
Spalding, Marc	AK	15125	ECO 8
Spalding, Marc	AK	15126	ESE 6
Spalding, Marc	AK	15126	MON 4
Spalding, Marc	AK	15127	HAB 14
Spalding, Marc	AK	15128	RES 4
Spalding, Marc	AK	15130	AKN 3
Spalding, Marc	AK	15131	LCP 6
Spalding, Marc	AK	15132	LCP 16
Spalding, Marc	AK	15133	LCP 6
Spalding, Marc	AK	15133	LCP 7
Spalding, Marc	AK	15134	LCP 6
Spalding, Marc	AK	15135	LCP 18
Spalding, Marc	AK	15136	LCP 18
Spalding, Marc	AK	15137	LCP 22
Spalding, Marc	AK	15140	MON 1
Spalding, Marc	AK	15141	LCP 6
Spalding, Marc	AK	15142	LCP 15
Spalding, Marc	AK	15143	LCP 26
Spalding, Marc	AK	15144	LCP 26
Spalding, Marc	AK	15145	AKN 8
Spalding, Marc	AK	15146	LCP 28
Spalding, Marc	AK	15147	LCP 28
Spalding, Marc	AK	15148	LCP 28
Spalding, Marc	AK	15148	LCP 27
Spalding, Marc	AK	15149	LCP 5
Spalding, Marc	AK	15150	HAB 22
Spalding, Marc	AK	15151	LCP 12
Spalding, Marc	AK	15152	LCP 2
Spalding, Marc	AK	15153	LCP 5
Spalding, Marc	AK	15154	LCP 6
Spalding, Marc	AK	15155	HMM 4

S

Name	From	Comment #	SOC
Spalding, Marc	AK	15156	HMM 5
Spalding, Marc	AK	15157	HMM 2
Spalding, Marc	AK	15157	HMM 7
Spalding, Marc	AK	15158	HMM 7
Spalding, Marc	AK	15159	LCP 11
Spalding, Marc	AK	15160	MON 2
Spalding, Marc	AK	15161	HMM 5
Spalding, Marc	AK	15162	HMM 11
Spalding, Marc	AK	15162	HMM 10
Spalding, Marc	AK	15163	HMM 10
Spalding, Marc	AK	15164	HAB 6
Spalding, Marc	AK	15166	PAL 3
Spalding, Marc	AK	15167	EDI 7
Spalding, Marc	AK	15168	LCP 26
Spalding, Marc	AK	15169	ECO 5
Spalding, Marc	AK	15170	PAL 3
Spalding, Marc	AK	15171	PAL 3
Spalding, Marc	AK	15172	ECO 14
Spalding, Marc	AK	15173	ECO 15
Spalding, Marc	AK	15174	HMM 7
Spalding, Marc	AK	15175	LCP 22
Spalding, Marc	AK	15176	LCP 30
Spalding, Marc	AK	15176	HMM 7
Spalding, Marc	AK	15176	LCP 11
Spalding, Marc	AK	15177	LCP 14
Spalding, Marc	AK	15178	HMM 11
Spalding, Marc	AK	15179	LCP 14
Spalding, Marc	AK	15180	HMM 7
Spalding, Marc	AK	15181	MAM 9
Spalding, Marc	AK	15182	PAL 3
Spalding, Marc	AK	15183	HMM 2
Spalding, Marc	AK	15183	ECO 12
Spalding, Marc	AK	15184	MON 2
Spalding, Marc	AK	15185	PAL 3
Spalding, Marc	AK	15186	HMM 7
Spalding, Marc	AK	15187	HMM 10
Spalding, Marc	AK	15187	HMM 7
Spalding, Marc	AK	15189	PAL 3
Spalding, Marc	AK	15190	MPA 3
Spalding, Marc	AK	15191	HAB 11
Spalding, Marc	AK	15192	PAL 3
Spalding, Marc	AK	15193	PAL 6
Spalding, Marc	AK	15194	LCP 7
Spalding, Marc	AK	15195	LCP 31
Spalding, Marc	AK	15195	LCP 5

Table B-2 (continued).

S

Name	From	Comment #	SOC
Spalding, Marc	AK	15195	LCP 2
Spalding, Marc	AK	15196	LCP 31
Spalding, Marc	AK	15196	LCP 18
Spalding, Marc	AK	15197	LCP 14
Spalding, Marc	AK	15197	LCP 4
Spalding, Marc	AK	15199	LCP 3
Spalding, Marc	AK	15199	LCP 14
Spalding, Marc	AK	15200	BYC 1
Spalding, Marc	AK	15201	LCP 12
Spalding, Marc	AK	15201	LCP 4
Spalding, Marc	AK	15202	LCP 26
Spalding, Marc	AK	15203	PAL 3
Spalding, Marc	AK	15204	LCP 3
Spalding, Marc	AK	15205	LCP 33
Spalding, Marc	AK	15205	LCP 32
Spalding, Marc	AK	15206	LCP 33
Spalding, Marc	AK	15206	LCP 32
Spalding, Marc	AK	15207	LCP 33
Spalding, Marc	AK	15208	LCP 3
Spalding, Marc	AK	15208	LCP 2
Spalding, Marc	AK	15209	HMM 7
Spalding, Marc	AK	15209	HMM 10
Spalding, Marc	AK	15210	HMM 10
Spalding, Marc	AK	15212	HMM 11
Spalding, Marc	AK	15212	HMM 10
Spalding, Marc	AK	15213	ECO 17
Spalding, Marc	AK	15215	HMM 4
Spalding, Marc	AK	15216	HMM 5
Spalding, Marc	AK	15217	HMM 5
Spalding, Marc	AK	15218	HMM 2
Spalding, Marc	AK	15219	HMM 5
Spalding, Marc	AK	15220	HMM 2
Spalding, Marc	AK	15221	HMM 2
Spalding, Marc	AK	15222	HMM 5
Spalding, Marc	AK	15223	HMM 7
Spalding, Marc	AK	15224	HMM 7
Spalding, Marc	AK	15225	HMM 7
Spalding, Marc	AK	15226	HMM 4
Spalding, Marc	AK	15227	HMM 4
Spalding, Marc	AK	15228	HMM 4
Spalding, Marc	AK	15229	HMM 4
Spalding, Marc	AK	15230	PAL 3
Spalding, Marc	AK	15231	HMM 2
Spalding, Marc	AK	15231	HMM 5
Spalding, Marc	AK	15232	HMM 2

S

Name	From	Comment #	SOC
Spalding, Marc	AK	15233	HMM 6
Spalding, Marc	AK	15234	HMM 4
Spalding, Marc	AK	15234	HMM 2
Spalding, Marc	AK	15234	HMM 3
Spalding, Marc	AK	15235	LCP 11
Spalding, Marc	AK	15236	HMM 7
Spalding, Marc	AK	15237	LCP 11
Spalding, Marc	AK	15237	HMM 7
Spalding, Marc	AK	15238	HMM 6
Spalding, Marc	AK	15239	HMM 7
Spalding, Marc	AK	15239	HMM 2
Spalding, Marc	AK	15239	HMM 5
Spalding, Marc	AK	15240	HMM 7
Spalding, Marc	AK	15241	HMM 11
Spalding, Marc	AK	15241	HMM 7
Spalding, Marc	AK	15241	HMM 12
Spalding, Marc	AK	15242	ECO 6
Spalding, Marc	AK	15242	HMM 2
Spalding, Marc	AK	15243	HMM 8
Spalding, Marc	AK	15245	ECO 21
Spalding, Marc	AK	15245	ECO 10
Spalding, Marc	AK	15246	HMM 5
Spalding, Marc	AK	15246	HMM 7
Spalding, Marc	AK	15246	HMM 8
Spalding, Marc	AK	15246	HMM 4
Spalding, Marc	AK	15247	HMM 7
Spalding, Marc	AK	15248	HMM 8
Spalding, Marc	AK	15249	HMM 8
Spalding, Marc	AK	15250	HMM 10
Spalding, Marc	AK	15250	HMM 12
Spalding, Marc	AK	15251	HMM 9
Spalding, Marc	AK	15252	HMM 9
Spalding, Marc	AK	15253	ECO 11
Spalding, Marc	AK	15254	ECO 11
Spalding, Marc	AK	15254	ECO 10
Spalding, Marc	AK	15255	MAM 8
Spalding, Marc	AK	15255	MAM 3
Spalding, Marc	AK	15256	BYC 9
Spalding, Marc	AK	15257	BYC 9
Spalding, Marc	AK	15258	LCP 16
Spalding, Marc	AK	15258	LCP 3
Spalding, Marc	AK	15259	BYC 9
Spalding, Marc	AK	15260	BYC 7
Spalding, Marc	AK	15261	BYC 10
Spalding, Marc	AK	15262	BYC 6

Marc Spalding - Marc Spalding

Table B-2 (continued).

S

Name	From	Comment #	SOC
Spalding, Marc	AK	15263	PAL 3
Spalding, Marc	AK	15264	HAB 10
Spalding, Marc	AK	15265	HAB 15
Spalding, Marc	AK	15266	HAB 14
Spalding, Marc	AK	15267	PAL 16
Spalding, Marc	AK	15268	LCP 30
Spalding, Marc	AK	15269	HMM 15
Spalding, Marc	AK	15270	HAB 12
Spalding, Marc	AK	15271	HAB 10
Spalding, Marc	AK	15271	HAB 1
Spalding, Marc	AK	15271	HAB 3
Spalding, Marc	AK	15272	PAL 4
Spalding, Marc	AK	15356	HMM 6
Spalding, Marc	AK	15356	HMM 3
Spalding, Marc	AK	15357	LCP 26
Spalding, Marc	AK	15357	PAL 11
Spalding, Marc	AK	15357	LCP 27
Spalding, Marc	AK	15357	LCP 8
Spalding, Marc	AK	15358	PAL 11
Spalding, Marc	AK	15360	HMM 14
Spalding, Marc	AK	15360	HMM 15
Spalding, Marc	AK	15361	HMM 3
Spalding, Marc	AK	15361	ECO 11
Spalding, Marc	AK	15362	HMM 10
Spalding, Marc	AK	15363	PAL 6
Spalding, Marc	AK	15364	PAL 5
Spalding, Marc	AK	15364	HMM 15
Spalding, Marc	AK	15365	HMM 3
Spalding, Marc	AK	15366	HMM 15
Spalding, Marc	AK	15366	PAL 5
Spalding, Marc	AK	15367	PAL 5
Spalding, Marc	AK	15367	HMM 15
Spalding, Marc	AK	15368	PAL 5
Spalding, Marc	AK	15369	PAL 5
Spalding, Marc	AK	15369	BYC 3
Spalding, Marc	AK	15370	BYC 3
Spalding, Marc	AK	15370	PAL 6
Spalding, Marc	AK	15371	PAL 6
Spalding, Marc	AK	15372	BYC 1
Spalding, Marc	AK	15372	BYC 3
Spalding, Marc	AK	15372	PAL 6
Spalding, Marc	AK	15373	PAL 5
Spalding, Marc	AK	15374	HAB 14
Spalding, Marc	AK	15375	PAL 6
Spalding, Marc	AK	15376	PAL 5

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Name	From	Comment #	SOC
Spalding, Marc	AK	15377	PAL 5
Spalding, Marc	AK	15378	PAL 6
Spalding, Marc	AK	15379	ECO 6
Spalding, Marc	AK	15379	PAL 5
Spalding, Marc	AK	15380	ESE 6
Spalding, Marc	AK	15381	ESE 6
Spalding, Marc	AK	15382	ESE 6
Spalding, Marc	AK	15383	PAL 6
Spalding, Marc	AK	15384	PAL 5
Spalding, Marc	AK	15385	PAL 11
Spalding, Marc	AK	15386	ECO 14
Spalding, Marc	AK	15387	PAL 11
Spalding, Marc	AK	15388	AKN 3
Spalding, Marc	AK	15389	AKN 3
Spalding, Marc	AK	15390	AKN 4
Spalding, Marc	AK	15390	AKN 3
Spalding, Marc	AK	15391	LCP 6
Spalding, Marc	AK	15392	LCP 6
Spalding, Marc	AK	15393	LCP 7
Spalding, Marc	AK	15393	LCP 6
Spalding, Marc	AK	15394	LCP 6
Spalding, Marc	AK	15395	LCP 6
Spalding, Marc	AK	15396	LCP 21
Spalding, Marc	AK	15397	LCP 6
Spalding, Marc	AK	15398	LCP 21
Spalding, Marc	AK	15399	LCP 18
Spalding, Marc	AK	15399	LCP 6
Spalding, Marc	AK	15400	LCP 6
Spalding, Marc	AK	15401	LCP 6
Spalding, Marc	AK	15401	LCP 18
Spalding, Marc	AK	15402	LCP 22
Spalding, Marc	AK	15403	LCP 6
Spalding, Marc	AK	15404	LCP 22
Spalding, Marc	AK	15405	LCP 18
Spalding, Marc	AK	15405	LCP 17
Spalding, Marc	AK	15406	LCP 7
Spalding, Marc	AK	15406	LCP 6
Spalding, Marc	AK	15407	HMM 15
Spalding, Marc	AK	15407	BYC 6
Spalding, Marc	AK	15408	LCP 6
Spalding, Marc	AK	15409	LCP 4
Spalding, Marc	AK	15410	LCP 4
Spalding, Marc	AK	15411	LCP 3
Spalding, Marc	AK	15411	LCP 15
Spalding, Marc	AK	15412	LCP 13

Table B-2 (continued).

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Name	From	Comment #	SOC
Spalding, Marc	AK	15412	LCP 15
Spalding, Marc	AK	15413	LCP 13
Spalding, Marc	AK	15413	LCP 4
Spalding, Marc	AK	15414	LCP 4
Spalding, Marc	AK	15414	LCP 15
Spalding, Marc	AK	15415	LCP 26
Spalding, Marc	AK	15416	LCP 11
Spalding, Marc	AK	15418	LCP 26
Spalding, Marc	AK	15419	LCP 26
Spalding, Marc	AK	15420	LCP 27
Spalding, Marc	AK	15420	AKN 8
Spalding, Marc	AK	15420	LCP 26
Spalding, Marc	AK	15421	LCP 28
Spalding, Marc	AK	15422	LCP 28
Spalding, Marc	AK	15423	LCP 27
Spalding, Marc	AK	15423	LCP 26
Spalding, Marc	AK	15424	AKN 8
Spalding, Marc	AK	15424	LCP 27
Spalding, Marc	AK	15425	LCP 14
Spalding, Marc	AK	15425	LCP 13
Spalding, Marc	AK	15425	LCP 18
Spalding, Marc	AK	15425	LCP 15
Spalding, Marc	AK	15426	LCP 13
Spalding, Marc	AK	15426	LCP 12
Spalding, Marc	AK	15426	LCP 14
Spalding, Marc	AK	15427	HAB 22
Spalding, Marc	AK	15428	LCP 13
Spalding, Marc	AK	15428	LCP 12
Spalding, Marc	AK	15429	LCP 5
Spalding, Marc	AK	15429	LCP 2
Spalding, Marc	AK	15431	HMM 4
Spalding, Marc	AK	15432	HMM 5
Spalding, Marc	AK	15433	HMM 7
Spalding, Marc	AK	15433	HMM 2
Spalding, Marc	AK	15434	HMM 7
Spalding, Marc	AK	15435	LCP 18
Spalding, Marc	AK	15436	MON 1
Spalding, Marc	AK	15436	MON 2
Spalding, Marc	AK	15437	BYC 9
Spalding, Marc	AK	15438	MAM 13
Spalding, Marc	AK	15438	MAM 13
Spalding, Marc	AK	15438	MAM 17
Spalding, Marc	AK	15438	MAM 9
Spalding, Marc	AK	15439	LCP 11
Spalding, Marc	AK	15440	HMM 2

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Name	From	Comment #	SOC
Spalding, Marc	AK	15441	LCP 11
Spalding, Marc	AK	15441	LCP 31
Spalding, Marc	AK	15442	ECO 9
Spalding, Marc	AK	15443	HMM 12
Spalding, Marc	AK	15444	HMM 10
Spalding, Marc	AK	15445	HAB 1
Spalding, Marc	AK	15447	PAL 3
Spalding, Marc	AK	15448	PAL 3
Spalding, Marc	AK	15448	LCP 22
Spalding, Marc	AK	15449	PAL 7
Spalding, Marc	AK	15449	LCP 22
Spalding, Marc	AK	15450	HMM 8
Spalding, Marc	AK	15451	PAL 13
Spalding, Marc	AK	15451	ECO 8
Spalding, Marc	AK	15452	ECO 10
Spalding, Marc	AK	15453	LCP 11
Spalding, Marc	AK	15454	HMM 2
Spalding, Marc	AK	15455	LCP 30
Spalding, Marc	AK	15456	LCP 6
Spalding, Marc	AK	15456	LCP 7
Spalding, Marc	AK	15457	LCP 14
Spalding, Marc	AK	15457	LCP 4
Spalding, Marc	AK	15457	LCP 31
Spalding, Marc	AK	15458	LCP 4
Spalding, Marc	AK	15458	LCP 14
Spalding, Marc	AK	15459	LCP 3
Spalding, Marc	AK	15459	LCP 5
Spalding, Marc	AK	15459	LCP 4
Spalding, Marc	AK	15460	LCP 33
Spalding, Marc	AK	15460	LCP 32
Spalding, Marc	AK	15462	ECO 10
Spalding, Marc	AK	15463	HMM 4
Spalding, Marc	AK	15464	HMM 4
Spalding, Marc	AK	15465	PAL 3
Spalding, Marc	AK	15466	ECO 10
Spalding, Marc	AK	15466	HMM 6
Spalding, Marc	AK	15467	HMM 7
Spalding, Marc	AK	15468	HMM 2
Spalding, Marc	AK	15468	HMM 4
Spalding, Marc	AK	15469	HMM 6
Spalding, Marc	AK	15470	HMM 8
Spalding, Marc	AK	15471	HMM 8
Spalding, Marc	AK	15473	HMM 9
Spalding, Marc	AK	15474	ECO 11
Spalding, Marc	AK	15475	MAM 7

Table B-2 (continued).

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Name	From	Comment #	SOC
Spalding, Marc	AK	15476	LCP 4
Spalding, Marc	AK	15476	LCP 16
Spalding, Marc	AK	15477	BYC 9
Spalding, Marc	AK	15478	BYC 7
Spalding, Marc	AK	15479	BYC 6
Spalding, Marc	AK	15480	HAB 13
Spalding, Marc	AK	15481	HAB 14
Spalding, Marc	AK	15482	PAL 4
Spalding, Marc	AK	15483	HAB 1
Spalding, Marc	AK	15484	HAB 7
Spalding, Marc	AK	15485	HAB 13
Spalding, Marc	AK	15486	MAM 3
Spalding, Marc	AK	15487	MAM 9
Spalding, Marc	AK	15488	MAM 19
Spalding, Marc	AK	15488	MAM 9
Spalding, Marc	AK	15489	MAM 9
Spalding, Marc	AK	15490	HMM 13
Spalding, Marc	AK	15491	HAB 11
Spalding, Marc	AK	15492	MAM 13
Spalding, Marc	AK	15492	MAM 3
Spalding, Marc	AK	15493	MAM 13
Spalding, Marc	AK	15494	HMM 15
Spalding, Marc	AK	15495	HAB 11
Spalding, Marc	AK	15496	HAB 12
Spalding, Marc	AK	15497	HAB 12
Spalding, Marc	AK	15497	HAB 11
Spalding, Marc	AK	15498	MPA 3
Spalding, Marc	AK	15499	HAB 13
Spalding, Marc	AK	15500	MPA 4
Spalding, Marc	AK	15501	HAB 12
Spalding, Marc	AK	15502	MPA 4
Spalding, Marc	AK	15503	MPA 4
Spalding, Marc	AK	15504	MAM 20
Spalding, Marc	AK	15504	SEA 6
Spalding, Marc	AK	15505	MAM 11
Spalding, Marc	AK	15505	SEA 3
Spalding, Marc	AK	15505	MAM 7
Spalding, Marc	AK	15506	MAM 11
Spalding, Marc	AK	15506	SEA 3
Spalding, Marc	AK	15507	MAM 3
Spalding, Marc	AK	15508	MAM 13
Spalding, Marc	AK	15508	MAM 24
Spalding, Marc	AK	15509	MAM 3
Spalding, Marc	AK	15509	MAM 2
Spalding, Marc	AK	15510	HMM 15

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Name	From	Comment #	SOC
Spalding, Marc	AK	15511	HMM 15
Spalding, Marc	AK	15512	ECO 21
Spalding, Marc	AK	15513	EDI 7
Spalding, Marc	AK	15514	LCP 26
Spalding, Marc	AK	15515	ECO 6
Spalding, Marc	AK	15516	ECO 13
Spalding, Marc	AK	15517	PAL 3
Spalding, Marc	AK	15518	ECO 14
Spalding, Marc	AK	15519	ECO 15
Spalding, Marc	AK	15520	ECO 16
Spalding, Marc	AK	15521	LCP 22
Spalding, Marc	AK	15522	HMM 2
Spalding, Marc	AK	15523	HMM 13
Spalding, Marc	AK	15523	HMM 15
Spalding, Marc	AK	15525	HMM 8
Spalding, Marc	AK	15526	HMM 7
Spalding, Marc	AK	15527	HMM 3
Spalding, Marc	AK	15528	MAM 9
Spalding, Marc	AK	15529	PAL 3
Spalding, Marc	AK	15530	ECO 12
Spalding, Marc	AK	15531	MAM 8
Spalding, Marc	AK	15531	MAM 13
Spalding, Marc	AK	15532	HAB 14
Spalding, Marc	AK	15533	MON 2
Spalding, Marc	AK	15534	HMM 2
Spalding, Marc	AK	15535	HMM 11
Spalding, Marc	AK	15535	HMM 12
Spalding, Marc	AK	15537	PAL 3
Spalding, Marc	AK	15538	MPA 4
Spalding, Marc	AK	15539	PAL 4
Spalding, Marc	AK	15540	PAL 6
Spalding, Marc	AK	15541	PAL 6
Spalding, Marc	AK	15542	PAL 6
Spalding, Marc	AK	15543	PAL 3
Spalding, Marc	AK	15543	LCP 22
Spalding, Marc	AK	15544	LCP 14
Spalding, Marc	AK	15545	LCP 14
Spalding, Marc	AK	15546	LCP 4
Spalding, Marc	AK	15546	LCP 14
Spalding, Marc	AK	15547	HAB 1
Spalding, Marc	AK	15548	LCP 3
Spalding, Marc	AK	15549	BYC 1
Spalding, Marc	AK	15549	LCP 15
Spalding, Marc	AK	15549	LCP 31
Spalding, Marc	AK	15550	MAM 23

Table B-2 (continued).

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Name	From	Comment #	SOC
Spalding, Marc	AK	15550	MAM 8
Spalding, Marc	AK	15551	LCP 12
Spalding, Marc	AK	15551	LCP 13
Spalding, Marc	AK	15551	LCP 4
Spalding, Marc	AK	15552	LCP 26
Spalding, Marc	AK	15553	PAL 3
Spalding, Marc	AK	15554	LCP 3
Spalding, Marc	AK	15555	LCP 13
Spalding, Marc	AK	15555	LCP 4
Spalding, Marc	AK	15556	LCP 32
Spalding, Marc	AK	15556	LCP 33
Spalding, Marc	AK	15557	LCP 33
Spalding, Marc	AK	15558	HMM 10
Spalding, Marc	AK	15558	HMM 11
Spalding, Marc	AK	15559	HMM 10
Spalding, Marc	AK	15560	HMM 10
Spalding, Marc	AK	15561	ECO 12
Spalding, Marc	AK	15561	HMM 10
Spalding, Marc	AK	15562	HMM 2
Spalding, Marc	AK	15562	HMM 7
Spalding, Marc	AK	15563	ECO 17
Spalding, Marc	AK	15564	HMM 4
Spalding, Marc	AK	15565	HMM 5
Spalding, Marc	AK	15566	HMM 5
Spalding, Marc	AK	15567	HMM 2
Spalding, Marc	AK	15568	HMM 5
Spalding, Marc	AK	15569	HMM 2
Spalding, Marc	AK	15570	HMM 2
Spalding, Marc	AK	15571	HMM 7
Spalding, Marc	AK	15572	HMM 7
Spalding, Marc	AK	15573	HMM 7
Spalding, Marc	AK	15574	HMM 7
Spalding, Marc	AK	15575	HMM 4
Spalding, Marc	AK	15576	HMM 4
Spalding, Marc	AK	15577	HMM 4
Spalding, Marc	AK	15578	HMM 4
Spalding, Marc	AK	15579	PAL 3
Spalding, Marc	AK	15580	HMM 2
Spalding, Marc	AK	15581	HMM 2
Spalding, Marc	AK	15582	ECO 10
Spalding, Marc	AK	15583	ECO 18
Spalding, Marc	AK	15584	HMM 6
Spalding, Marc	AK	15585	HMM 6
Spalding, Marc	AK	15586	HAB 11
Spalding, Marc	AK	15587	HMM 7

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Name	From	Comment #	SOC
Spalding, Marc	AK	15588	HMM 7
Spalding, Marc	AK	15589	HMM 7
Spalding, Marc	AK	15590	HMM 6
Spalding, Marc	AK	15591	HMM 6
Spalding, Marc	AK	15592	HMM 7
Spalding, Marc	AK	15593	ECO 8
Spalding, Marc	AK	15594	HMM 8
Spalding, Marc	AK	15595	HMM 2
Spalding, Marc	AK	15597	HMM 5
Spalding, Marc	AK	15598	HMM 7
Spalding, Marc	AK	15599	HMM 8
Spalding, Marc	AK	15600	HMM 8
Spalding, Marc	AK	15601	HMM 8
Spalding, Marc	AK	15602	HMM 10
Spalding, Marc	AK	15602	HMM 7
Spalding, Marc	AK	15603	HMM 7
Spalding, Marc	AK	15604	HMM 9
Spalding, Marc	AK	15605	HMM 9
Spalding, Marc	AK	15606	ECO 16
Spalding, Marc	AK	15607	ECO 11
Spalding, Marc	AK	15608	MAM 8
Spalding, Marc	AK	15609	HMM 4
Spalding, Marc	AK	15610	MAM 7
Spalding, Marc	AK	15611	MAM 10
Spalding, Marc	AK	15612	BYC 9
Spalding, Marc	AK	15613	BYC 11
Spalding, Marc	AK	15614	BYC 9
Spalding, Marc	AK	15615	BYC 12
Spalding, Marc	AK	15616	BYC 9
Spalding, Marc	AK	15617	BYC 7
Spalding, Marc	AK	15618	BYC 10
Spalding, Marc	AK	15619	BYC 13
Spalding, Marc	AK	15620	BYC 10
Spalding, Marc	AK	15621	BYC 10
Spalding, Marc	AK	15622	BYC 6
Spalding, Marc	AK	15623	PAL 4
Spalding, Marc	AK	15624	HAB 14
Spalding, Marc	AK	15625	HAB 15
Spalding, Marc	AK	15625	HAB 9
Spalding, Marc	AK	15626	HAB 14
Spalding, Marc	AK	15627	PAL 5
Spalding, Marc	AK	15627	PAL 6
Spalding, Marc	AK	15628	HAB 17
Spalding, Marc	AK	15628	HAB 9
Spalding, Marc	AK	15629	HAB 14

Table B-2 (continued).

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Name	From	Comment #	SOC
Spalding, Marc	AK	15630	HAB 22
Spalding, Marc	AK	15632	PAL 3
Spalding, Marc	AK	15633	HAB 12
Spalding, Marc	AK	15634	HAB 3
Spalding, Marc	AK	15634	HAB 4
Spalding, Marc	AK	15635	PAL 4
Spalding, Marc	AK	15636	PAL 4
Spalding, Marc	AK	15637	PAL 4
Spalding, Marc	AK	15638	HAB 1
Spalding, Marc	AK	15639	HAB 6
Spalding, Marc	AK	15640	HAB 7
Spalding, Marc	AK	15641	HAB 13
Spalding, Marc	AK	15642	MAM 23
Spalding, Marc	AK	15642	MAM 8
Spalding, Marc	AK	15643	MAM 23
Spalding, Marc	AK	15643	MAM 8
Spalding, Marc	AK	15644	LCP 22
Spalding, Marc	AK	15645	MAM 3
Spalding, Marc	AK	15646	MAM 9
Spalding, Marc	AK	15647	MAM 9
Spalding, Marc	AK	15648	MAM 9
Spalding, Marc	AK	15649	MAM 9
Spalding, Marc	AK	15650	MAM 9
Spalding, Marc	AK	15651	MAM 13
Spalding, Marc	AK	15651	MAM 13
Spalding, Marc	AK	15652	MAM 13
Spalding, Marc	AK	15652	MAM 8
Spalding, Marc	AK	15653	MAM 13
Spalding, Marc	AK	15653	MAM 8
Spalding, Marc	AK	15654	MAM 20
Spalding, Marc	AK	15654	MAM 13
Spalding, Marc	AK	15655	MAM 13
Spalding, Marc	AK	15656	MAM 13
Spalding, Marc	AK	15656	MAM 19
Spalding, Marc	AK	15657	MAM 13
Spalding, Marc	AK	15658	MAM 13
Spalding, Marc	AK	15659	HMM 15
Spalding, Marc	AK	15660	MAM 8
Spalding, Marc	AK	15660	MAM 2
Spalding, Marc	AK	15661	HAB 11
Spalding, Marc	AK	15662	HAB 11
Spalding, Marc	AK	15663	HAB 11
Spalding, Marc	AK	15663	HAB 13
Spalding, Marc	AK	15664	PAL 16
Spalding, Marc	AK	15665	HAB 12

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Name	From	Comment #	SOC
Spalding, Marc	AK	15665	HAB 19
Spalding, Marc	AK	15665	HAB 18
Spalding, Marc	AK	15666	HAB 12
Spalding, Marc	AK	15667	HAB 15
Spalding, Marc	AK	15668	HAB 12
Spalding, Marc	AK	15669	HAB 12
Spalding, Marc	AK	15671	HAB 12
Spalding, Marc	AK	15671	HAB 11
Spalding, Marc	AK	15672	MPA 4
Spalding, Marc	AK	15673	HMM 11
Spalding, Marc	AK	15674	HAB 12
Spalding, Marc	AK	15674	MPA 4
Spalding, Marc	AK	15675	MPA 4
Spalding, Marc	AK	15676	PAL 16
Spalding, Marc	AK	15677	SEA 3
Spalding, Marc	AK	15678	MAM 6
Spalding, Marc	AK	15679	MAM 6
Spalding, Marc	AK	15680	MAM 8
Spalding, Marc	AK	15680	SEA 3
Spalding, Marc	AK	15681	HMM 11
Spalding, Marc	AK	15681	MAM 23
Spalding, Marc	AK	15682	MAM 2
Spalding, Marc	AK	15682	MAM 8
Spalding, Marc	AK	15683	HMM 2
Spalding, Marc	AK	15684	MAM 8
Spalding, Marc	AK	15685	MAM 3
Spalding, Marc	AK	15685	MAM 13
Spalding, Marc	AK	15687	MAM 4
Spalding, Marc	AK	15687	SEA 4
Spalding, Marc	AK	15688	MAM 2
Spalding, Marc	AK	15688	MAM 8
Spalding, Marc	AK	15689	ECO 19
Spalding, Marc	AK	15690	MAM 21
Spalding, Marc	AK	15691	ECO 20
Spalding, Marc	AK	15692	MAM 21
Spalding, Marc	AK	15693	MAM 20
Spalding, Marc	AK	15693	MAM 13
Spalding, Marc	AK	15694	MAM 13
Spalding, Marc	AK	15694	MAM 13
Spalding, Marc	AK	15695	MAM 13
Spalding, Marc	AK	15696	MAM 2
Spalding, Marc	AK	15697	MAM 2
Spalding, Marc	AK	15698	HMM 15
Spalding, Marc	AK	15700	HMM 15
Spalding, Marc	AK	15701	HMM 15

Marc Spalding - Marc Spalding

Table B-2 (continued).

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Name	From	Comment #	SOC
Spalding, Marc	AK	15701	HMM 2
Spalding, Marc	AK	15702	LCP 3
Spalding, Marc	AK	15702	HMM 2
Spalding, Marc	AK	15702	HMM 15
Spalding, Marc	AK	15703	MAM 9
Spalding, Marc	AK	15704	HMM 15
Spalding, Marc	AK	15705	HMM 15
Spalding, Marc	AK	15706	MAM 9
Spalding, Marc	AK	15706	MAM 7
Spalding, Marc	AK	15707	HMM 15
Spalding, Marc	AK	15708	HMM 15
Spalding, Marc	AK	15708	PAL 11
Spalding, Marc	AK	15709	ECO 21
Spalding, Marc	AK	15710	ECO 21
Spalding, Marc	AK	15711	MAM 21
Spalding, Marc	AK	15712	ECO 21
Spalding, Marc	AK	15713	ECO 21
Spalding, Marc	AK	15714	ECO 21
Spalding, Marc	AK	15715	ECO 21
Spalding, Marc	AK	15716	ECO 21
Spalding, Marc	AK	15717	ECO 21
Spalding, Marc	AK	15718	HMM 10
Spalding, Marc	AK	15719	ECO 21
Spalding, Marc	AK	15761	HAB 3
Spalding, Marc	AK	15761	HAB 4
Sexton, Margaret	SC	02643	PAL 13
Skelly, Marie	CA	08425	PAL 13
Stevens, Mark	NA	14952	LCP 26
Sorensen, Meagan	TN	02547	PAL 12
Sorensen, Meagan	TN	02547	ECO 8
Shoule, Micahel	NY	08618	PAL 13
Smole, Michael	MD	08341	PAL 13
Smole, Michael	MD	08342	MON 1
Steenwyk, Michelle	MI	02479	PAL 12
Steenwyk, Michelle	MI	02479	ECO 8
Stone, Mindy	FL	03798	MPA 5
Speck, Misty	WA	02515	PAL 13
Silva, Mitsy	CA	00457	PAL 11
Schulte, Monica	NA	00832	ECO 1
Saucedo, Monica	NA	03733	PAL 11
Spejcher, Nancy	IL	03774	ESE 9
Sotomayor, Nora	NY	03730	HAB 19
Shapiro, Pamela	NA	01846	PAL 12
Shapiro, Pamela	NA	01846	ECO 8
Sykes, Pat	NA	01282	ECO 8

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Name	From	Comment #	SOC
St. August, Patricia	WA	02641	PAL 13
Stiles, Paula	VT	02453	HMM 14
Sullivan, Rebekah	NA	01274	PAL 13
Sheard, Richard	AK	03930	LCP 26
Salmon, Richard Sam	WI	02409	BYC 3
Schmelz, Robert	NJ	03894	PAL 13
Swanson, Roberta	CA	08356	PAL 13
Schafer, Ruth L.	CA	00834	ECO 2
Suplicki, Sandra	CT	02697	PAL 16
Suplicki, Sandra	CT	02697	ECO 3
Sutaria, Shreeraj	CA	03850	PAL 13
Stanton, Staci	IA	02296	PAL 13
Senner, Harrison, Stanley E.,	AK	15742	SEA 4
Senner, Harrison, Stanley E.,	AK	15743	SEA 4
Senner, Harrison, Stanley E.,	AK	15744	SEA 4
Senner, Harrison, Stanley E.,	AK	15745	SEA 4
Senner, Harrison, Stanley E.,	AK	15746	SEA 8
Senner, Harrison, Stanley E.,	AK	15747	SEA 9
Senner, Harrison, Stanley E.,	AK	15748	SEA 9
Senner, Harrison, Stanley E.,	AK	15748	PAL 5
Senner, Harrison, Stanley E.,	AK	15749	SEA 9
Senner, Harrison, Stanley E.,	AK	15750	SEA 10
Senner, Harrison, Stanley E.,	AK	15751	SEA 5
Senner, Harrison, Stanley E.,	AK	15752	SEA 5
Senner, Harrison, Stanley E.,	AK	15753	SEA 5
Senner, Harrison, Stanley E.,	AK	15754	SEA 6
Senner, Harrison, Stanley E.,	AK	15755	SEA 2
Senner, Harrison, Stanley E.,	AK	15755	SEA 6
Senner, Harrison, Stanley E.,	AK	15756	ECO 21
Sargent, Stella	VT	14372	HAB 21
Summers, Steve	CA	01257	PAL 11
Steffy, Susan	NM	01232	ECO 1
Steffy, Susan	NM	01232	PAL 15
sammis, susan	IN	03314	PAL 13
Sweitzer, Susan	VT	03959	PAL 11
Sweitzer, Susan	VT	03961	PAL 11
Sweitzer, Susan	VT	03963	PAL 11
Sweitzer, Susan	VT	03966	PAL 11
Sweitzer, Susan	VT	03968	PAL 11
Sweitzer, Susan	VT	03972	PAL 11
Sweitzer, Susan	VT	03974	PAL 11
Sweitzer, Susan	VT	03977	PAL 11
Sweitzer, Susan	VT	03978	PAL 11
Sweitzer, Susan	VT	03979	PAL 11
Sweitzer, Susan	VT	03980	PAL 11

Table B-2 (continued).

S

Name	From	Comment #	SOC
Sweitzer, Susan	VT	03981	PAL 11
Sweitzer, Susan	VT	03983	PAL 11
Sweitzer, Susan	VT	03985	PAL 11
Sweitzer, Susan	VT	03986	PAL 11
Sweitzer, Susan	VT	03987	PAL 11
Sweitzer, Susan	VT	03988	PAL 11
Sweitzer, Susan	VT	03989	PAL 11
Setka, Suzi	CA	01267	PAL 11
Saraiva, Teresa	NA	02885	PAL 16
Saraiva, Teresa	NA	02885	ECO 3
Stempel, Thomas	AZ	01058	PAL 11
Slawson, Thomas	AZ	02609	PAL 13
Smith, Thorn	WA	08587	PAL 2
Smith, Thorn	WA	08587	SEA 1
Smith, Thorn	WA	08587	PAL 1
Smith, Thorn	WA	08588	PAL 2
Smith, Thorn	WA	08588	SEA 7
Smith, Thorn	WA	14843	PAL 1
Stephany, Timothy	VA	08259	HMM 14
Stephany, Timothy	VA	08260	MPA 3
Schubert, Tina	WA	01591	PAL 11
Stuckey, Vickie	CO	01543	ECO 1
Sheard, Whit	NA	14954	LCP 26
Sheard, Whit	NA	14957	LCP 28
Sheard, Whit	NA	14957	LCP 26
Sheard, Whit	NA	15763	LCP 26
Sheard, Whit	NA	15763	LCP 27
Sheard, Whit	NA	15763	EDI 7
Stern, William	?	02678	PAL 13

T

Name	From	Comment #	SOC
Trustees For Alaska,	AK	14964	BYC 6
Trustees For Alaska,	AK	14964	LCP 16
Trustees For Alaska,	AK	14965	LCP 19
Trustees For Alaska,	AK	14965	MAM 7
Trustees For Alaska,	AK	14966	LCP 6
Trustees For Alaska,	AK	14967	LCP 19
Trustees For Alaska,	AK	14968	MAM 5
Trustees For Alaska,	AK	14969	MON 2
Trustees For Alaska,	AK	14970	MAM 16
Trustees For Alaska,	AK	14971	BYC 7
Trustees For Alaska,	AK	14971	LCP 19

T

Name	From	Comment #	SOC
Trustees For Alaska,	AK	14972	BYC 6
Trustees For Alaska,	AK	14973	BYC 7
Trustees For Alaska,	AK	14974	LCP 16
Trustees For Alaska,	AK	14975	LCP 8
Trustees For Alaska,	AK	14975	LCP 6
Trustees For Alaska,	AK	14976	LCP 11
Trustees For Alaska,	AK	14977	BYC 7
Trustees For Alaska,	AK	14977	LCP 16
Trustees For Alaska,	AK	14979	BYC 6
Trustees For Alaska,	AK	14980	LCP 16
Trustees For Alaska,	AK	14980	BYC 7
Trustees For Alaska,	AK	14981	BYC 8
Trustees For Alaska,	AK	14982	BYC 6
Trustees For Alaska,	AK	14983	LCP 16
Trustees For Alaska,	AK	14984	LCP 16
Trustees For Alaska,	AK	14984	LCP 7
Trustees For Alaska,	AK	14984	LCP 8
Trustees For Alaska,	AK	14985	BYC 6
Trustees For Alaska,	AK	14986	BYC 6
Trustees For Alaska,	AK	14987	BYC 6
Trustees For Alaska,	AK	14988	BYC 7
Trustees For Alaska,	AK	14989	LCP 16
Trustees For Alaska,	AK	14989	BYC 6
Trustees For Alaska,	AK	14990	BYC 11
Trustees For Alaska,	AK	14991	HMM 3
Trustees For Alaska,	AK	14992	BYC 6
Trustees For Alaska,	AK	14994	BYC 8
Trustees For Alaska,	AK	14995	BYC 11
Trustees For Alaska,	AK	14996	PAL 4
Trustees For Alaska,	AK	14997	BYC 12
Trustees For Alaska,	AK	14998	LCP 22
Trustees For Alaska,	AK	14999	LCP 22
Trustees For Alaska,	AK	14999	BYC 12
Trustees For Alaska,	AK	15000	LCP 22
Trustees For Alaska,	AK	15001	LCP 22
Trustees For Alaska,	AK	15001	LCP 19
Trustees For Alaska,	AK	15001	LCP 5
Trustees For Alaska,	AK	15002	LCP 11
Trustees For Alaska,	AK	15003	LCP 11
Trustees For Alaska,	AK	15004	HMM 3
Trustees For Alaska,	AK	15004	BYC 9
Trustees For Alaska,	AK	15005	ECO 18
Trustees For Alaska,	AK	15006	MAM 2
Trustees For Alaska,	AK	15007	MAM 6
Trustees For Alaska,	AK	15007	MAM 7

Table B-2 (continued).

T

Name	From	Comment #	SOC
Trustees For Alaska,	AK	15008	LCP 11
Trustees For Alaska,	AK	15009	LCP 8
Trustees For Alaska,	AK	15010	MAM 6
Trustees For Alaska,	AK	15010	LCP 19
Trustees For Alaska,	AK	15011	MAM 6
Trustees For Alaska,	AK	15011	LCP 19
Trustees For Alaska,	AK	15012	MAM 6
Trustees For Alaska,	AK	15013	MAM 6
Trustees For Alaska,	AK	15013	MAM 17
Trustees For Alaska,	AK	15014	MAM 17
Trustees For Alaska,	AK	15016	MAM 6
Trustees For Alaska,	AK	15017	MAM 6
Trustees For Alaska,	AK	15019	LCP 19
Trustees For Alaska,	AK	15019	MAM 17
Trustees For Alaska,	AK	15020	LCP 19
Trustees For Alaska,	AK	15020	MAM 7
Trustees For Alaska,	AK	15020	MAM 17
Trustees For Alaska,	AK	15021	MAM 7
Trustees For Alaska,	AK	15022	MAM 7
Trustees For Alaska,	AK	15023	LCP 11
Trustees For Alaska,	AK	15023	LCP 19
Trustees For Alaska,	AK	15024	MAM 17
Trustees For Alaska,	AK	15025	MAM 17
Trustees For Alaska,	AK	15026	MAM 17
Trustees For Alaska,	AK	15027	MAM 13
Trustees For Alaska,	AK	15028	MAM 13
Trustees For Alaska,	AK	15029	MAM 13
Trustees For Alaska,	AK	15030	MAM 13
Trustees For Alaska,	AK	15031	MAM 13
Trustees For Alaska,	AK	15032	LCP 19
Trustees For Alaska,	AK	15032	MAM 13
Trustees For Alaska,	AK	15033	MON 2
Trustees For Alaska,	AK	15034	MON 1
Trustees For Alaska,	AK	15035	MAM 19
Trustees For Alaska,	AK	15035	MAM 20
Trustees For Alaska,	AK	15036	LCP 20
Trustees For Alaska,	AK	15037	LCP 11
Trustees For Alaska,	AK	15038	MAM 7
Trustees For Alaska,	AK	15038	LCP 20
Trustees For Alaska,	AK	15039	LCP 11
Trustees For Alaska,	AK	15040	LCP 19
Trustees For Alaska,	AK	15041	MAM 6
Trustees For Alaska,	AK	15041	LCP 19
Trustees For Alaska,	AK	15042	MAM 7
Trustees For Alaska,	AK	15043	MAM 16

T

Name	From	Comment #	SOC
Trustees For Alaska,	AK	15044	LCP 20
Trustees For Alaska,	AK	15044	LCP 31
Trustees For Alaska,	AK	15044	LCP 11
Trustees For Alaska,	AK	15045	LCP 6
Trustees For Alaska,	AK	15046	MAM 16
Terry, Allan	FL	00615	PAL 11
Trindle, Amy	MO	00045	PAL 13
Thorne, Araminta	CA	02906	ECO 5
Thorne, Araminta	CA	02906	PAL 12
Tekuelve, Ashley	OH	01911	PAL 13
Trujillo, Carol	CA	03855	PAL 13
Terry, Carolyn	NJ	08408	PAL 13
Tucker, Chris	ID	08211	PAL 13
Tucker, Chris	ID	08211	BYC 4
Turner, Christi	OR	02802	PAL 12
Turner, Christi	OR	02802	ECO 3
thirtyMANILA, faye	NA	02835	MAM 1
Truax, Grace	MI	03301	PAL 13
Tessler, Heather	OH	03368	PAL 15
Trammell, Jamie	CO	00176	PAL 12
Trammell, Jamie	CO	00176	ECO 8
Tolpin, Jamie	CA	08680	PAL 13
Thew, Janet	CA	03864	ECO 1
Thew, Janet	CA	03864	PAL 16
Telemaque, Jess	MA	03079	PAL 16
Telemaque, Jess	MA	03079	ECO 1
Thompsen, Kara	OR	08231	PAL 12
Thompsen, Kara	OR	08231	ECO 8
Tanner, Karen	CA	08661	PAL 13
Tanner, Karen	CA	08663	PAL 13
Tanner, Karen	CA	08664	PAL 15
Tull, Kip	MI	14481	ECO 8
Tull, Kip	MI	14481	PAL 13
Tull, Kip	MI	14483	PAL 11
Truse, Kristin	NJ	03887	PAL 13
Thomas, Krystal	NY	00616	PAL 11
Tucker, Kyle	MO	03068	PAL 12
Tucker, Kyle	MO	03068	ECO 8
Taylor, Leah M	ID	01099	PAL 11
Terbot, Lee & Charlotte	AR	00213	MPA 1
Tarr, Linda	OR	08261	PAL 13
Tarr, Linda	OR	08261	BYC 2
Tarnowski, Lori	SC	03132	ECO 1
Tarnowski, Lori	SC	03132	PAL 16
Teply, Michael	CA	02406	HMM 14

Table B-2 (continued).

T

Name	From	Comment #	SOC
Teply, Michael	CA	02407	MON 1
Torrey, Michele	WA	01675	ECO 6
Torrey, Michele	WA	01675	PAL 12
Turner, Miranda	NA	02946	PAL 15
Turner, Miranda	NA	02946	ECO 6
Taylor, Pat	TX	02592	PAL 13
Taylor, Pat	TX	02592	HAB 19
Thompson, Rebecca	NA	08131	PAL 11
Takagi, Richard	CA	01867	HAB 18
Takagi, Richard	CA	01867	MPA 3
Thigpen, Ron	NC	02132	PAL 13
tsang, sauwah	CA	08483	ECO 8
Taylor, Scott	CA	08311	PAL 13
Thomas, Shane	IA	03784	MPA 3
Thomas, Shane	IA	03786	BYC 3
Thomas, Shane	IA	03786	RES 3
Triplett, Tia	CA	03612	MAM 1
Traveler, Time	CA	00685	PAL 11

U

Name	From	Comment #	SOC
U.S. Environmental Protection	WA	14902	PAL 1
U.S. Environmental Protection	WA	14903	PAL 1
U.S. Environmental Protection	WA	14904	MON 2
U.S. Environmental Protection	WA	14905	LCP 18
U.S. Environmental Protection	WA	14906	EDI 6
U.S. Environmental Protection	WA	14909	EDI 6
U.S. Environmental Protection	WA	14912	EDI 7
U.S. Environmental Protection	WA	14913	EDI 7
U.S. Environmental Protection	WA	14914	MON 2
U.S. Environmental Protection	WA	14915	MPA 1
U.S. Environmental Protection	WA	14916	LCP 18
U.S. Environmental Protection	WA	14917	EDI 7
U.S. Environmental Protection	WA	14917	EDI 6
U.S. Environmental Protection	WA	14918	LCP 11
U.S. Environmental Protection	WA	14919	HMM 5
U.S. Environmental Protection	WA	14920	EDI 11
U.S. Environmental Protection	WA	14921	EDI 4
U.S. Environmental Protection	WA	14922	EDI 4
U.S. Environmental Protection	WA	14923	EDI 1
U.S. Environmental Protection	WA	14924	EDI 1
U.S. Environmental Protection	WA	14925	EDI 11
U.S. Environmental Protection	WA	14926	EDI 10

U

Name	From	Comment #	SOC
U.S. Environmental Protection	WA	14927	EDI 9
U.S. Environmental Protection	WA	14928	EDI 5
U.S. Environmental Protection	WA	14929	SEA 2
U.S. Environmental Protection	WA	14930	SEA 2
U.S. Environmental Protection	WA	14931	LCP 11
U.S. Environmental Protection	WA	14932	EDI 7
U.S. Environmental Protection	WA	14933	EDI 10
U.S. Environmental Protection	WA	14934	EDI 10
U.S. Environmental Protection	WA	14935	EDI 10
U.S. Environmental Protection	WA	14936	EDI 10
U.S. Environmental Protection	WA	14937	EDI 10
U.S. Environmental Protection	WA	14938	SEA 2
U.S. Environmental Protection	WA	14939	EDI 10
U.S. Environmental Protection	WA	14940	EDI 10
U.S. Environmental Protection	WA	14941	EDI 10
U.S. Environmental Protection	WA	14942	EDI 10
U.S. Environmental Protection	WA	14943	EDI 10
U.S. Environmental Protection	WA	14944	EDI 10
U.S. Environmental Protection	WA	14945	EDI 10
U.S. Environmental Protection	WA	14946	EDI 10
U.S. Environmental Protection	WA	14947	SEA 2
U.S. Environmental Protection	WA	14948	EDI 10
U.S. Environmental Protection	WA	14949	EDI 10
U.S. Environmental Protection	WA	14950	EDI 10
U.S. Environmental Protection	WA	14951	EDI 10

V

Name	From	Comment #	SOC
Vallone, Cheryl L.	MA	01672	PAL 11
Van Dijk, Courtney	NA	03198	PAL 13
Vandever, Darlene	TX	01622	PAL 11
VanScoy, Ph.D., Holly C.	TX	00863	PAL 12
VanScoy, Ph.D., Holly C.	TX	00863	ECO 8
Voris, Jessie	NJ	02138	PAL 13
Voris, Jessie	NJ	02139	PAL 13
Voris, Jessie	NJ	02139	ECO 5
Vassil, Laurie	MA	03307	PAL 13
vonTish, Lisa	VA	03617	BYC 1
Van Treeck, Lynne	WI	01849	MON 1
VanSchoick, Penny	NY	00986	ECO 1
Vario, Peter	NY	02953	ESE 9
Viinikainen, Suzanne R.	MI	01768	BYC 3
Valtri, Vivian	VT	01744	PAL 11

Table B-2 (continued).

W

Name	From	Comment #	SOC
Watson, Alastair	OK	02590	PAL 13
Wolfe-Ralph, Andrea	MD	02923	PAL 16
Wolfe-Ralph, Andrea	MD	02923	ECO 1
Wittenstein, Andreas	CA	02018	ECO 2
Wittenstein, Andreas	CA	02018	PAL 15
Wittenstein, Andreas	CA	02018	HMM 14
Wogen, Anne	MN	03982	PAL 13
Walden, Ariel	CA	08532	HMM 14
W, B	NY	00189	PAL 15
W, B	NY	00189	ECO 1
Walters, Brandon	SC	03327	PAL 13
Wheeler, Breana	CA	08404	BYC 1
Wood, Carol	NY	08354	PAL 12
Wallace, Carolyn	NC	02175	PAL 13
Wilkerson, Chalice	IL	01541	PAL 11
Wilton, Chloe	NY	02234	PAL 13
WOlf, Christine	WV	03856	PAL 13
WOlf, Christine	WV	03857	BYC 1
WOlf, Christine	WV	03859	MPA 3
WOlf, Christine	WV	03860	HMM 14
Walton, Chuck	TN	08148	PAL 13
Wotton, Claire	NA	01387	PAL 11
Woodruff, Dave	CA	00552	PAL 11
WINGLE, DENNIS	PA	03908	PAL 11
Williams, Dianne	NC	03479	PAL 12
Williams, Dianne	NC	03479	ECO 8
Wilson, Erik	CA	01572	PAL 15
Wilson, Erik	CA	01572	ECO 6
Walker, Evan	CA	02383	PAL 13
Wexler, Genevieve	CA	02706	PAL 11
Wexler, Genevieve	CA	02710	PAL 11
Wexler, Genevieve	CA	02733	PAL 13
Woodyatt, Gina	CA	03854	ECO 8
Woodyatt, Gina	CA	03854	BYC 2
Woodyatt, Gina	CA	03854	PAL 12
Wood, Heather	ID	02827	MAM 1
Wright, Heather	MI	08275	HMM 14
Wright, Heather	MI	08276	BYC 2
Ward, James	OH	03542	PAL 16
Ward, James	OH	03542	ECO 3
Woodman, Jean	IL	02613	RES 1
White, Jeanie	TN	00979	MON 1
wiedner, jeff	VA	02320	PAL 13
Wilson, Jerry	PA	08468	MPA 3
Welch, Joanna	CA	01876	PAL 11

W

Name	From	Comment #	SOC
Warrenchuck, John	NA	14955	LCP 26
Wilson, John F.	WI	02137	PAL 11
Warrenchuk, Jon	NA	03935	LCP 26
Warrenchuk, Jon	AK	13987	MON 1
Weber, K M	MN	00551	PAL 11
Warren, Kenneth S & Helen Sc	TN	08697	ESE 9
Warren, Kenneth S & Helen Sc	TN	08698	ECO 2
Warren, Kenneth S & Helen Sc	TN	08700	PAL 11
Warren, Kenneth S & Helen Sc	TN	08701	PAL 13
Watkins, Kim	NA	08208	MAM 1
Wilkenloh, Leah	CO	02965	MAM 1
Williams, Leslie	CA	02754	HAB 18
Witman, Lydia	NJ	03927	PAL 12
Witman, Lydia	NJ	03927	ECO 8
West, Maria	NY	03470	HMM 14
Waltman, Martha	FL	00160	PAL 12
Wolf, Meghan	FL	02446	ECO 1
Wolf, Meghan	FL	02446	PAL 13
Welch, Michelle	CO	03237	PAL 12
Warren, Mobi	TX	00969	PAL 13
Wittnebert-Tomsky, Patricia	NJ	03744	ECO 1
Walton, PauletteE	TN	08147	PAL 13
Wood, Phyllis J	TN	02800	ESE 9
Wilcox, Richard B.	MI	00937	PAL 12
Wilcox, Richard B.	MI	00937	ECO 1
Welton, Rosa	IL	02417	PAL 13
Weisz, Russell	CA	03852	ECO 8
Weisz, Russell	CA	03852	PAL 1
Wyberg, Sharon and Ken	MN	08650	PAL 13
Wyberg, Sharon and Ken	MN	08651	PAL 9
Wyberg, Sharon and Ken	MN	08651	PAL 13
Wyberg, Sharon and Ken	MN	08653	SEA 9
Wyberg, Sharon and Ken	MN	15047	BYC 1
Wyberg, Sharon and Ken	MN	15050	HMM 14
Wyberg, Sharon and Ken	MN	15051	MPA 3
Wyberg, Sharon and Ken	MN	15052	MPA 3
Wells, Sherry A.	MI	00978	HAB 18
Walker, Susan	TX	01003	PAL 11
Ward, Susan	TX	03145	PAL 13
Wagner, Vickie	MI	02562	PAL 13
Wagner, Vickie	MI	02564	HAB 19
Welch, Victoria	WA	01677	ECO 8
Welch, Victoria	WA	01677	PAL 12

Table B-2 (continued).

Y

Name	From	Comment #	SOC
Yerkovich, Annette	CA	03565	PAL 11
Young, Jo Ellen	CA	01868	PAL 13
Yamashita, Krista	CA	00212	MPA 1
Young, Rebecca	CA	03279	PAL 11

Z

Name	From	Comment #	SOC
Zukoski, E.B.	CO	02450	HAB 18
Zukoski, E.B.	CO	02451	LCP 10
Zorn, Fran	MI	00394	MPA 1
Zane, Hali	CA	03055	ECO 1
Zane, Hali	CA	03055	PAL 16
Zamboni, Jean	MN	01532	PAL 11
Zahakos, Jim	MA	08155	PAL 13
Zahakos, Jim	MA	08156	PAL 16
Zaborovsky, Julie	TX	01243	PAL 13
Zacharof, M. Richard	AK	15737	AKN 1

Attachment C

Public Comments on the Preliminary Preferred Alternative Policy Objectives and Bookends

Excerpts from Comment Issue Statements

(Does not include the MCA or AOP Joint Submissions Included as Attachments D and E)

Preferred Alternative Statement of Concern (PAL) 5

Specific changes to the Preliminary Preferred Alternative policy and objectives.

Alaska Groundfish Data Bank

Excerpts from Comment Number - 13990

Under Goals and Objectives change the category heading entitled "Management, Reduce and Avoid Bycatch and Incidental Catch" to" Manage incidental catch and reduce bycatch". The change in the category heading is that it is more appropriate to manage incidental catch rather than always reducing incidental catch. In objective #15, delete the reference to "incidental catch".

Incidental catch can be an entirely different situation that bycatch. In some cases, multi-species fishing with incidental catch can have positive benefits such as improved retention/ improved utilization and economic efficiency. Many of the incidental catch species - species that are keep on bycatch have large economic value. The only way that these species are harvested is as incidental catch in a different fish target. Because TAC for these species are low no directed fishery is allowed so that there is enough TAC to go around to support all the directed fish harvested. The goal should be to manage these species to reach TAC to achieve the highest economic benefit yet manage harvests so that the TAC is not exceeded. There is no rational reason to reduce incidental catch. In the Bycatch and Incidental Catch restrictions -- prohibited species catch limits, both the right and left bookends represent significant changes from the present managment program, particularly regarding establishing a salmon cap in the GOA. It seems appropriate to place the significant change in the right hand bookend rather than in both. Therefore the following changes in this section are proposed: Delete FMP PPA.1 "GOA: Indentify salmon savings areas and establish PSC limits to manage" Revise FMP PPA.2 PSC limits to GOA: For salmon: Establish PSC limits on salmon (for example, NTE a 25,000 fish cap on chinook and 20,500 fish cap for other salmon), identify and establish salmon savings areas to manage.

For crab and herring: add a new bookend that states: establish PSC limits on crab and herring based on biomass or other fishery data that would trigger in-season closure areas. Presently the Council is working to address salmon bycatch.

Southwest Alaska Municipal Conference

Excerpts from Comment Number - 14885

The reference to "incidental catch" should be removed from Objective #15. The amended objective would read as follows, "Develop incentive programs for bycatch reduction including the development of mechanisms to facilitate the function of bycatch pools, VBAs or other bycatch incentive systems."

The phrase "of managed species" should be added to Objective #28.
…the inclusion of "managed species" provides consistency between the SEIS and implementing law.

It should be noted that the actual future management measures utilized could, conceivably, be those that are within the bounds of all the alternatives simultaneously.

Audubon Alaska and Pacific Seabird Group - Joint Submission

Excerpts from Comment Number - 15748

At a minimum, we suggest that the PPA commit to the following measures, some of which are actually ongoing or would cost little.
1)Commit to management policies consistent with all Federal laws that mandate seabird protection, including not only Endangered Species Act, but also Migratory Bird Treaty Act and Executive Order 13186 of January 10, 2001 ("Responsibilities of Federal Agencies to Protect Migratory Birds).
2) Commit to fixing the problem with observers' reports from trawlers, which has prevented useful estimation of the mean incidental take of seabirds in trawl gear. (page 3.7-10).
3) Improve observer training for identification of dead seabirds. In addition, collect documentation of birds that observers cannot identify (including, apparently, all auks)
4) Support and cooperate with USFWS on populations, trends, foraging behavior, and food requirements of selected seabird species of concern. It is not necessary to commit to studying all species as proposed in Alt 3.
5) Begin incorporating "thresholds of mortality" for incidental take of seabirds, for those species where it may now be feasible.

The Ocean Conservancy – Joe Moore

Comment Number - 3676

The Programmatic SEIS should commit the agency to identifying, designating AND PROTECTING EFH and HAPC from the adverse effects of fishing gear. The PSEIS stops short of the law and practical efficacy if it fails to commit the agency to protecting areas identified and designated EFH and HAPC.

Preferred Alternative Statement of Concern (PAL) 6

Specific changes to the Preliminary Preferred Alternative bookends.

Southwest Alaska Municipal Conference

Excerpts from Comment Number - 14886

In the TAC-Setting Process: Ecosystem Indicators: bookend for PPA.2, revise the existing bookend by adding "Use F60 for rockfish as a proxy for analysis."

The appropriate harvest strategy will recognize differences in life history, range, stock structure, productivity, and resiliency of each species of rockfish.

Excerpts from Comment Number - 14887

In the MPAs and EFH: EFH & HAPC bookend for PPA.2, revise the existing bookend to read: "Establish Aleutian Island management area for coral/live bottom habitats."

This change is suggested in order to differentiate between management to reduce adverse impacts of fishing on a habitat and complete protection of a habitat. Change several bookends related to PSC: Delete the following bookends:

- Under PPA.1 delete the PSC limit bookend "GOA: Identify salmon savings areas and establish PSC limits to manage."
- Delete the PPA.2 bookend "GOA: Establish PSC limits on salmon (for example, NTE a 25,000 fish cap on chinook and 20,500 fish cap for other salmon), establish PSC limits on crab and herring based on biomass or other fishery data."

Add the following bookends to PPA.2:

- GOA: Identify salmon savings areas and establish PSC limits to manage.
- GOA: Establish PSC limits on salmon (for example, NTE a 25,000 fish cap on chinook and a 20,500 fish cap for other salmon), identify and establish salmon savings areas to manage.
- GOA: Establish PSC limits on crab and herring based on biomass or other fishery data that would trigger inseason closure areas.

Excerpts from Comment Number – 14888
Revise several bookends related to ranges of PSC limits:

- In PPA.1, delete "for those PSC species where annual populations exist, esplore a mortality rate based approach to setting limits."
- In PPA.2, revise "GOA: consider reducing all PSC by 0-10%." to "GOA: Consider reducing halibut PSC by up to 10%."
- In PPA.2, revise "BSAI/GOA: for those PSC species where annual population estimates exist, explore a mortality rate-based

Excerpts from Comment Number - 14889

In PPA.2, Gear Restrictions and Allocations: Allocations, add the following bookend: "GOA: Pacific cod allocated by gear in GOA."

Excerpts from Comment Number - 14890

Delete the bookend "Extend to 100% >60'; CDQ & AFA to stay the same as Alt. 1." in coverage and Monitoring: PPA.2.

Excerpts from Comment Number - 14891

The overcapacity management measure presented under the PPA to promote sustainable fisheries and communities should be modified to: "Maintain existing restricted access programs while developing rationalization that maximizes benefits to rural communities."

Audubon Alaska and Pacific Seabird Group - Joint Submission

Excerpts from Comment Number - 15743

Chapter 2 Alternatives: In section 2.6.9.2, the PPA, Goal 21 (page 2-64) says, "Continue to cooperate with USFWS to protect ESA-listed species (modified alt 1b)." Yet this statement is identical to Goal 5 of Alt 2 (More aggressive management policy; page 2-50). The corresponding goals for Alt 3 (Goals 13-14, page 2-52) are "Continue to cooperate with USFWS to protect ESA-listed and other seabird species" (our emphasis), and "Initiate joint research program with USFWS to evaluate current population estimates for all seabird species that interact with the groundfish fisheries.

Bycatch Statements of Concern

Suggested Changes to the Preliminary Preferred Alternative

Trustees for Alaska

Excerpts from Comment Number – 14980

The incorrect policy objective is carried into the specific analysis of alternatives. Each FMP bookend is primarily evaluated in terms of bycatch mortality reduction, rather than bycatch minimization. Occasionally, brief references to bycatch minimization are found within the report and environmental analyses of each bookend, however the focus remains on the extent of bycatch mortality. Therefore, the DPSEIS does not fully evaluate the primary goal of the MSA bycatch provisions-reduction in the amount of bycatch. The limited information regarding each FMP bookend's contribution to bycatch minimization does not provide a clear picture. And, as a NEPA matter, this lack of information makes it impossible for NMFS and the public to fully evaluate each bookend.

Excerpts from Comment Number – 14988

TAC limits are not an adequate management tool for reducing bycatch. As mentioned, the principle requirement of the MSA is to minimize the amount of by catch. As described above, there really is no effort to minimize bycatch under the current regime. Instead, it is simply being accounted for in the T AC limits. In other words, bycatch is being transferred out of the bycatch category and into the target catch category. This reflects an approach designed to get around the statutory requirement, rather than comply with it.

Excerpts from Comment Number – 14990

The TAC setting approach to bycatch minimization also ignores non-commercial species for which there are no individual TACs. NMFS manages non-target species under the status quo by lumping them all together as "other species." NMFS has implemented unsatisfactory reporting requirements for these species, which are explained below. The system for reducing bycatch of species in this category is insufficient as well.

Excerpts from Comment Number – 14997

NMFS suggests only three additional measures to the status quo management plan for purposes of bycatch minimization under the PPA. The first is to develop incentive programs for the reduction of bycatch. As mentioned, these incentive programs are never explained; therefore it is impossible to determine exactly what this management tool would add. However, these measures may add very little judging by the assessment given an incentive tool, which is already in place-IFQs. It is suggested that IFQs may not be effective in reducing the amount of bycatch. But again, there is no explanation for the statement.

Eric Malmborg

Excerpts from Comment Number – 14046

Please consider new bycatch reduction measures pioneered by Manomet Center for Conservation Sciences, Manomet, MA.

Habitat Statements of Concern

Suggested Changes to the Preliminary Preferred Alternative

Geoff Shester – Stanford University

Excerpts from Comment Number – 14004

The draft PSEIS currently lacks a major policy approach for minimizing adverse impacts of fishing on essential fish habitat. This is an "open area" approach where bottom trawling is limited only to historically fished areas with higher relative CPUE of target species and lower relative CPUE of bycatch of living habitats. This approach is embodied in the Aleutian Islands component of Alternative 5B in the Preliminary Draft EFH EIS. All the current alternatives in the PSEIS contain the same spatial management approach which is to leave all areas open to bottom trawling except for closed areas which differ in size and location throughout the alternatives (with the exception of 4.2 of course). The open area approach is a completely distinct policy approach that strongly contrasts the "closed area" approach used in all four of the current alternatives. To make an informed decision about the best policy approach to minimize adverse impacts of fishing on EFH to the extent practicable, the public and decision-makers need to see an analysis of the "open area" approach, set up in a way to minimize living habitat bycatch in the most cost effective way so that negative socioeconomic impacts are minimized. Also, what are different ways of defining the phrase "to the extent practicable"? What are different methodologies for evaluating whether management measures are practicable? How does the agency currently define this phrase and what is the rationale? How would the various alternatives differ in their definition of "to the extent practicable" and their methods of evaluating whether management measures are "practicable"? The public and decision-makers would also benefit from an analysis of other potential ways to minimize adverse impacts on EFH, such as species-specific bycatch caps and various forms of effort reduction (TAC reductions, trip limits, and haul limits). An analysis of bycatch caps policies should include discussion of monitoring techniques, potential incentives, penalties, and consequences of exceeding a cap, the scale that bycatch caps should be applied, and the effects of setting bycatch caps by vessel, sector, gear type, or fishery. The use of fishing cooperatives as a mechanism for successful implementation of

bycatch caps should also be explored. As recommended by the National Academy of Sciences 2002 report on the Effects of Trawling and Dredging on Seafloor Habitat, various combinations of these policy tools should also be explored.

Excerpts from Comment Number – 14001

Based on what is currently known about the adverse effects of fishing on habitat, the Preliminary Preferred Alternative is insufficient to sustain the continued productivity of Alaska's vibrant fisheries and does not embody a precautionary approach to fishery management. Simply considering additional measures is not sufficient to protect the habitat that produces our fish. The principles and objectives contained in the EFH EIS Alternative 5B as applied to the Aleutian Islands appear to be the most cost effective policy approach to minimize the adverse effects of fishing on EFH to the extent practicable. These principles and objectives should be the preferred alternative for EFH in this PSEIS. I fully support the concept of an Aleutian Islands Special Management Area. Considering the ecological and economic importance of the ocean resources of the Aleutians, the area should be managed accordingly. There is a strong international consensus among scientists that the Aleutian Islands contain the most diverse and magnificent deep sea coral and sponge ecosystems discovered in the world to date. Areas of such high biological significance should be managed with a higher level of precaution and in a more risk-averse fashion than other areas in the EEZ. An Aleutian Islands Special Management Area would be an opportunity to develop a model management regime for areas of high biological significance and the PSEIS should consider appropriate additional management and conservation measures for this area

Harvest Management Statements of Concern

Suggested Changes to the Preliminary Preferred Alternative

Gary Gamache

Excerpts from Comment Number – 14039

Moratorium for 2 fishing seasons on all ground species till further assessment on stocks can be correctly identified for damage or overfishing.

Seabirds Statements of Concern

Suggested Changes to the Preliminary Preferred Alternative

Cathy Harris

Excerpts from Comment Number – 15295

With the exception of observer program data collection, research to fill information gaps (i.e., seabird population levels, life history, etc.) should be left to the USFWS. The NMFS should reserve its scarce resources for research to determine how to reduce incidental seabird takes in the fisheries under its jurisdiction. The costs of extensive research may be disproportionate to the value of data collected, especially if avoidance measures drastically reduce incidental take.

According to the Fisheries Service, the analysis of the PSEIS Preliminary Preferred Altemative's impacts on bycatch, removal of prey species, spatial/temporal concentration of fishery catches on prey, and vessel disturbance indicated that the PPA "increased protection to seabirds and marine mammals relative to the comparative baseline." PSEIS IV, 4.10-84. However, specific improvements and additional conservation measures under either of the PP A "bookend" FMPs are unclear.

Audubon Alaska and Pacific Seabird Group - Joint Submission

Excerpts from Comment Number – 15742

It is not clear what the PPA proposes with regard to seabirds; this needs to be clarified before the PPA can be evaluated usefully by the public. In various sections of the document, the PPA's proposal for seabirds ranges from reducing their protection below current level, to a major enhancement of research on seabird populations.

Excerpts from Comment Number – 15743

Chapter 2 Alternatives: In section 2.6.9.2, the PPA, Goal 21 (page 2-64) says, "Continue to cooperate with USFWS to protect ESA-listed species (modified alt 1b)." Yet this statement is identical to Goal 5 of Alt 2 (More aggressive management policy; page 2-50). The corresponding goals for Alt 3 (Goals 13-14, page 2-52) are "Continue to cooperate with USFWS to protect ESA-listed and other seabird species" (our emphasis), and "Initiate joint research program with USFWS to evaluate current population estimates for all seabird species that interact with the groundfish fisheries.

Excerpts from Comment Number – 15744

The Executive Summary text does not mention seabirds in the PPA text. However, Table ES-1 (Comparative summary of alternative policy statements) gives policy statement for seabirds in the PPA that is identical to the one that it gives for Alt 1 "Protect ESA-listed and other seabird species.

Excerpts from Comment Number – 15745

Chapter 4, Environmental Consequences: Section 4.9.7, Seabirds Preferred Alternative Analysis (pages 4.9-256 to 2.9-274) gives seabird protection measures similar to those in Alt 1: continuation and improvement of deterrent devices on longlines, and continued research on collisions of seabirds with the "third wire" of trawl gear. In addition, the PPA appears to add one element beyond the Alt 1 measures, "Potential new mitigation measures for the trawl fleet" (page 4.9-262). However, there is no proposal in this section to do research on population estimation, as is proposed for Alt 3 and also (in chapter 2) for the PPA.

Excerpts from Comment Number – 15748

At a minimum, we suggest that the PPA commit to the following measures, some of which are actually ongoing or would cost little.

1) Commit to management policies consistent with all Federal laws that mandate seabird protection, including not only Endangered Species Act, but also Migratory Bird Treaty Act and Executive Order 13186 of January 10, 2001 ("Responsibilities of Federal Agencies to Protect Migratory Birds).
2) Commit to fixing the problem with observers' reports from trawlers, which has prevented useful estimation of the mean incidental take of seabirds in trawl gear. (page 3.7-10).
3) Improve observer training for identification of dead seabirds. In addition, collect documentation of birds that observers cannot identify (including, apparently, all auks)
4) Support and cooperate with USFWS on populations, trends, foraging behavior, and food requirements of selected seabird species of concern. It is not necessary to commit to studying all species as proposed in Alt 3.
5) Begin incorporating "thresholds of mortality" for incidental take of seabirds, for those species where it may now be feasible.

Attachment D

Excerpts from the
Marine Conservation Alliance

Suggested Changes to the
Preliminary Preferred Alternative

Submitted By:

Alyeska Seafoods
Alaska Groundfish Data Bank
Alaska Leader Fisheries
Alaska Pacific Seafoods
Aleutian Islands Brown Crab Coalition
Aleutian Pribilof Island Community Development Council
At-Sea Processors Association
Bristol Bay Economic Development Corp
Central Bering Sea Fisherman's Association
City of Unalaska
Coastal Villages Region Fund
Groundfish Forum
High Seas Catchers Cooperative
Icicle Seafoods
McCarty and Associates
Mid-Water Trawlers Cooperative
Mothership Group
North Pacific Scallop Cooperative
Norton Sound Economic Development Corporation
Pacific Seafood Processors Association
Prowler Fisheries
Seafood Cold Storage Association
Southwest Alaska Municipal Conference
Trident Seafoods Corp
United Catcher Boats
Western Alaska Fisheries, Inc
Yukon Delta Fisheries Development Association

V. The MCA Proposes Changes to the PSEIS Preliminary Preferred Alternative

The MCA supports the PPA but, with the intent of further development of a rational and reasonable PPA, proposes the following changes and additions to the PPA in the: 1) management approach; 2) goals and objectives; and 3) bookends. The proposed changes include existing language in italics and the proposed additions in bold upper case, as well as brief rationales for the suggested changes.

Most of the suggested changes are for clarification purposes and do not represent substantive changes in the intent of the PPA. The need for some of these clarifications did not become evident until the Council motion of June 2003 that adopted a PPA. For example, many of the proposed changes in the bookends are to provide a range where a range did not exist in the Council motion, i.e., where both the right hand and left hand bookend are identical. The proposed changes in the goals and objectives are primarily to correct possible misinterpretations and prevent unintended consequences resulting from the existing objective. Finally, MCA proposes a change in the management approach that is consistent with MSA, EFH, and previous Council actions.

A. Preliminary Preferred Alternative (PPA): Management Approach

Recommendation: Modify the second paragraph of the Management Approach as follows (suggested new wording in bold):

"As part of its policy, the Council intends to consider and adopt as appropriate measures that accelerate the Council's precautionary, adaptive management through community or rights-based management principles that protected managed species from overfishing, and where appropriate and practicable, increased habitat and protection and bycatch constraints. ***UNDER THIS MANAGEMENT STRATEGY, FISHERY IMPACTS TO THE ENVIRONMENT WILL BE MITIGATED, TO THE EXTENT PRACTICABLE, IF SCIENTIFIC EVIDENCE INDICATES A FISHERY IS ADVERSELY IMPACTING THE PRODUCTIVITY OF MANAGED SPECIES****. All management measures will be based on the best scientific information available. This policy objective seeks to provide sound conservation of the living marine resources; provide socially and economically viable fisheries and fishing communities; minimize human-caused threats to protected species; maintain a healthy marine resource habitat; and incorporate ecosystem-based considerations into management considerations."*

Rationale: The intent of the proposed sentence is to clarify and present a general management approach concerning the mitigation of fishery impacts on habitat. This is a subject of great interest to many sectors of the public and it is appropriate to address it in the management approach rather than omit it.

This proposed addition to the management approach suggests before the Council considers mitigation measures, there should be scientific evidence that there is, in fact, a fishery impact and therefore a need for consideration of mitigation measures. If there is a fishery impact, the Council will examine the scientific evidence to see if the fishery impact is adverse to the productivity of managed species. Then, if the fishery impact is found to be adverse to the productivity of managed species, the Council will examine the proposed mitigation measures for efficacy and practicability. Finally, all management measures will be based on the best scientific evidence available. Simply put, mitigation measures should address real impacts in both a scientific and practical manner.

The proposed language is consistent with NS requirements for fishery management plans, specifically NS # 1 *("...achieving, on a continuing basis, the optimum yield from each fishery..."),* and NS # 2 *("…conservation and management measures shall be based on the best scientific information available.").*

The proposed addition is consistent with the sections of the MSA requiring fishery management plans to *"...minimize to the extent practicable adverse effects on such habitat caused by fishing..."* (MSA 303(a)(7)) while at the same time providing for optimum and sustained yield (MSA 303(a)(3)).

The proposed sentence is consistent with the other elements of the PPA, including management approach, goals/objectives, and bookends, as well as the Council problem statement regarding EFH, specifically:

1. The proposed sentence is consistent with the present text of the PPA management approach that includes a balanced approach to *"...sustainable fishery management including protection of the long-term health of the resource and the optimization of yield."*

2. The proposed sentence is consistent with management Objectives # 5, 7, 13, 24, 25, and 28. The proposed sentence does not preclude developing a MPA policy in conjunction with national and state committees (Objective 26). In particular, Objective 24 references habitat protection measures for managed species.

3. The proposed sentence is consistent with the EFH & HAPC PPA.2 bookend: *"Determine extent of adverse effects from fishing, if any. Implement mitigation measures, if necessary."*

4. The proposed sentence is consistent with the Council problem statement on EFH which includes "…the Council intends to take action in compliance with the requirements of MSA to protect the productivity of FMP species by considering additional measures to reduce adverse effects of fishing activities on habitat essential to managed species," and, *"Consider implementation of additional management measures to mitigate, to the extent practicable, identified adverse impacts of fishing on EFH. The intent of the Council is for those FMP species where data are available, habitat measures should be applied to minimize the effects of fishing on habitat essential to continued productivity of the managed species* (emphasis added)*."*

B. Goals and Objectives

Recommendation: Change the category heading entitled *"Manage, Reduce and Avoid Bycatch and Incidental Catch"* to *"**MANAGE INCIDENTAL CATCH AND REDUCE BYCATCH.**"*

Rationale: The change in the category heading (and in Objective #15 below) is that it is more appropriate to manage incidental catch rather than always reduce incidental catch. In many cases, it is not appropriate to mandate reductions in incidental catch. A more detailed explanation can be found in the rationale below for the same recommended change in Objective #15.

Recommendation: In Objective #15, delete the reference to "incidental catch."

The objective presently reads *"Develop incentive programs for incidental and bycatch reduction including the development of mechanisms to facilitate the function of bycatch pools, VBAs, or other bycatch incentive systems."* By deleting the words "incidental and," the amended objective would read: *"**DEVELOP***

INCENTIVE PROGRAMS FOR BYCATCH REDUCTION INCLUDING THE DEVELOPMENT OF MECHANISMS TO FACILITATE THE FUNCTION OF BYCATCH POOLS, VBAS, OR OTHER BYCATCH INCENTIVE SYSTEMS.*"***

Rationale: NS # 9 calls for minimization of bycatch, a principle which MCA supports. However, incidental catch can be an entirely different situation than bycatch. In some cases, multi-species fishing with incidental catch can have positive benefits such as improved retention/improved utilization and economic efficiency. In that regard, incidental catch may need to be managed, but not necessarily reduced.

For example, the present Individual Fishery Quota (IFQ) program for halibut and sablefish has allowed fishermen to retain both of these species while longlining, if they have sufficient Quota Shares (QS) for both species. The predominant species in the catch would be the directed target, and the other species would be incidental catch. Allowing retention of incidental catch has greatly reduced discards in these two fisheries, while also allowing increased economic efficiency. Prior to the IFQ system, directed fishing was allowed only for a single species (halibut or sablefish) in distinct seasons with the incidental catch of the other species being discarded. Now, under IFQs, both species can be fished simultaneously, provided the vessel had adequate QS for both species. Clearly, in this case, retention of incidental catch is the preferred solution rather than the reduction of incidental catch.

Another example would be the BSAI flatfish fisheries, which are, by their nature, multi-species operations harvesting cod, yellowfin sole, rock sole, flathead sole and other flatfish together. These species are all utilized, which renders the fishery economically viable. It is often difficult to assign a target to a particular catch, but it is usually done using the predominant species in that particular haul. By definition, everything not the target species is considered incidental catch, even though it may in the aggregate be more than the target itself. Incidental catch is an essential part of a multi-species fishery and should not be confused with bycatch. Incidental catch is valuable, utilized fish; bycatch is discarded fish. In fact, bycatch of non-prohibited species can be reduced by utilizing it, which converts it to incidental catch. There is no reason to necessarily reduce incidental catch in all cases, but management of the incidental catch is appropriate.

The Ad Hoc Committee on Species Complexes and Non-Target Management has recognized the complexity of defining targets, incidental catch, and bycatch. The committee has proposed splitting catch into two categories: Target and Non-target. The criteria for the target category included, among other things, any species with economic value (i.e., market presently exists) as well as any species desired by harvesters. Therefore the target category would include targets as well as incidental catch with economic value (i.e., has a market and is in demand by harvesters).

In recognition that the goal is to reduce bycatch and manage incidental catch, the proposed revisions change the wording in both the heading and in Objective # 15. This approach to manage incidental catch is consistent with Objective #14 (*"Continue and improve present incidental catch and bycatch management program.")* and Objective #18 (*"Continue to manage incidental catch and bycatch…"*).

Recommendation: In Objective # 28, add the phrase "***OF MANAGED SPECIES.***"

The objective presently states, "*Develop goals, objectives, and criteria to evaluate the efficacy and suitable design of marine protected areas and no-take marine reserves as tools to maintain abundance, diversity, and productivity. Implement MPAs if and where appropriate."*

The amended objective would read: "*Develop goals, objectives, and criteria to evaluate the efficacy and suitable design of marine protected areas and no-take marine reserves as tools to maintain abundance, diversity, and productivity* ***OF MANAGED SPECIES****. Implement MPAs if and where appropriate."*

Rationale: The reasoning here is similar to the rationale provided for the proposed change in the management approach and should be incorporated by reference. The Council problem statement on EFH includes "*...the Council intends to take action in compliance with the requirements of MSA to protect the productivity of FMP species by considering additional measures to reduce adverse effects of fishing activities on habitat essential to managed species* (emphasis added)*."*

The MSA calls for the Council to identify and describe EFH as it applies to managed species. Additionally, guidelines were provided to the Councils to identify HAPC that are of particular ecological importance to the long-term sustainability of species managed under a FMP. Since the MSA (including NS, EFH, and HAPCs) refers to FMPs and managed species, the suggested addition of the phrase "managed species" provides the same consistency in direction for the development of MPAs and reserves.

Recommendation: In Objective #30, add the phrase *"AS NECESSARY."*

The objective presently reads: "*Maintain LLP program and further decrease excess fishing capacity and overcapitalization by eliminating latent licenses and extending programs such as community or rights-based management to some or all groundfish fisheries."*

The amended objective would then be "*Maintain LLP program* ***AS NECESSARY*** *and further decrease excess fishing capacity and overcapitalization by eliminating latent licenses and extending programs such as community or rights-based management to some or all groundfish fisheries."*

Rationale: The word "maintain" implies making no changes to the existing LLP program. While this program has succeeded in decreasing excess fishing capacity, the goal of maintaining the program as it presently exists may conflict with the goal of further rationalization. It should be recognized that rationalization in fisheries might go beyond the present LLP program. For example, in the American Fisheries Act (AFA) program there were additional stringent requirements in addition to the LLP program. Therefore, the phrase "as necessary" is suggested in order to keep the present LLP program in place with vessel size, area, and gear endorsements, while recognizing the program could be modified or superceded by additional future rationalization efforts.

C. Bookends

Recommendation: In TAC-Setting Process: Ecosystem Indicators: FMP PPA.2, revise the existing bookend: *"Use F_{60} for rockfish as a proxy for analysis."*

The proposed revised bookend would read: *"****DEVELOP APPROPRIATE HARVEST STRATEGIES FOR ROCKFISH****. Use F_{60} for rockfish as a proxy for analysis*."

Rationale: This bookend needs to clarify the intent concerning the development of harvest strategies for rockfish. As presently written, it could be interpreted that F_{60} is the only harvest strategy under consideration for all rockfish. However, an appropriate harvest strategy will not likely be a one-size-fits-all approach for all rockfish, but will vary by species. The appropriate harvest strategy will recognize differences in life history, range, stock structure, productivity, and resiliency of each species of rockfish.

However, in order to analyze this bookend, a value must be selected, hence the inclusion of F_{60} as a proxy for analysis. The range for a rockfish harvest strategy is therefore between the Current Harvest Strategy (CHS) (F_{40}) and F_{60}. The proxy value should not be construed as an endorsement of F_{60} over all other harvest strategies but rather a value to be used for analysis until appropriate harvest strategies can be developed by species. The appropriate harvest strategy could prove to be the CHS.

The proxy value of F_{60} comes largely from two sources: the review of the NPFMC CHS (F_{40} review or Goodman, *et al.*, 2002); and the lower mortality rates (F_{50-60}) being considered for West Coast rockfish. However, presentations at the NPFMC Science and Statistical Committee (Spring 2003), the Plan Team (September 2003), and the Council (October 2003) suggest harvest strategies for rockfish may well be some other value than F_{60}.

A recent draft paper at the Plan Team (GOA Rockfish Summary, Draft 03, September 2003) stated, "*F_{40} Review: The legitimacy of the $F_{40\ harvest}$ strategy has recently been called "defensible" for most groundfish stocks, with the exception being primarily the rockfish (Goodman, et al., 2002). Lower fishing mortality rates such as F_{50-60} have been suggested for West Coast rockfish in recent literature (Dorn, 2002; Hilborn, et al., 2002; and Ianelli, 2002). We do not feel these papers apply particularly well to GOA rockfish, which likely are more productive and more resilient than West Coast stocks (Dorn 2002). Dorn (2002) suggests that Gulf of Alaska fishers are losing 12% yield because F_{40} is more conservative than MSY. Therefore we recommend continuing to harvest at F_{40} unless new information comes to light to suggest otherwise."*

Reviewers of Goodman *et al.* (2002) noted the overall acceptance of the CHS along with the caveat on rockfish, but reviewers also concluded:

1. The report found no evidence of presently overfished rockfish species in the BSAI/GOA;

2. The only overfished rockfish species in past history in the BSAI/GOA is Pacific ocean perch and that species has rebuilt under the CHS;

3. Most of the studies cited in the report did not include Alaska rockfish species. However, studies on Alaska rockfish species were available; and

4. The report may have underestimated the relationships between life history, resiliency, and spawner per recruit (SPR).

The proposed language in this bookend would clarify that appropriate harvest strategies will be developed based on the best scientific information available on a species by species basis. For purposes of analysis, in PPA.2, F_{60} will be used as a proxy, however F_{60} should not necessarily be misconstrued as the ultimate management objective.

Recommendation: In MPAs and EFH: EFH & HAPC: FMP PPA.2, revise the existing bookend: *"Establish Aleutian Island management area to protect coral/live habitats."*

The proposed revised bookend would read: *"**ESTABLISH ALEUTIAN ISLAND MANAGEMENT AREA FOR CORAL/LIVE BOTTOM HABITATS**."*

Rationale: This change is suggested in order to differentiate between management to reduce adverse impacts of fishing on a habitat and complete protection of a habitat. The word "protect" may be misinterpreted as an absolute mandate for 100% protection of all corals, which is outside the scope of EFH and HAPCs.

Recommendation: In Bycatch and Incidental Catch Restrictions: Prohibited Species Catch Limits, both the right and left bookends represent significant changes from the present management program, particularly regarding establishing a salmon cap in the GOA. It seems appropriate to place the significant change in the right hand bookend rather than in both. Therefore the following changes in this section are proposed:

1. FMP PPA.1: PSC Limits

a.) Delete *"GOA: Identify salmon savings areas and establish PSC limits to manage."* Move to FMP PPA.2 and revise.

Rationale: Suggested language is below under FMP PPA.2.

b.) Delete *"GOA: Establish PSC limits on salmon (for example, NTE* [Not To Exceed] *a 25,000 fish cap for chinook and a 20,500 fish cap for other salmon), establish PSC limits on crab and herring based on biomass or other fishery data."* **Move to FMP PPA.2 and revise** (suggested language is below under FMP PPA.2).

Rationale: Presently, the establishment of a cap is located in both the left hand (PPA.1) and the right hand bookend (PPA.2). We propose the cap and savings issue be deleted from PPA.1 and retained, with revisions, in PPA.2. This will provide a range of management actions that is not presently found in the existing bookends.

The establishment of a cap needs to be directly linked to the establishment of a savings area. This is essential in order to have the opportunity and flexibility to manage fisheries (and area) in order to stay under the cap. Otherwise, the cap is the only management mechanism and could possibly result in complete closures of fisheries when a "hot spot" closure may be more appropriate.

The revised language, including establishment of savings areas, is consistent with the "Closures" bookend presently found in PPA.2 (Bycatch and Incidental Catch Restrictions). That PPA.2 bookend states "*Develop appropriate inseason closure areas in GOA to address bycatch of halibut, salmon, and/or crab when PSC cap is reached for that species."* The new revised language (GOA salmon cap and savings area) is therefore consistent with this bookend in PPA.2, i.e. establishing inseason closure areas.

c.) Delete *"For those PSC species where annual populations exist, explore a mortality rate based approach to setting limits."*

Rationale: Presently, this item is found in both the left hand (PPA.1) and right hand (PPA.2) bookends. It is suggested that this item be deleted from the left hand bookend and retaining this item in the right hand bookend with revised wording (suggested language is below under FMP PPA.2).

2. FMP PPA.2: PSC Limits

a) Revise *"GOA: Establish PSC limits on salmon (for example, NTE a 25,000 fish cap on chinook and 20,500 fish cap for other salmon), establish PSC limits on crab and herring based on biomass or other fishery data."*

Suggested revised language: *" - GOA: Establish PSC limits on salmon (for example, NTE a 25,000 fish cap on chinook and a 20,500 fish cap for other salmon),* ***IDENTIFY AND ESTABLISH SALMON SAVINGS AREAS TO MANAGE****."*

And a new:

" – GOA: ESTABLISH PSC LIMITS ON CRAB AND HERRING BASED ON BIOMASS OR OTHER FISHERY DATA THAT WOULD TRIGGER INSEASON CLOSURE AREAS."

Rationale: This bookend item should be revised in PPA.2 and the establishment of a cap should be linked with a savings area. For clarity, salmon has been separated from crab and herring, as the savings areas applies to salmon. Similarly, for crab and herring, the establishment of PSC caps should also establish inseason closure areas. This is consistent with the "Closure" bookend in PPA.2, which calls for inseason closure areas for crab, salmon, and halibut.

b) Revise the existing item in this bookend: *"GOA: consider reducing all PSC by 0-10%."*

Suggested revised language: *" – GOA: Consider reducing* ***HALIBUT*** *PSC by 0-10%."*

Rationale: As the limits for salmon are established in this bookend (PPA.2), it is inappropriate to consider reducing those same limits at the same juncture. However, it may be appropriate to consider reduction of the halibut PSC limits in the right hand (PPA.2) bookend, consistent with the approach for halibut PSC in the BSAI.

c) Revise the existing item in this bookend: *"BSAI/GOA: For those PSC species where annual population estimates exist, explore a mortality rate-based approach to setting limits.*

Suggested revised language: *" – BSAI/GOA: For those PSC species where annual populations estimates exist, explore a mortality rate-based* ***AND ABUNDANCE-BASED*** *approach to setting limits."*

Rationale: This item is found in both bookends (PPA.1 and PPA.2). The Recommendation is to include this in PPA.2 and delete from PPA.1 in order to provide a range of actions. The modification in the language is to clarify that whatever is meant by a rate-based mortality approach, that it includes an abundance-based approach.

Recommendation: Gear Restrictions and Allocations: Allocations: FMP PPA.2: Add the following item in this bookend: *" –* ***GOA: PACIFIC COD ALLOCATED BY GEAR IN GOA****."*

Rationale: There are presently four items in the left hand bookend (PPA.1) but only one in the right hand bookend (PPA.2) which does not provide a great deal of range. In the left hand bookend, Pacific cod and sablefish are allocated in BSAI by gear and GOA sablefish is allocated by gear type in the GOA. The only item in PPA.2 is to consider pot gear for sablefish in the GOA. What seems to be missing in the right hand bookend (PPA.2) is that GOA Pacific cod be allocated by gear type as well (similar to the BSAI). This pending allocation may occur as part of GOA rationalization. Therefore, it seems appropriate to include GOA Pacific cod allocation by gear in PPA.2.

Recommendation: Observer Program: Coverage and Monitoring: FMP PPA.2: Delete the existing topic:*"- Extend to 100% >60'; CDQ & AFA to stay the same as Alt. 1."*

Rationale: This bookend appears to conflict with recommendations from the Observer Committee (OC) and the adjacent bookend which states, "*Expand/modify observer coverage based on scientific data and compliance needs (applies to all vessels: <60' and >=60').*"

The suggested deletion eliminates what would seem to predetermine what observer coverage should be prior to determination of scientific data and compliance needs. This bookend also conflicts with the recommendations of the OC, which has outlined many decision points ahead, including which vessels to include in the program. Priority was given to all groundfish catcher vessels and catcher processors in the GOA (>60' and <60'). The OC also recommended two suboptions for consideration: 1) include all BSAI groundfish vessels >60' in the jig, pot, trawl, and longline fisheries; and 2) include all halibut vessels (GOA and/or BSAI). However, priority was given to increased coverage of GOA groundfish vessels (all sizes: <60' and >60').

The present bookend is inconsistent with these options (see "Decision Points and Analytical Outline for Observer Program Restructuring," March 2003). Our recommendation to delete the first item in PPA.2 allows the coverage levels to be set based on scientific data and compliance needs for all vessels (as presently stated in PPA.2 in Observer Program: Coverage and Monitoring).

Recommendation: Observer Program: Fee Structure: FMP PPA.1: Delete the existing topic: " – *Explore: a) Federal contract funding (annual appropriation); use of contract hires vs. Federal employees; b) Research Plan (e.g. fee-based); and c) TAC set-aside.*"

Rationale: We recommend deletion because this item is found in both bookends, resulting in no range in the bookends. Additionally, the TAC set-aside has previously been dropped from consideration by the OC, because it was found to disproportionately assess fees across fisheries. The TAC set-aside is not found in the PPA.2 Observer Program: Fee Structure in the right hand bookend.

Recommendation: Data and Reporting Requirements: Reporting Requirements; FMP PPA.2: Revise the existing item in this bookend: *" – Explore programs that collect and verify economic data through independent third party (accounting firm/other)" to read: " – Explore programs that collect and verify economic data through independent third party (accounting firm/other)* ***WHILE PROTECTING CONFIDENTIAL INFORMATION ON AN INDIVIDUAL/FIRM BASIS****." And delete " – Collect mandatory economic data reporting by vessels and processors, i.e. earnings, expenditures, and employment data."*

Rationale: The suggested revisions would allow data gathering without compromising proprietary information. A recent experience with Freedom of Information Act (FOIA) requests concerning safety observations from observers highlights this concern. As to the other items in that bookend (PPA.2 Data and Reporting Requirements: Reporting Requirements), we suggest retaining the reference to aggregate information, but deleting the item requiring mandatory data, due to concerns over confidentiality.

Attachment E

Oceans Alternative

Submitted By:

Alaska Oceans Program
Center for Biological Diversity
Earthjustice
Greenpeace USA
National Environmental Trust
The Ocean Conservancy
Trustees for Alaska

THE OCEANS ALTERNATIVE: A FISHERY ECOSYSTEM PLAN

The North Pacific is the place to move fisheries management into the 21st century by fundamentally shifting our approach to management. The Fisheries Management Plan SEIS provides an historic opportunity for the Fisheries Service to take the lead in the long-overdue shift to ecosystem-based fisheries management. We propose the Oceans Alternative below as a Fishery Ecosystem Plan that explicitly and systematically incorporates ecosystem considerations into practical management decisions. The Oceans Alternative infuses requirements for ecosystem consideration and protection into all aspects of fishery management. The Oceans Alternative provides a framework of principles, policies and practical management protocols that enables managers to achieve these goals and objectives in the operation of the fisheries.

Ecosystem Conservation and Management

The goal of ecosystem-based fisheries management is to put ecosystem principles into *practice*, a desire expressed in the U.S. Magnuson-Stevens Fishery Conservation and Management Act ("MSFCMA").[1] The existing MSFCMA definition of conservation and management recognizes the importance of protecting marine ecosystems,[2] and the definition of Optimum Yield authorizes reductions in fishing levels from the theoretical maximum allowable level to account for ecological factors.[3] Concerning ecological factors, MSFCMA, Sec. 301 (National Standards) give the Councils wide latitude to reduce the allowable fishing rates from the theoretical maximum level (NMFS 1998, 63 FR 24232).[4] In addition, the MSFCMA guidelines for essential fish habitat ("EFH") conservation in the EFH final rule require an ecosystem approach, where possible, in determining EFH of a managed species.[5] Similarly, the Marine Mammal Protection Act and Endangered Species Act mandate the conservation of ecosystems and habitats on which listed species depend. All the relevant laws support an ecosystem-based approach to the use of living marine resources.

The practical application of ecosystem principles requires explicit direction, guidelines and requirements in the fishery management plans, which constitute the policy framework, and accompanying regulations designed to achieve specified management goals for U.S. marine

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[1] Sec. 406. 16 U.S.C. 1882, tasked NMFS with convening a panel to develop recommendations "*to expand the application of ecosystem principles in fishery conservation and management activities.*"

[2] MSFCMA, Sec. 3(5) expresses the intent of conservation and management to avoid irreversible or long-term adverse effects on fishery resources and the marine environment (16 U.S.C. 1802).

[3] MSFCMA, Sec. 3(28), 16 U.S.C. 1802.

[4] "*Examples are stock size and age composition, the vulnerability of incidental or unregulated stocks in a mixed-stock fishery, predator-prey or competitive interactions, and dependence of marine mammals and birds or endangered species on a stock of fish. Also important are ecological or environmental conditions that stress marine organisms, such as natural and manmade changes in wetlands or nursery grounds, and effects of pollutants on habitat and stocks*" (NMFS 1998a, 63 FR 24232).

[5] "*Ecological relationships among species and between the species and their habitat require, where possible, that an ecosystem approach be used in determining the EFH of a managed species. EFH must be designated for each managed species, but, where appropriate, may be designated for assemblages of species or life stages that have similar habitat needs and requirements*" (67 FR 2377, Section 600.815 (iv)(E)).

fisheries.[6] The Ecosystems Principles Advisory Panel (EPAP 1999)[7] concluded that existing federal FMPs are not sufficient to implement an ecosystem-based approach to fisheries management. The Oceans Alternative FMP framework remedies that shortcoming by including clearly stated goals, objectives, and guidance at the policy level requiring formal consideration and protection of the ecosystem as a binding, non-discretionary management obligation, as well as rules at the regulatory level to implement those requirements. The intent is to resolve fundamental conflicts between the usual goal of maximizing yields in marine fisheries management and the goals of national environmental mandates in the Endangered Species Act, Marine Mammal Protection Act, and National Environmental Policy Act among others.[8] Thus the existing MSFCMA definition of fishery sustainability based on achieving maximum sustainable yield for individual fisheries[9] must be expanded to address ecosystem considerations and objectives in the FMPs.

Fishery sustainability is hereby redefined in an ecosystem context as the levels and methods of fishing that are compatible with explicitly stated FMP objectives and requirements for preserving the productivity, nutrient dynamics, habitats, trophic structure, species richness, and resilience of the natural ecosystem. This definition is entirely compatible with the intent of MSFCMA and other relevant statutes.

The Oceans Alternative stipulates that a Fishery Ecosystem Plan will be adopted for each major ecosystem under Fisheries Service jurisdiction, incorporating explicit principles, policies, guidelines, requirements and implementing regulations for ecosystem-based management via the FMPs. Under these plans, conservation and management is defined as all the rules designed to:

1. Protect, maintain and restore healthy marine ecosystems, understood as ecosystems in which ecological processes, habitats, trophic levels, and productive capacity are comparable to an unexploited system, and the diversity of the native flora and fauna is preserved at the genetic, species and community level.
2. Rebuild, restore, and maintain exploited fish stocks at high levels relative to an unfished condition in order to preserve the ecological relationships between the exploited, dependant and related species in the food web.
3. Conserve fish and other wildlife habitats within a comprehensive plan for the protection of Essential Fish Habitat (EFH) of managed species, critical habitat of ESA-protected species, known important habitat of MMPA-protected species, and habitat of management-defined categories of non-target and unmanaged species.
4. Provide for commercial, recreational and non-consumptive uses of the marine environment within the framework of 1-3.
5. Avoid irreversible or long-term adverse effects on fishery resources and the marine environment.

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[6] NMFS 2001 Draft PSEIS 2.4, p. 2. The North Pacific Council's nine Comprehensive Fishery Management Goals also provide "targets" for future Council action. PSEIS 2.4, p. 2; Appendix G.
[7] EPAP. Ecosystem-Based Fishery Management, A Report to Congress, April 1999, p. 27.
[8] National Research Council. The Bering Sea Ecosystem. National Academy Press, Washington, D.C., 1996, p. 24.
[9] MSFCMA, Sec. 3(29), 16 U.S.C. 1802, defines MSY as "*a rate or level of fishing mortality that jeopardizes the long-term capacity of a stock to produce maximum sustainable yield on a continuing basis...*"

6. Transmit a legacy of healthy ecosystems to future generations.

These goals are established through the following policies, requirements and management measures.

Target Species Management: Overfishing in an Ecosystem Context

Policy Level:

Currently the North Pacific groundfish management plans define overfishing levels and sustainability with respect to the M-S Act standard of maximum sustainable yield (MSY), a simplified production theory which regards any fish production above the level required (in theory) to maintain spawning stock at a given target size as "surplus" for the fishery. PSEIS, ES-66. To compensate for the ecological deficiencies of MSY, overfishing guidelines must be modified to account explicitly for the roles of target species as prey for other fish, marine mammals and birds, as well as the unique life history characteristics, habitat needs and scientific uncertainties that make target species vulnerable to conventional MSY levels of fishing mortality.

Fishing levels should be set in a highly precautionary manner to preserve ecological relationships between harvested, dependent and related species. The TAC-setting process should contain procedures and requirements to reduce maximum allowable levels of fishing under the conventional "single-species" MSY rules to an Optimum Yield (OY) level that addresses both the cumulative effects of fishery-maximizing exploitation strategies that are designed to out-compete the other parts of the ecosystem, and local-scale impacts of spatial/temporal concentration of fishery catches.[10] Fishing for important forage species should be reduced to more precautionary levels to maintain the forage base for predators at high levels of abundance relative to the unfished condition as is done under the Convention for the Conservation of Antarctic Living Marine Resources (CCAMLR), which sets the harvest policy for important forage species such as krill (*Euphausia superba*) at $F_{75\%}$ in an effort to take the needs of predators into account.[11]

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[10] Concerning ecological factors, the National Standard Guidelines give the scientific advisors and managers wide latitude to reduce the allowable fishing rates from the theoretical maximum level: "*Examples are stock size and age composition, the vulnerability of incidental or unregulated stocks in a mixed-stock fishery, predator-prey or competitive interactions, and dependence of marine mammals and birds or endangered species on a stock of fish. Also important are ecological or environmental conditions that stress marine organisms, such as natural and manmade changes in wetlands or nursery grounds, and effects of pollutants on habitat and stocks*" (NMFS 1998, 63 FR 24232).

[11] R.B. Thomson, D.S. Butterworth, I.L. Boyd, and J.P. Croxall. Modeling the Consequences of Antarctic Krill Harvesting on Antarctic Fur Seals. Ecological Applications, 10(6), 2000, pp. 1806-1819: "*The Commission for the conservation of Antarctic Marine Living Resources (CCAMLR) takes the needs of krill into account in an indirect manner when recommending the annual krill catch limit. This is done using a single species model to estimate the size of the krill population (relative to its pre-exploitation size) after a 20-yr period of harvesting at a given intensity. The level of harvesting intensity is adjusted until the median krill spawning biomass is predicted to be 75% of its median pristine size.*"

Uncertainty factors should be incorporated systematically into ABC/TAC-setting to account for measurement errors (surveys, fishery observer data), process errors (stock assessment model simulations), and extrinsic ecological and environmental factors that act on fish population dynamics in unknown and/or unpredictable ways. The overall approach reflects a policy objective to *maintain a large margin of safety in recommending acceptable biological catches in an environment where uncertainty is all-pervasive and even the best available scientific information is frequently full of unknowns*.

Regulatory level:

Tiers 1-3 set target fishing rate at $F_{75\%}$ as an ecosystem proxy and set MSST spawning biomass at $B_{40\%}$ (or higher, depending on life history characteristics) for following:

- Important target prey species (e.g., pollock, Atka mackerel, cod)
- Species with K-selected life histories (e.g., rockfish, sablefish)
- Species for which life history and abundance information is available for stock assessment purposes but limited, uncertain and subject to large error bounds (e.g., natural mortality, growth rate, age of maturity, fecundity, reproductive rate, etc.)
- Rebuilding 'target' not less than $B_{75\%}$ (10-year max to rebuild or no fishing)
- TAC-Setting Uncertainty Buffer:
  - TAC < ABC < OFL
  - TAC = Catch + Bycatch
- Explicit spatial and temporal management of TACs to prevent localized depletion, serial overfishing by area, adverse local or regional impacts to species and habitats
- Optimum Yield = sum of TACs (reflecting current choices/tradeoffs)

Tiers 4-6 target species for which there is not adequate information to estimate biological reference points (BRPs) and minimum stock size threshold (MSST):

- No directed fishery TAC specified until data available to estimate biomass and values for $F_{X\%}$, $B_{X\%}$, F_{OFL}, MSST
- Tiers 4-6 designated to bycatch-only status
- Require full retention and utilization of bycatch species in Tiers 4-6[12]

When multiple species are grouped together and treated as one "stock" for purposes of setting a group TAC (assuming there is enough information to warrant directed fishing TACs), TAC or equivalent bycatch caps should be set at levels that protect the most vulnerable members of the group:

- Set ABC/TAC based on the least abundant species – if abundance data are available – to avoid overfishing of most vulnerable member of the group

[12] Note that this management measure does not imply endorsement of the existing IR/IU program as a means to meet the Magnuson Act's bycatch mandates. Rather, it is intended here as a data collection measure to improve target species management.

- Set ABC/TAC based on the species whose life history characteristics are most vulnerable to fishing mortality (e.g., species w/low reproductive rates)[13]

Uncertainty factors are incorporated systematically into ABC/TAC to account for measurement errors (surveys, fishery observer data), process errors (stock assessment model simulations), and extrinsic ecological and environmental factors that act on fish population dynamics in unknown and/or unpredictable ways:

- Factor species-specific survey coefficient of variation (CV, the error bounds around biomass point estimates) into calculation of ABCs, e.g., using average CV of survey biomass estimates in time series and compute lower 90% confidence interval as fraction by which to reduce maxF_{ABC}
- Set ABCs on lower 90% confidence limit of model estimate for $F_{X\%}$ rather than midpoint (50%) of the range of probability (i.e., *require higher confidence in ABC estimate*)
- Decision rules limiting fishing rate to *no greater than* $F_{75\%}$ for species w/key ecological roles, vulnerable life histories, and situations of high uncertainty
- $B_{40\%}$ (or higher, depending on life history characteristics) a limit rather than target (i.e., MSST) with linear reduction in F rate below $B_{50\%}$ to F = 0 @ $B_{40\%}$
- No directed fishing allowed for species for which no data exist to calculate BRPs and MSST
- Spatial and temporal dispersion of TAC employed to prevent localized depletion, serial overfishing by area, adverse local or regional impacts to species & habitats (See Spatial/Temporal Management of TACs below)
- Basin-wide network of marine protected areas (understood as areas managed primarily for the protection of fish and wildlife and their habitats that exclude commercial fishing, and may permit subsistence and/or personal use, and may in special circumstances include fully protected no-take reserves) and gear closure areas to prevent habitat damage and act as hedge against multiple uncertainties (see Habitat Protection Plan below)
- Expand research to obtain biological reference points, improve knowledge of species' life histories and habitat requirements, role in the food web, etc. (see Research Plan below)

Spatial/Temporal Management of TACs

Policy Level:

Fishery stock assessments do not assess the spatial distribution of stock biomass, the movement of fish over the course of the year, or the spatial and temporal effects of fishing. ABCs are set at the area-wide scale of the "stock as a whole" and on a start-of-year basis (PSEIS VIII, F-2-30), but fisheries concentrate effort in highly productive areas and times of high catch per unit of effort (CPUE), for economic reasons. Spatial/temporal concentration of fisheries increases the risk of overfishing and adversely impacting reproductive success of target stocks, their habitats, and dependent and related species. PSEIS IV, 5-15, 16; PSEIS II, 4.5-280; Appendix F-2, 3, 4. The TAC-setting process should include procedures to evaluate and address the spatial/temporal

[13] When multiple species are grouped together and treated as one "stock" for purposes of setting a group TAC, it is possible to overfish a vulnerable member of a stock complex. PSEIS IV, 4.10-4.

dimensions of fishing impacts explicitly, recognizing the limits and imprecision of available information:

- The FMPs will adopt an explicit policy of spatial and temporal management of TACs, based on mgmt objectives for target, non-target and protected species, and habitat protection

Regulatory Level:

Stock assessments should include all the relevant data to facilitate Plan Team evaluations and recommendations for spatial/temporal management of each target fishery:

- Each stock assessment will include distribution maps of fishing effort and catches by area and time of year using available Observer Program data, and information on the geographic and seasonal distribution of stock biomass from available survey data
- Each stock assessment will include an evaluation of how the distribution of the species and fishery have changed (or not) over time, and why these changes have occurred (e.g., environmental, socioeconomic, or regulatory factors that have affected spatial/temporal distribution of stock biomass and fishing effort)
- The stock assessments will include maps of EFH for the target species and evaluate fishing locations and catches relative to EFH, HAPC living habitat, and bycatch of non-target species
- The stock assessments will include relevant statistics on levels of catch in Steller sea lion critical habitat or other affected habitats of protected and vulnerable species, integrating data and advice from Office of Protected Resources, National Marine Mammal Laboratory, and the fishery Observer Program

A checklist of criteria should be employed to assess appropriate spatial/temporal management of each fishery, based on management objectives for target, non-target and protected species, and habitat protection. For example:

- How do local or regional fishing mortality rates compare with the target fishing mortality rate for "the stock as a whole"? Are disproportionately high catch rates (i.e., relative to the standing stock in the area) indicated or possible, based on available survey information, fishery CPUE data or vulnerable habitat type?
- Are patterns of serial depletion area by area indicated or possible due to concentrated fishing pressure on localized subpopulations of a stock in vulnerable EFH (e.g., spawning grounds)? Have changes in stock biomass distribution and fishery effort occurred over time, based on known historical distributions of the stock and fishery?
- How is fishing effort distributed relative to EFH (e.g., spawning, nursery, foraging habitat) and HAPC?
- Are localized depletions of important forage species indicated or possible due to fishery overlap with foraging areas of predators (e.g., SSL, NFS, whales, seabirds)?
- What is the fishery impact in regulated areas of critical habitat of protected species, by area and season?

- Are "hotspots" of high bycatch of non-target and Prohibited Species indicated in fishery Observer Program data?

Based on the evaluation of fishery data using these criteria, the groundfish Plan Teams will make recommendations for spatial and temporal management of the fishery along with ABCs, and identify critical information needs/gaps:

- Provide clear explanations of rationale and information used to apportion ABC by areas and seasons, or reasons for not doing so
- Include recommendations for gear restrictions, gear closure areas, bycatch-triggered closure areas, marine reserves or other measures that would address identified or potential impacts of concern
- Identify further research and survey information needed to address unknowns

In addition, inseason managers must have flexibility to act quickly to avoid harm and address problems that arise based on new information, including:

- Provide "Hot Spot" authority for managers to make timely inseason reductions to TAC Specifications as necessary to close a directed fishery, close areas of high bycatch, or otherwise modify a fishery to prevent overfishing, exceeding bycatch limits, or adversely impacting protected species and their critical habitats

Non-Target ("Bycatch") Species Taken Incidental To Fishing

Policy Level:

Literally hundreds of species are caught and killed incidentally in the groundfish fisheries, which catch a wide variety of species even when "targeting" a single species. PSEIS II, 4.1-31. The highest observed levels of non-target bycatch typically consist of species in the largest and least understood FMP species categories of "Other," "Forage," and "Non-specified," for which species-specific bycatch statistics are lacking because species-level identification is not required in the fishery Observer Program under the current FMPs. PSEIS IV, 4.9-231.

A bycatch reduction and avoidance plan is implemented to reduce or eliminate bycatch of non-target species in the FMP categories (e.g., Other, Forage, Non-specified), not simply to reduce regulatory discards as under the Improved Retention/Improved Utilization (IR/IU) program for target species pollock and cod. Bycatch limits are a principal tool for constraining bycatch of commercially valuable halibut, herring, salmon and crab in the North Pacific, but as conservation measures the bycatch caps are costly and information-intensive, requiring extensive independent survey and fishery observer data. They do not account for the uncounted crustaceans, mollusks, and other benthic life that are crushed or maimed by trawl gear and left on the seabed, or for the majority of non-targeted species caught, and therefore they understate the full impacts of fisheries; and they provide no protection to seabed habitat from trawl gear disturbance and damage. Fishing gear closures can serve as a conservation tool to reduce bycatch and protect foraging birds and mammals that also congregate in these zones. Gear allocations and catch

priorities to cleaner gear types should also be employed in conjunction with an integrated system of gear closure areas and marine reserves in order to reduce and avoid bycatch.

Regulatory Level:

For species in the "Prohibited Species" FMP category:

- Maintain existing BSAI Prohibited Species status for halibut, herring, salmon and crab, reduce PSC limits 10%/year over 5 years
- Extend Prohibited Species status to same species in GOA FMP, set PSC caps
- Establish PSC limits for currently designated HAPC living habitat, and future HAPC designations, set PSC caps

For species in the "Other," "Forage" and "Non-specified" species categories:

- Establish species-specific bycatch limits for non-target stocks (e.g., squid, octopus, skates, sharks, grenadiers, sculpins) as sufficient information becomes available
- Employ time/area gear closures and spatial/temporal management of TACs to address fisheries and areas of high bycatch
- Maintain existing trawl closure areas for nearshore crab habitat and bycatch-triggered closure zones (Bering Sea only)
- Integrate marine protected areas (understood as areas managed primarily for the protection of fish and wildlife and their habitats that exclude commercial fishing, and may permit subsistence and/or personal use, and may in special circumstances include fully protected no-take reserves) to avoid bycatch in sensitive and essential habitat areas
- Prohibit trawling for rockfishes, sablefish, Greenland turbot, Pacific cod and any other fishery that can be prosecuted with more selective ("cleaner") gear types that have less impact on habitat
- Phase out fisheries with high bycatch (e.g., >25% bycatch/discard rates)
- Establish and implement a harvest priority for cleaner gear types.

Habitat Protection Plan

Policy Level:

The Oceans Alternative Habitat Protection Plan provides comprehensive habitat protection in an integrated network of gear closure areas combined with marine protected areas, understood as areas managed primarily for the protection of fish and wildlife and their habitats that exclude commercial fishing, and may permit subsistence and/or personal use, and may in special circumstances include fully protected no-take reserves. Closure areas are intended to serve as protection for essential habitat types (spawning grounds, coral substrates, productive upwelling zones, etc.), as hedges against scientific uncertainty, and as scientific control areas to facilitate learning and informed adaptive management. The habitat protection plan encompasses all major types of benthic and pelagic ocean habitat in the action area. It includes protection of Essential

Fish Habitat and HAPC biota, as well as designated critical/essential habitats of protected mammal and bird species.

The Oceans Alternative Habitat Protection Plan employs a science-based approach while recognizing that the study of fishing effects on all types of habitat will remain uncertain for the foreseeable future. Scientific uncertainty about the effects of fishing on marine habitats is not a reason to delay habitat protection, rather a reason to increase it. (See Research Plan below.) This precautionary approach manages explicitly for habitat complexity *now*, while research on "essential" habitats continues.[14] Habitat protection measures can serve the cause of science and improve understanding by providing research control areas to study the effects of fishing while providing hedges against uncertainty and preserving options for the future.[15,16]

Regulatory Level:

- Provide detailed habitat maps and maps of fishery spatial/temporal distributions from Observer Program database (See Spatial/Temporal Management of TACs above)
- Integrate fishery Observer Program data and habitat maps into stock assessments for use in the TAC-setting process
- Zone and delimit fishing gear use in the action area, establishing areas where fishing is permitted, and allowing no expansion of destructive fishing without review and approval
- Establish a basin-wide network of marine protected areas (understood as areas managed primarily for the protection of fish and wildlife and their habitats that exclude commercial fishing, and may permit subsistence and/or personal use, and may in special circumstances include fully protected no-take reserves) encompassing at least 20-50% of fishable EEZ
- Designate spawning area closures to protect essential reproductive habitats of target species such as pollock, Pacific cod, rock sole, etc., which are fished intensively at spawning time
- Maintain existing trawl closure areas for nearshore crab habitat and bycatch-triggered closure zones
- Expand trawl closure areas to address areas of high bycatch and damages of chronic trawling to vulnerable essential fish habitats, including living coral habitat
- Prohibit trawling in all designated critical foraging habitat of the endangered Steller sea lion and address potential spatial/temporal redistribution of pollock trawl fishing effort in northern fur seal foraging habitat
- Identify areas of overlap between fisheries and habitats utilized by endangered whales and other marine mammals as migratory corridors and foraging grounds, by way of identifying habitat requiring protection measures

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[14] Peter J. Auster, Les Watling, and Alison Rieser. 1997. Comment: The Interface Between Fisheries Research and Habitat Management. North American Journal of Fisheries Management 17: 591-595.
[15] Dayton, Paul K., Enric Sala, Mia J. Tegner and Simon Thrush. Marine Reserves: Parks, Baselines, and Fishery Enhancement. Bulletin of Marine Science, 66(3) 2000: 617-634.
[16] Daniel Pauly, Villy Christensen, Sylvie Guenettte, Tony J. Pitcher, U. Rashid Sumaila, Carl J. Walters, R. Watson and Dirk Zeller. Towards sustainability in world fisheries. Nature, Vol. 418, August 2002: 689-695.

- Cooperate with USFWS to address incidental fishing mortality and impacts to the habitats of other ESA-listed species (Short-tailed albatross, Steller's eider, Spectacled eider) and unprotected seabirds, with the goal of reducing seabird bycatch mortality to levels approaching zero
- Provide for traditional Alaska Native subsistence uses of fish and wildlife within protected areas

Catch Monitoring/Observer Program

Policy Level:

Observer coverage and Vessel Monitoring Systems (VMS) should be required for all sectors of the groundfish fleet, as part of the cost of doing business. Without fishery observer catch data and biological sampling for stock assessment purposes, fishery management has no way to monitor and assess fishery impacts. An equitable funding mechanism should be developed to support a robust Observer Research Plan that accomplishes the goals and objectives of the MSFCMA for total catch measurement and other data needs *necessary for the conservation, management, and scientific understanding of any fisheries under the Council's jurisdiction* (16 U.S.C. 1853 et seq.). Improvements in identification and enumeration in all FMP species categories should be prioritized and resources should be made available to accomplish those goals, including staff and funding levels. Observer Research Plan program design, objectives, sampling protocols and methods for improving data should be coordinated by NMFS.

Regulatory Level:

- 100% observer coverage on vessels >60' LOA
- 30% observer coverage on vessels <60' LOA
- Mandatory Vessel monitoring systems (VMS) on all groundfish vessels, as well as other monitoring tools (e.g., winch sensors, video equipment) where appropriate or feasible to enhance catch monitoring and measurement
- Vessel logbook catch reporting requirements to log catches in closed/open areas separately in order to assess compliance with maximum retainable bycatch limits inside areas closed to directed fishing or inside regulated areas of Steller sea lion critical habitat
- "Hotspot authority" to place observers and Observer Program staff aboard vessels in fisheries with high bycatch or other priority monitoring needs as determined by the program, based on statistically sound protocols
- Adequate resources and methods for improving identification and enumeration of fishery catches in all FMP species categories
- Whole-haul observer sampling on selected vessels to test assumptions of random sampling methodology, or as needed to improve total catch measurement and ensure that confidence in the data is high
- Requirement of motion-compensated scales to weigh all catches at sea
- Equitable and adequate funding mechanism to support program objectives, such as a fee-based funding mechanism based on: (1) a percentage of the unprocessed ex-vessel value of the fish and shellfish (such that smaller vessels with a smaller share of the catch are

not unfairly charged and larger vessels with a larger share of the catch pay into the system proportional to the benefits of the public resource that they enjoy); and (2) a percentage of the estimated processed value (such that fishing vessels do no bear the sole cost of the program and processors who reap the largest economic benefits pay their fair share)

Capacity Reduction and Limited Access Quota Allocation Plan

Policy Level:

Conservation problems have scientific, economic, and social components (Mangel et al. 1996), therefore an ecosystem-based framework of fisheries management must address not only protection of ecosystems but also economic and social aspects of fisheries to ensure that these are consistent with FEP goals and objectives and do not undermine the ability of ecosystems to produce goods and services on a sustainable basis across generations. Currently excess fishing and processing capacity exists in virtually every sector of the groundfish fleet. The economic sustainability of the fisheries is undermined by excess capacity, and the resulting race for fish between competing sectors of the groundfish industry leaves fishermen with little flexibility to respond to other priorities for conservation. Guiding principles for capacity reduction and alternative allocation schemes include:

- For fisheries to be sustainable and economically stable, capacity must be balanced with resource availability.[17]
- Should IFQ-based or community-based alternative allocations of groundfish quotas be developed, conservation standards must be included (see attachment) and it must be clear that a fishing quota is a privilege granted, not a right.
- NMFS must seek to prevent preemption of dependent fishing communities in Alaska and smaller, owner-operator participants who are most vulnerable to the effects of consolidation and accumulation of quota shares in other IFQ programs.

Sustainability requires limits on entry into fisheries as a first step, but the License Limitation Program (LLP) does nothing by itself to address the ills of overcapacity in the North Pacific groundfish fisheries since LLP would allow nearly twice as many vessels to fish as are now participating in the fishery every year. Limited access quota programs are no panacea for conservation, and additional programs should be examined as tools to end the race for fish, reduce the waste and bycatch associated with derby fisheries, improve compliance with other conservation regulations, improve vessel and crew safety, increase the value of the catch, and protect dependent fishing communities from pre-emption or consolidation of fishery benefits. Criteria for the design of limited access quota programs have been recommended by the Alaska Marine Conservation Council and Marine Fisheries Conservation Network (see attachment). These criteria must be included in any limited access quota program. In addition, should IFQs be considered, NMFS should assess the administrative and information costs of IFQ management

[17] NMFS 2001 Draft North Pacific Groundfish FMP-level PSEIS 4.9, p. 8.

and ensure that monitoring and enforcement programs can be adequately funded before approving such quota allocations.

Effort-based measures should also be employed as an alternative means of reducing capacity and protecting smaller participants from bigger competitors in instances where limited access programs are not feasible due to administrative costs, lack of resource survey information, lack of fishery observer data to estimate total catch, and lack of political support.

Regulatory Level:

- Maintain existing license limitations on new entrants to the groundfish fishery
- Should Individual Fishing Quotas be considered, include conservation standards, and ensure that program funding is adequate to cover the administrative costs of management, regular resource surveys, stock assessments, and observer reporting
- Establish community quota shares as a means of ensuring community access to fishing opportunities where such allocations are appropriate and simpler to administer as an alternative to individual-based quotas
- Encourage the development of fishing co-operatives in the absence of strict quota-based regimes
- Employ effort-based regulations, including vessel size and horsepower limits, gear size limits, trip limits, limits on tender vessels, seasonal exclusive area registration rules, etc., in instances where quota-based and community quota share systems are not feasible

Scientific Research and Monitoring Plan

The Oceans Alternative science and research approach is science-based while recognizing that research is not a panacea and scientific uncertainty about marine ecosystems will not be resolved by more research in most cases. The need for more information should, therefore, not be used as an excuse to delay precautionary protective measures to conserve ecosystem components while research continues. Scientific uncertainty about the effects of fishing on ecosystems is not a reason to delay environmental protection or ecosystem-based management, rather a reason to increase it. Basic precautionary principles guide this ecosystem-based management approach to science, research, and uncertainty:

- The management system is science-based but must have realistic expectations about the ability of scientific research to yield conclusive results or provide unequivocal management advice; marine science is likely to produce glimpses of underlying ecosystem mechanics rather than complete understanding for the foreseeable future[18]

[18] R.C. Ferrero and L.W. Fritz. Steller Sea Lion Research and Coordination: A Brief History and Summary of Recent Progress. NOAA Technical Memorandum NMFS-AFSC-129. June 2002. 34 pp.

- Fisheries science works with limited data of questionable reliability, makes many unverifiable assumptions about hidden states of nature, and provides probabilistic advice with low levels of confidence and large error bounds[19,20]
- Scientific uncertainty will not be eliminated from fishery management decisions, therefore the need for more information on ecosystem processes is no excuse for delaying efforts to protect ecosystem components in a precautionary, proactive manner while research continues[21]
- The burden of scientific proof must be shifted from the environment to fisheries; scientific uncertainties about the effects of fishing on marine ecosystems are reasons for more environmental protection, not less
- Any action must be taken in the face of uncertainty, guided by policy priorities and values in the FMPs that recognize high risks of error and leave large margins for safety
- Protective measures can serve the cause of science and improve understanding by providing research control areas to study the effects of fishing while providing hedges against uncertainty and preserving options for the future

The Oceans Alternative requires high levels of basic research, monitoring and data collection to approve high levels of fishing, in order to provide evidence that large-scale fisheries are not likely to have lasting adverse effects on the environment or incur high levels of risk of unintended consequences. Data needs for Target, Prohibited and Protected species management include:

- Calibration of stock assessment models requires, at a minimum, fishery catch data, independent survey abundance data, and basic life history data for target species[22]
- Expanded target species research is needed to obtain biological reference points, improve knowledge of species' life histories and habitat requirements, role in the food web, etc.
- Observer Program coverage is required to provide essential fishery data to estimate total catch and discard mortality, limited non-target species identification and enumeration, and collects some biological data (e.g., otoliths for age estimation); program underfunded and needs revamping
- Protected species management requires basic information, e.g., on Steller sea lion population trends, food habits, at-sea foraging distributions, studies of spatial/temporal fishery impacts on the local prey field, as well as Observer Program fishery data analysis and inseason fishery management for managed areas of critical habitat

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[19] Jon T. Schnute and Laura J. Richards. Use and abuse of fishery models. Can. J. Fish. Aquat. Sci. 58: pp. 10-17 (2001): "A fish population model typically contains many states that can never be observed directly, such as the abundance of fish."

[20] Daniel Goodman (chair), Marc Mangel, Graeme Parks, Terry Quinn, Victor Restrepo, Tony Smith, and Kevin Stokes. Scientific Review of the Harvest Strategy Currently Used in the BSAI and GOA Fishery Management Plans. Draft report prepared for the North Pacific Fishery Management Council, Nov. 21, 2002.

[21] Peter J. Auster, Les Watling, and Alison Rieser. 1997. Comment: The Interface Between Fisheries Research and Habitat Management. North American Journal of Fisheries Management 17: 591-595.

[22] Pamela M. Mace (Chair), Norman W. Bartoo, Anne B. Hollowed, Pierce Kleiber, Richard D. Methot, Steven A. Murawski, Joseph E. Powers, Gerald P. Scott. Marine Fisheries Stock Assessment Improvement Plan. Report of the National Marine Fisheries Service National Task Force for Improving Fish Stock Assessments, U.S. DOC/NOAA/NMFS, October 2001, p. 17.

Longer-term ecosystem monitoring is needed to collect baseline information, but existing research information from a variety of ongoing research initiatives is not being fully utilized at present. The Oceans Alternative Research Plan emphasizes better coordination of scientific research and better use of existing data, with a focus on interdisciplinary research integrating already available (and extensive) data from ongoing research at all levels of the federal, state and university institutions. The FMPs are already required to contain research recommendations that the Councils and NMFS view as necessary to carrying out their EFH management mandate, by law, including a schedule for obtaining information on the effects of fishing on habitat. Ecosystem monitoring, regular resource surveys, fishery observer data, and studies of the effects of fishing on habitat are baseline information needs and are included in the Fishery Ecosystem Plan as an ongoing obligation to improved implementation of ecosystem-based management and sustainable fisheries, including a schedule for obtaining information on the effects of fishing on marine ecosystems of the North Pacific. The Ecosystems Considerations appendix to the annual SAFE reports should be used as a vehicle in the TAC-setting process for collecting and compiling these data, identifying and reviewing research priorities, providing regular updates and evaluations of ongoing research as new information becomes available. This information should be integrated into stock assessments where relevant and employed by groundfish "Plan Teams" when making annual scientific recommendations for individual fishery ABCs:

- The Oceans Alternative research plan would include a specified research schedule for improving the description and identification of EFH and HAPC in the North Pacific, as well as a schedule for obtaining information on the impacts of fishing gear on marine habitat
- The Oceans Alternative ecosystem monitoring plan would include a specified research schedule for improving the description and understanding of ecosystems and ecosystem processes in the North Pacific, integrating existing research information from programs such as FOCI, SEBSCC, SSLRI, National Ocean Service, NOAA Office of Oceanic and Atmospheric research, Pacific Marine Environmental Laboratory, National Marine Mammal Laboratory, NMFS Fishery Observer Program, RACE resource surveys, Alaska Department of Fish and Game, EVOS-funded Gulf Ecosystem Monitoring (GEM) program, relevant university research programs, and other relevant research from outside the region
- Information should be compiled and updated on an ongoing basis in the Ecosystem Considerations appendix of the annual SAFE reports for use in stock assessments and the ABC and TAC-setting process
- Experimental fishing permits should be used where appropriate to evaluate methods for reducing bycatch, improving data collection of bycatch or testing hypotheses about the impacts of fishing on the environment
- Research efforts to improve knowledge of trophic interactions and predator-prey dynamics between exploited, dependent and related species should be reviewed and updated on a regular basis and utilized in stock assessment advice
- Fisheries Oceanography Coordinated Investigations (FOCI) and other long-term research should be funded to gather baseline data

- Traditional knowledge and observations of fishermen should be incorporated as additional sources of information and monitoring
- Ecosystem mapping capabilities should be enhanced

Alaska Native Subsistence And Co-Management Plan

Policy Level:

Recognition of traditional Native subsistence uses and cultural values of living marine resources should be an explicit feature of the FEP, including right of access to resources. Adverse impacts of the fisheries on species and habitats of cultural significance should be addressed.

Regulatory Level:

Co-management agreements and cooperative research designed to utilize traditional knowledge, including monitoring and data-gathering capabilities, should be encouraged and developed:

- Halibut and other groundfish
- Salmon and herring
- Seals, sea lions, cetaceans and seabirds

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