Agenda Item C.1
Situation Summary
November 2007

FUTURE COUNCIL MEETING AGENDA PLANNING

The primary purpose of this agenda item is to provide initial information to Council Members early in the meeting to facilitate planning for future Council meeting agendas.

The Executive Director will review initial drafts of the decision points for key groundfish projects (Attachment 1), the three-meeting outlook and the March Council meeting agenda (Attachments 2 and 3), and respond to any questions the Council may have regarding these initial planning documents. This agenda item is essentially informational in nature; however, after hearing any reports and comments from advisory bodies or the public, the Council may wish to provide guidance to the staff to help prepare for Agenda Item C.7, at which time final consideration of the three-meeting outlook and draft March agenda are scheduled.

Council Tasks:

1. **Receive information on potential agenda topics for upcoming Council meetings.**
2. **Receive information on an initial draft agenda for the March 2008 Council meeting.**
3. **Provide guidance on the development of materials for Agenda Item C.7 (March agenda and three-meeting outlook).**

Reference Materials:

1. Agenda Item C.1.a, Attachment 1: Council Meeting Decision Points for Groundfish Trawl Rationalization, Intersector Allocation, and 2009-2010 Biennial Specifications Endeavors.
2. Agenda Item C.1.a, Attachment 2: Preliminary Draft Three-Meeting Outlook for the Pacific Council.
3. Agenda Item C.1.a, Attachment 3: Preliminary Draft March Council Meeting Agenda, March 10-14, 2008, Sacramento, California.

Agenda Order:

a. Agenda Item Overview — Don McIsaac
b. Reports and Comments of Advisory Bodies
c. Public Comment
d. Council Discussion of Future Council Meeting Agenda Topics

PFMC
10/19/07

Council Meeting Decision Points for Groundfish Trawl Rationalization, Intersector Allocation, and 2009-2010 Biennial Specifications Endeavors

Council Meeting	Trawl Rationalization EIS	Intersector Allocation EA or EIS	2009-10 Biennial Specifications EA or EIS
June, 2007	Refine Alternatives	Adopt Draft Alternatives	Adopt Selected Stock Assessments
September, 2007			Adopt selected Stock Assessments
November, 2007	Adopt EIS Alternatives for Analysis	Prelim. DEA; Adopt Preferred Alternative For Public Review	Adopt remaining Stock Assessments, Prelim ABC/OYs, and Mgmt Measure Concepts
March, 2008	Placeholder: Refine Alternatives, If Nec.		
April, 2008		Final Council Action	Adopt Preferred ABC/OYs & Refined Mgmt. Measures
June, 2008	Prelim. DEIS; Adopt Preferred Alternative		Adopt Final ABC/OYs & Mgmt Measures
September, 2008			
November, 2008	Final Council Action		

Preliminary Three Meeting Outlook for the Pacific Council

(Contingent Items are Shaded and Counted in Time Estimate)

March Sacramento, CA (3/10-14/2008) Estimated Percent of Standard Floor Time = 121%	**April** Seattle, WA (4/6-11/2008) Estimated Percent of Standard Floor Time = 127%	**June** Foster City, CA (6/8-13/2008) Estimated Percent of Standard Floor Time = 138%
Administrative Closed Session; Open Session Call to Order; Min. Legislative Committee Report Interim Appt. to Advisory Bodies MSA Reauthorization Implementation 3 Mtg Outlook, Apr Agenda, Workload (2 sessions) Public Comment on Non-Agenda Items	**Administrative** Closed Session; Open Session Call to Order; Min. Legislative Committee Report Interim Appointments to Advisory Bodies MSA Reauthorization Implementation 3 Mtg Outlook, Drft Nov Agenda, Workload (2 sessions) Public Comment on Non-Agenda Items	**Administrative** Closed Session; Open Session Call to Order; Min. Legislative Committee Report Fiscal Matters Interim Appointments to Advisory Bodies MSA Reauthorization Implementation 3 Mtg Outlook, Drft Mar Agenda, Workload (2 sessions) Public Comment on Non-Agenda Items Research & Data Needs: Adopt for Pub Rev
Coastal Pelagic Species	**Coastal Pelagic Species**	**Coastal Pelagic Species** Pac. Mackerel Harvest Guideline 2008-2009: Adopt Final Amendment 11: Review Sardine Allocation
Enforcement Issues	**Enforcement Issues** US Coast Guard Annual Fishery Enforcement Report	**Enforcement Issues**
Groundfish NMFS Report 2007 Inseason Mgmt (2 Sessions) Trawl Rationalization: Placeholder to Clarify Alts if Nec. Stock Assessment Planning for 2011-2012 Seasons Pac. Whiting: Adopt Final 2008 Spx & Mgmt Measures, including periodic bycatch limits *[Defer Open Access limitation to Sept.--Alts. for Pub Rev]*	**Groundfish** NMFS Report 2007 Inseason Management (2 Sessions) Intersector Allocation: Adopt Final Preferred Alt Stock Assessments: Adopt Final TOR, List of Stocks to be Assessed, & Review Schedule 2009-2010 Mgmt Recommendations: Adopt 1) Preferred ABCs & OYs, & Prelim Revised RB Plns 2) Range of Refined Mgmt Meas. for Pub Rev, & if possible, a Preferred Alt. (Parts I & II)	**Groundfish** NMFS Report 2007 Inseason Management (2 Sessions) Trawl Rationalization: Preliminary DEIS--Adopt Pref. Alt. 2009-2010 Mgmt Recommendations: Adopt 1) Tentative Final Spx, RB Plans, & Mgmt Measures 2) Clarification to Tentative Adoption if Nec 3) Final EFPs for 2009: Preliminary Rev & Comment
Habitat Issues Habitat Committee Report	**Habitat Issues** Habitat Committee Report	**Habitat Issues** Habitat Committee Report

Agenda Item C.1.a
Attachment 2
November 2007

Preliminary Three Meeting Outlook for the Pacific Council

(Contingent Items are Shaded and Counted in Time Estimate)

March Sacramento, CA (3/10-14/2008) Estimated Percent of Standard Floor Time = 121%	**April** Seattle, WA (4/6-11/2008) Estimated Percent of Standard Floor Time = 127%	**June** Foster City, CA (6/8-13/2008) Estimated Percent of Standard Floor Time = 138%
Highly Migratory Species	**Highly Migratory Species**	**Highly Migratory Species**
NMFS Rpt	NMFS Rpt	NMFS Rpt
New EFPs for 2008: Adopt for Pub Rev	New EFPs for 2008: Adopt Final	Routine Mgmt Meas.: Identify any Proposed Changes
Yellowfin Overfishing Response: Final Action	IATTC Recommendations	
High Seas Shallow-set Longline Amend.: Adopt Alts for Analysis		
Marine Protected Areas	**Marine Protected Areas**	**Marine Protected Areas**
	New MPA's: Comment on New Proposals by MBNMS	New MPA's: Comment on New Proposals by MBNMS
Pacific Halibut	**Pacific Halibut**	**Pacific Halibut**
Rpt on IPHC Annual Mtg		
Incidental Catch Regs for 2008: Adopt Options for Public Rev	Incidental Catch Regs for 2008: Adopt Final	
Salmon	**Salmon**	**Salmon**
2008 Mgmt Measures: Adopt Options for Public Rev & Appt. Hearings Officers	2008 Mgmt Measures: Adopt Final	
KRFC Escapement Shortfall Report: Final Adoption	2008 Methods Review: Process & Prelimin Topics	
Mitchell Act EIS: Provide Council Comments		
Identify Stocks not Meeting Consv. Objectives		
PSC CWT Workgroup Briefing		
Information Reports	**Information Reports**	**Information Reports**
		Salmon Fishery Update
Special Sessions	**Special Sessions**	**Special Sessions**
		1 hr =3%

DRAFT MARCH COUNCIL MEETING AGENDA, MARCH 9-14, 2008, SACRAMENTO, CALIFORNIA

	Sun, Mar 9	Mon, Mar 10	Tues, Mar 11	Wed, Mar 12	Thurs, Mar 13	Fri, Mar 14
Day-Time Council Floor Matters		**CLOSED SESSION** 2:00 PM **CALL TO ORDER** 3:00 pm 1-4. Opening Remarks – Approve Agenda (15 min) **OPEN PUBLIC COMMENT** 1. Comments on Non-Agenda Items (45 min) **ADMINISTRATIVE** 1. Future Agenda Planning (15 min) **SALMON** PSC CWT Work Group Report (1 hr)	**PACIFIC HALIBUT** 1. IPHC Annual Mtg Report (30 min) 2. Incidental 2008 Catch Regs: Adopt for Pub Rev (30 min) **HABITAT** 1. Current Issues (45 min) **SALMON** 1. Review 2007 Fisheries & 2008 Stock Abundance Estimates (1 hr) 2. Identify Stocks not Meeting Conservation Objectives (30 min) 3. KRFC Overfishing Assessment and Recommendations (1 hr) 4. Identify Preliminary Mgmt Options for 2007 (3 hr) **GROUNDFISH** 1. NMFS Report (45 min)	**GROUNDFISH** 2. Pacific Whiting Specs for 2008 (2 hr 30 min) 3. Consider Inseason Adjustments for 2008 Fisheries, including Final Changes in Whiting Fishery Season Dates (2 hr 30 min) 4. Stock Assessment Planning for 2011-12 (1 hr 30 min) **SALMON** 5. Adopt 2008 Mgmt Options for Analysis (2 hr 30 min)	**GROUNDFISH** 5. Amendment 20 (Trawl Rationalization): Clarify Alts. (2 hr) 6. Final Consideration of Inseason Adjustments & Pacific Whiting Fishery Season Dates (2 hr) **SALMON** 6. Mitchell Act EIS: Council Comments (2 hours) 7. 2008 Mgmt Option Direction (if needed) (45 min) **HIGHLY MIGRATORY** 1. NMFS Report (30 min) 2. Yellowfin Overfishing Response: Final Action (1 hr)	**HIGHLY MIGRATORY** 3. New EFPs for 2008: Adopt for Public Review (2 hr) 4. High Seas Shallow-set Longline Amend.: Adopt Alts. for Pub. Rev. (2 hr) **ADMINISTRATIVE** 2. MSA Reauthorization Implementation (3 hr) 3. Legislative Matters (30 min) 4. Interim Appointments (15 min) 5. Approve Minutes (15 min) 6. Future Council Meeting Agenda Planning & Workload Priorities (30 min) **SALMON** 6. Adopt 2008 Mgmt Options for Public Review (1 hr 30 min) 7. Appoint Hearings Officers (15 min)
		3 hr 15 min	**8 hr**	**9 hr**	**8 hr 15 min**	**10 hr 15 min**
Committees		8:00 am GAP 8:00 am GMT 8:00 am SAS 8:00 am STT 8:00 am SSC 8:30 am LC 9:00 am HC 10:30 am ChB 4:30 pm EC	8:00 am EC 8:00 am GAP 8:00 am GMT 8:00 am SAS 8:00 am STT 8:00 am SSC ..	8:00 am EC 8:00 am GAP 8:00 am GMT 8:00 am SAS 8:00 am STT 1:00 pm HMSAS 1:00 pm HMSMT	8:00 am EC 8:00 am GAP 8:00 am GMT 8:00 am SAS 8:00 am STT 8:00 am HMSAS 8:00 am HMSMT	8:00 am EC 8:00 am SAS 8:00 am STT

Council-sponsored evening sessions: None

Agenda Item C.1.a
Attachment 3
November 2007

Agenda Item C.2
Situation Summary
November 2007

WEST COAST GOVERNORS' AGREEMENT (WCGA) ON OCEAN HEALTH

The primary purpose of this agenda item is to gather a Council response to the WCGA draft Action Plan.

The draft Action Plan was released for public review on October 19, 2007. The public comment period on the draft Action Plan closes on December 1, 2007.

The Council may choose to comment on the draft Action Plan, and specifically on those actions which involve fisheries, fish habitat, ecosystems, off-shore development, research and monitoring priorities and needs, and economic development of coastal communities.

Council Tasks:

1. **Comment on the WCGA draft Action Plan.**
2. **Task staff to prepare and submit Council comments on the WCGA draft Action Plan.**

Reference Materials:

1. Agenda Item C.2.a, Attachment 1: Draft WCGA Action Plan.

Agenda Order:

a. Agenda Item Overview — Heather Brandon
b. Reports and Comments of Advisory Bodies
d. Public Comment
e. Council Discussion

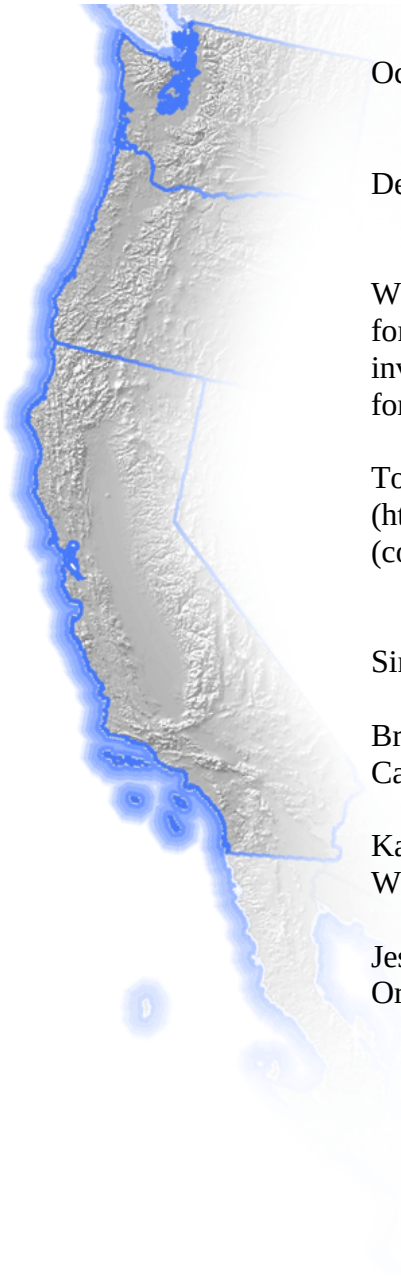
PFMC
10/19/07

WEST COAST GOVERNORS' AGREEMENT on OCEAN HEALTH
CALIFORNIA OREGON WASHINGTON

Draft Action Plan

October 19, 2007

Deadline for submitting public comment:
December 1, 2007



October 19, 2007

Dear Concerned Citizen,

We are pleased to announce the release of the draft Action Plan for the West Coast Governors' Agreement on Ocean Health. We invite you to provide us your comments and feedback, and look forward to considering them when finalizing the Action Plan.

To submit public comment on this draft, please visit the Website (http://westcoastoceans.gov/contact) or send us an email (comments@westcoastoceans.gov) before December 1, 2007.

Sincerely,

Brian Baird, Assistant Secretary for Ocean and Coastal Policy
California Resources Agency

Kathleen Drew, Executive Policy Advisor
Washington Governor's Office

Jessica Hamilton, Natural Resources Policy Advisor
Oregon Governor's Office

Executive Summary

The Governors of Washington, Oregon, and California are collectively committed to protecting the health of the West Coast's ocean and coastal ecosystems and the economies that depend on them. On September 18, 2006, the Governors entered a landmark partnership by signing the West Coast Governors' Agreement on Ocean Health. In the agreement, the Governors identified seven issues of regional significance that can be more effectively addressed through collaborative efforts by all three states. The Governors identified those priority areas as:

1. Clean coastal waters and beaches
2. Healthy ocean and coastal habitats
3. Effective implementation of ecosystem-based management
4. Reduced impacts of offshore development
5. Expanded ocean and coastal scientific information, research, and monitoring
6. Increased ocean awareness and literacy among the region's citizens
7. Sustainable economic development of coastal communities

In addition to setting priority areas, the agreement defined four immediate actions for the states to jointly undertake. These actions focused on funding for nonpoint source pollution control programs, the prohibition of new oil and gas leasing, development, and production offshore, the development of a marine research plan for the West Coast region, and federal technical support for addressing issues of regional significance. The states have acted on each of these initial directives, and are presently continuing to participate in the identification and prioritization of regional research needs in cooperation with the four Sea Grant programs.

To draft the Action Plan, the Washington, Oregon, and California Governors' representatives considered public feedback received on a Discussion Paper released in March 2007. The paper suggested potential action items to attain the goals of the agreement. For several specific issues, the states were guided by technical advisory teams that included experts from each of the three states. The states also worked closely with a working group of federal agencies co-led by the Department of Commerce (DOC), Environmental Protection Agency (EPA), and Department of the Interior (DOI). With these federal partners, the states selected and refined the actions in this plan. These actions will be initiated within eighteen months of the plan's release, and many will be completed in that time. An implementation summit will be jointly held by the states and federal partners in 2008 to establish workgroups and set timelines for progress. The states will regularly provide updates to the public on accomplishments, and will publish a formal status report at the end of two years.

For each of the seven priority areas in the Action Plan, a vision, goals for obtaining that vision, and the issues encompassed by the priority are identified. The specific actions that will be undertaken by the three states are at the close of each section with estimated timeframes, and are tabled in Appendix A.

Actions

- **Sustained National Support**
    - *Encourage establishment of a national Ocean Trust Fund that would support ocean and coastal management efforts for state and federal government agencies.*
- **Preparing for the Effects of Climate Change**
    - *Collaborate on a West Coast-wide assessment of shoreline changes and anticipated impacts to coastal areas and communities due to climate change over the next 30-50 years, and work together to develop actions to mitigate and adapt to the impacts of climate change and related hazards.*
- **Polluted Runoff**

1.1 *Work with the Administration and the U.S. Congress to provide adequate funding for coastal water quality programs to reduce polluted runoff, and enhance monitoring and enforcement of water quality regulations to improve the health of West Coast coastal waters.*

1.2 *Make Low Impact Development (LID) a priority for the West Coast by focusing future grant and incentive programs to state and local governments on this objective.*

- **Harmful Algal Blooms and Hypoxia**

1.3 *Exchange information between experts in all three states on management tools and techniques to promote development and operation of predictive capabilities of harmful algal blooms and hypoxia. Support the expansion of ocean observing system monitoring efforts amongst the three states for these purposes.*

- **Marine Debris**

1.4 *Establish the baseline estimate of marine debris and derelict gear off the West Coast and set reduction goals. Support state and federal policies for achieving marine debris reduction goals.*

- **Maritime Shipping Emission Controls**

1.5 *Urge the International Maritime Organization to adopt the U.S. proposal which sets stringent emission standards for ocean going vessels.*

- **Habitat Protection and Restoration**

2.1 *Document, describe, and map ecological communities throughout West Coast waters and characterize existing human uses of those areas.*

2.2 *Restore estuarine habitats, including coastal wetlands, to achieve a net increase in habitat and their function by at least ten percent over the next ten years.*

- **Marine Invasive Species**

2.3 *Focus efforts on eradicating non-native cordgrasses* (genus Spartina)*, which are transported between the three states on ocean currents.*

- **Ecosystem-based Management**

3.1 *Examine ongoing community-based efforts using ecosystem management principles in all three states and share lessons learned from these initiatives in order to encourage effective ecosystem-based management efforts across the West Coast.*

3.2 *Assess physical, biological, chemical, and socio-economic factors in ecosystem health across the West Coast to establish standards and indicators for ocean health.*

3.3 *Strengthen coordination between the three state representatives on the Pacific Fisheries Management Council.*

- **Offshore Oil and Gas Operations**

4.1 *Continue to oppose new oil and gas leasing, development, and production in ocean waters off the West Coast.*

- **Alternative Environmentally Sustainable Energy Development**

4.2 *Explore the feasibility for offshore alternative ocean energy development and evaluate the potential environmental impacts of these technologies.*

- **Ocean Awareness and Literacy**

5.1 *Integrate ocean science and conservation into expanded environmental education curricula by encouraging changes to education content standards enhancing ocean literacy.*

5.2 *Support outreach efforts to decision-makers at all levels and encourage improvement and expansion of volunteer programs such as clean marina initiatives.*

- **Regional Marine Research**

6.1 *Support the West Coast Sea Grant regional marine research needs process by identifying funding sources and partners for a sustained approach to ocean and coastal research.*

- **Seafloor Mapping**

6.2 *Complete a seafloor map of the bathymetry and habitat of all state tidelands and submerged lands out to three miles.*

- **Working Waterfronts and Sustainable Coastal Economies**

7.1 *Support local planning efforts for working waterfronts to promote sustainable fisheries and prioritize coastal dependent businesses and infrastructure through grant processes and federal assistance programs.*

7.2 *Establish baselines for coastal economies and promote sustainable coastal community development.*

- **Regional Sediment Management**

7.3 *Develop regional sediment management plans to maximize beneficial use of sediments (i.e., sand) to protect and maintain critical community economic and environmental infrastructure.*

Table of Contents

Introduction

The Governors of Washington, Oregon, and California formed a landmark partnership on September 18, 2006 when each signed the West Coast Governors' Agreement on Ocean Health. In the agreement, the Governors identified seven issues of regional significance, which they believe will be more effectively addressed through the collective effort of all three states. Together, the three states are joining forces to help protect the health of ocean and coastal ecosystems along the entire West Coast and the economies that depend on them. By working together to forge solutions and leverage funding, and by supporting and agreeing to national and state-level policies on coastal activities that impact the region, the Governors hope to make significant improvements in ocean and coastal health for the entire region.

> ***A Healthy Ocean and Coast***
> In this plan, "ocean health" encompasses the diversity and function of ocean, coastal, and estuarine ecosystems, the plant and animal communities therein, the physical, chemical, and biological processes involved, and the economies and people dependent on them. Acknowledging that isolated efforts cannot address the breadth of degradation to the ocean, the states are committed to working together to address critical protection and management issues faced by all three states. By combining resources, the three states will affect positive change in the present state of ocean health.

Why Work Together?

Historically, state coastal and ocean management policies and activities were often conducted on an issue-by-issue basis. In 2003 and 2004, the Pew Oceans Commission and U.S. Commission on Ocean Policy released reports stressing the importance of regional collaborations to support ocean and coastal management on an ecosystem level. To address those growing concerns a number of multi-state partnerships are coalescing across the country. As expressed in the commissions' reports, regional multi-state arrangements are important for addressing coastal and ocean issues that are intrinsically inter-connected because they are within the same large marine ecosystem. Ocean currents and marine species do not recognize the jurisdictional or political boundaries where one state (or nation) ends and another begins. On the West Coast, the states of Washington, Oregon, and California are poised to collaborate – and have already begun to cooperate – on the key issues affecting major estuaries and the coastal ocean waters driven by the California Current, which connects each of the three states.

The Agreement seeks to advance the goals of the following Priority Areas:

1. Clean coastal waters and beaches
2. Healthy ocean and coastal habitats
3. Effective implementation of ecosystem-based management
4. Reduced impacts of offshore development
5. Expanded ocean and coastal scientific information, research, and monitoring
6. Increased ocean awareness and literacy among the region's citizens
7. Sustainable economic development of coastal communities

History of the Agreement

In addition to setting seven priority areas (see the box at right), the agreement also defined four immediate actions for the states to jointly

undertake. These actions included supporting new funding for nonpoint source pollution control programs; opposing new oil and gas leasing development, and production offshore; developing a research plan for the West Coast region; and soliciting federal technical support for addressing issues of regional significance. Between September 2006 and June 2007, the states acted on each of these initial directives, and are presently continuing to participate in the identification and prioritization of regional marine research needs.

In March 2007, the states released a Discussion Paper to receive public feedback on additional proposed action items. The Washington, Oregon, and California Governors' representatives developed this Action Plan by considering those public comments, which were received at public meetings in all three states, submitted over the website, and sent to the states' representatives by interested members of the public, nongovernmental organizations, private industries, and local, state, and federal agencies.

In addition to consideration of public comment, the plan was developed with the support of technical advisory teams made up of experts representing every state that counseled the states' representatives on the status of science and policy on particular issues and assisted with crafting draft action items for consideration. The states also worked closely with a federal working group formed by the Subcommittee on Integrated Management of Ocean Resources (SIMOR), co-led by the Department of Commerce (DOC), Environmental Protection Agency (EPA), and Department of the Interior (DOI). Working with these federal partners, the states selected and refined actions that will be initiated within eighteen months after the Action Plan's release.

Organization of the Action Plan

Each of the seven priority areas identified in the agreement is addressed in a separate section within the Action Plan. Cross-cutting themes, particularly for research and monitoring needs, are highlighted in text boxes. A vision and goals for obtaining that vision are defined for each priority area, followed by an overview of the issues encompassed by the priority. An analysis of how each state and the federal government are presently approaching the issues is provided, and specific findings of need or fact are described. Each section closes with the specific actions the three states will undertake to address the issues.

Addressing Ecosystem-based Management

Ecosystem-based management (EBM) is an overarching principle that is inherently connected to each of the Governors' seven priority areas. Many of the public comments received highlighted Priority Area 3, the effective implementation of EBM, as an integrating tool for accomplishing the objectives of each of the other priority areas. Public input emphasized the importance of ecosystem approaches. This plan recognizes the connectedness of issues under each priority, and many of the actions are requisites or supporting components for other actions. For example, the completion of seafloor maps for the West Coast (Priority 6) and a comprehensive geographic information system (GIS) characterizing habitat and human uses (Priority 2) will help establish baseline ocean health indicators (Priority 3) that are necessary for a better understanding of the status of West Coast ecosystems (Priority 6) and how they will respond to the impacts of climate change (Priority 7).

Putting the Actions into Action

The actions identified in this plan will be initiated over the next eighteen months and have a range of timelines for completion. Many will require the establishment of working groups or committees. These factors will be the focus of the West Coast Governors' Agreement Implementation Summit, to be jointly held by the states and federal partners in 2008. The states will regularly provide updates to the public on progress of implementing the Action Plan and will publish a formal status report at the end of two years.

The Washington, Oregon, and California Governors' representatives acknowledge that the actions identified cannot be fully implemented with existing resources. Throughout the plan, the three states identify specific support needed from federal agencies and other partners in order to accomplish the goals.

A Call for Sustained National Support

The U.S. Commission on Ocean Policy and Pew Oceans Commission reports and the Joint Ocean Commission Initiative recommend the establishment of a dedicated funding source for federal and state ocean and coastal management. A national Ocean Trust Fund would provide a long-term source of funding specifically for improving our understanding of ocean and coastal resources and implementing more effective management of these resources. Secure funding is necessary to address new ocean and coastal management efforts, including activities contained in this action plan and the recommendations of the two ocean commissions.

> *Therefore, the West Coast Governors encourage establishment of a national Ocean Trust Fund that would support ocean and coastal management efforts for state and federal government agencies.*

The three states urge the Administration and the California, Oregon and Washington Congressional delegations to consider establishing a dedicated source of revenues for ocean and coastal management. The establishment of an Ocean Trust Fund would demonstrate national commitment to improved ocean policy and assist the states in addressing management and research needs. Both commissions identified several viable funding sources which do not require new taxes, and outlined ways to allocate funds to the states and to federal ocean agencies.

Preparing for the Effects of Climate Change

The three states recognize the inevitability of impacts on ocean and coastal resources from climate variations and long-term climate changes. Climate change alters the shoreline, ocean currents and temperature, and fragile ecosystems. These impacts will affect every priority in this agreement and many of the specific action items. Although models provide predictions and scenarios, these impacts and corresponding ecosystem responses are still shrouded with uncertainties.

> *Therefore, the West Coast states will collaborate on a West Coast-wide assessment of shoreline changes and anticipated impacts to coastal areas and communities due to climate change over the next 30-50 years, and work together to develop actions to mitigate and adapt to the impacts of climate change and related hazards.*

To model impacts to the West Coast under various likely climate change scenarios, the states will engage with academia and local, state, and federal government agencies, and will use the same frames of reference (i.e., models appropriate for providing inputs and assessing regional climate changes; scenarios published for greenhouse gas emissions) for predicting and responding to shoreline changes from storm surges and sea level rise. In addition, the states will support the development of climate scenarios on the likelihood and severity of changes in factors such as precipitation, average temperatures, and number of extreme heat days.

Priority Area 1:
Ensure Clean Coastal Waters and Beaches

Vision

Clean coastal waters and beaches where marine life thrives and where people can safely enjoy swimming, fishing, and other activities without the detrimental effects of pollution and marine debris.

Goals

- Improve coastal water quality by reducing water pollution through better stormwater management, pollution source detection and reduction, and other strategies to reduce polluted runoff.
- Decrease the number of beach/coastal closure days and reduce the area affected by these closures over time.

Issue

Ocean water quality is critical to the health of marine and coastal ecosystems and human uses for recreation, food, and commerce. Some human activities on land and in the marine environment adversely affect the quality of the Pacific Ocean. Sediment and debris are flushed by storm water from coastal landscapes into the ocean. Chemicals and pharmaceuticals in treated waste are discharged into rivers, estuaries, and the sea. Vessel hulls and ballast water can introduce non-native species to new areas. Ocean currents carry all of these – invasive species, contaminants, sediment, and debris – far from their sources.

Land development and associated polluted runoff put further pressure on water quality along the Pacific Coast. For example, hypoxia, the reduction in dissolved oxygen that results in ocean "dead zones," may be triggered by excess nutrients from human activities, upwelling, and changes to ocean circulation. Dead zones can result in death or injury to fish, shellfish, and other marine species. In addition, several types of harmful algal blooms (HABs) occur along the West Coast, and their increasing occurrence may be related to nutrient pollution and climate change. These events are not limited to coastal waters but can also impact coastal river systems. HAB impacts along the West Coast have ranged from the loss of economically and culturally vital shellfish resources to illness and death in humans and in marine species. Just one harmful bloom event can cost tens of millions of dollars to local coastal economies.

Clean Marinas

Clean marinas are an important part of working waterfronts, described in **Priority 7**. Boater education for best practices at marinas is incorporated in **Priority 5**.

Air pollution can also influence water quality, as air pollutants enter the water from rain. Air emissions from large vessels transiting the coast and activities in ports and harbors are, therefore, a growing concern for the three states. In addition, the congregation of recreational and commercial boats at marinas, the activities that often occur at marinas, and the physical location of marinas in and near the water (often located in sheltered areas with limited water movement or flushing) can result in significant local impacts to water quality. The implementation of best management practices by marinas to control and prevent point and nonpoint

sources of pollution is critical to protecting our sensitive marine environments. The impacts of these human-induced disturbances to marine systems, as well as natural variations, need to be understood to ensure a healthy ocean ecosystem and coastal-dependent communities.

Issue Analysis

Poor water quality is directly related to polluted runoff, which has six main sources: urban areas, marinas, agriculture, forestry practices, modification of shorelines and streams, and degradation of wetlands and other vegetated coastal habitats. To various degrees, the states are seeking to address these issues though the Coastal Nonpoint Source Pollution Control Program and Section 319 of the Clean Water Act. One approach is to implement low impact development (LID) measures. LID is a method of land development that aims to maintain the natural movement of water through a watershed. Impervious surfaces like roads and parking lots alter the movement of water and increase polluted runoff because stormwater cannot penetrate the ground. LID strategies include improved drainage, use of porous pavement, preservation of native vegetation, and creation of vegetated channels that promote infiltration, trap sediment, and help treat pollutants. In order to successfully reduce polluted runoff from growing urbanized areas, these efforts must be expanded.

Low Impact Development

Low impact development strategies support the long-term viability of coastal communities, described under **Priority 7**. These measures help urbanized areas rebound from hazard events and adapt more easily to climate changes.

Local, state, and federal water quality monitoring programs along the West Coast are often not well coordinated. Many monitoring programs are episodic rather than continuous and most are chronically under-funded. Incompatible data collection formats contribute to a general time-lag in reporting data and synthesizing findings. Resource managers and public health officials frequently lack a clear and timely picture of water quality and other conditions as the basis for local, state, and federal actions to protect these resources and to protect human health. Increased monitoring can improve understanding of the causes of HABs and hypoxia and enhance the prediction of events, which are escalating in frequency and extent.

Harmful Algal Blooms and Hypoxia

Research and monitoring for harmful algal blooms and hypoxia are a highlighted need under **Priority 6**. The three states require predictive capabilities in order to implement timely management actions.

To address the increasing incidence of HABs along the nation's coastline, NOAA, EPA, and NASA are providing $10 million nationwide in funding via the Ecology and Oceanography of Harmful Algal Blooms (ECOHAB) program to research algal species that may cause deleterious effects on human and coastal ecosystem health. Another NOAA funded effort, the Monitoring and Event Response to Harmful Algal Blooms (MERHAB) program, supports projects such as the Olympic Region Harmful Algal Bloom (ORHAB) partnership. The ORHAB partnership is a collaborative federal, state, tribal, and local ecosystem-based research and monitoring program that provides early warning of harmful algal blooms on Washington's outer coast. It is now funded through user fees collected by Washington State. ORHAB warnings have saved at least three million dollars each year for Washington's

coastal fisheries by enabling safe and selective beach openings during bloom events in 2001 and 2003-2006.

While these programs focus on marine events, an interagency workgroup on the Klamath River is an example of an effort to address HAB impacts on river systems. Formed in 2006 with federal, state, tribal, and local governments and commercial and private entities, the workgroup provides oversight on and coordination for various monitoring efforts to identify the presence, distribution, and possible causes of blue-green algae and their toxins.

Marine debris is another specific water quality issue that is a priority to all three states. All three states have annual coastal clean up programs. In 2002, Washington passed legislation urging the coordination of derelict fishing gear removal in the state. The Northwest Straits Commission, working with the Washington Department of Fish and Wildlife, developed a program and published guidelines for derelict fishing gear removal. Since that time, the Commission has removed over 1,245 derelict crab pots and 550 derelict fishing nets covering approximately 120 acres of marine habitat from Puget Sound. Thousands of dead animals, representing 55 different species were removed from the gear including marine mammals, birds, fish (including listed Chinook, chum and bull trout), octopus, and crab. The Commission established a goal of eliminating 90% of derelict fishing gear in priority areas of Puget Sound by 2012. The state hopes to expand the program beyond the Northwest Straits to other coastal areas.

In Oregon, the Department of Fish and Wildlife in partnership with Oregon Dungeness Crab Commission, Oregon Salmon Commission, and Oregon State Police, provided Restoration and Enhancement funds and staff time on a state project to develop a derelict crab gear retrieval program. This project was also an integral component of the federal project that also involved Oregon Fishermen's Cable Committee, Sea Grant, and Tyco International. All partners are continuing their efforts on derelict crab gear retrieval. In California, the Ocean Protection Council (OPC) adopted a resolution on marine debris in February 2007, which created a Marine Debris Steering Committee to specifically target the reduction and prevention of land-based sources of plastic debris. The OPC also funded a pilot derelict gear removal program in the Channel Islands and is considering expanding that program. Also this year, NOAA formally created a marine debris program and increased funding dedicated to research and removal.

The operations of commercial maritime shipping impact air quality by releasing soot and oxides of sulfur and nitrogen. These pollutants contribute to localized air quality impacts to communities near ports and the formation of regional smog and water quality degradation. If ships calling on West Coast ports were required to burn low sulfur fuel, major decreases in emissions associated with adverse health impacts would be achieved. The International Convention for the Prevention of Pollution from Ships (MARPOL) includes six annexes that set regulations recognized and adhered to by 22 ratifying nations. Annex VI caps sulfur content of fuel and limits emissions of sulfur and nitrogen oxide. To date, the U.S. has not ratified this annex, but submitted a proposal to the International Maritime Organization (IMO) to improve emission standards for ocean-going vessels beyond those initially set out by Annex VI.

Findings

Water Quality

Finding 1A

Nonpoint source pollution, or polluted runoff, is the most significant source of water pollution along the West Coast, impairing marine life in estuaries, bays, and nearshore waters.

Although systems to address polluted runoff have been in place for years, a renewed commitment among federal, state, local agencies, the private sector, and academia is necessary. The West Coast Governors' Agreement called for immediate action by the three states to appeal for national funding to address the threat of nonpoint source pollution. In June 2007, the Governors sent a joint letter to the House and Senate Appropriations Subcommittees urging the restoration of funding in fiscal year 2008 for the Coastal Nonpoint Source Pollution Control Program. The states will continue to advocate for secured federal funding sources to address polluted runoff, including funding for the Coastal Nonpoint Source Pollution Control Program, Section 319 of the Clean Water Act, and the Beaches Environmental Assessment and Coastal Health (BEACH) Act.

The BEACH Act is currently undergoing reauthorization, and the House and Senate are considering changing the Act's language to expand the allowable uses of funds. At present, the EPA distributes BEACH Act grant funds to states only for beach monitoring and public notification requirements. Expansion of the authority and resources of the Act would allow states to pursue source tracking studies, sanitary surveys, and prevention efforts.

In addition to this program, EPA administers the West Coast Estuary Initiative, which funds estuary-focused water quality improvement projects. Continued funding of this initiative would allow additional estuarine areas along the West Coast to receive support for polluted runoff reduction and improved water quality.

Finding 1B

Low impact development (LID) strategies have been recognized since the early 1980s, however, little progress has been made in ensuring LID-related methods are applied in planning, construction, or operation of coastal developments.

Examining the question of why there has been little progress made in applying LID principles to date may provide insight on the structural constraints that need to be considered in developing and pursuing a strategy.

Harmful Algal Blooms (HABs) and Hypoxia

Finding 1C

Additional research and expanded monitoring efforts are essential to understanding the threats posed by HABs and to support management actions relating to Pseudo-nitzschia *and other algae blooms along the West Coast. Research and monitoring is also necessary to*

understanding the connection between the increasing occurrence of hypoxia events, nutrient pollution, and climate change.

With advance notice of these events, immediate management actions can be undertaken. These monitoring programs must be made operational so the public receives timely notice and maximum protection. In spring 2006, a massive unforeseen HAB event occurred along the central California coast, caused by the diatom *Pseudo-nitzschia*. This event resulted in record levels of domoic acid, a neurotoxin that results in amnesic shellfish poisoning and caused the death of hundreds of seabirds and marine mammals including seals, dolphins, and sea otters. *Pseudo-nitzschia* and outbreaks of domoic acid poisoning occur West Coast-wide with harmful bloom event hot spots in all three states.

Marine Debris

Finding 1D

Marine debris is a significant threat to the health of the marine environment and is increasing along the West Coast and in the North Pacific Gyre.

Densities of small plastic pieces have tripled during the last decade in the North Pacific Gyre, a clockwise-circulating area that encompasses a majority of the northern Pacific Ocean and which is bounded on the east by the California Current. The U.S. Department of Commerce estimates that 80% of marine debris comes from land-based sources, much of which is composed of plastic and lasts hundreds of years or longer without biodegrading. Wildlife species, some of which are threatened or endangered species under state or federal law, can ingest and may become trapped or entangled in marine debris. In addition, organisms attach to plastic and can float to distant habitats and become harmful invasive species. Lost and abandoned fishing gear is another significant component of marine debris, which can be deadly to wildlife and dangerous to boaters and divers. Lost or abandoned fishing gear also can have an economic impact to fisheries. In Puget Sound alone, the Northwest Straits Commission estimates that derelict crab pots may be killing 200,000 lbs of Dungeness crab per year worth approximately $334,000. This represents at least eight percent of the Dungeness crab fishery lost to derelict pots – a significant impact to the commercial and recreational fishery.[1] Marine debris and derelict gear create a visual blight on the coast, represent a threat to populations of marine wildlife and coastal and ocean-dependent economies, and in certain circumstances, may pose a public health threat.

Air Quality

Finding 1E

Commercial maritime shipping traffic along the West Coast contributes significantly to air pollution, but international measures could be imposed to reduce emissions including oxides of sulfur and nitrogen, particulate matter, and lower total air pollutant loads.

[1] Northwest Straits Commission, 2007 unpublished data

Emissions from ocean-going ships are a growing concern on the West Coast of the U.S. and Canada. The U.S. Department of Transportation predicts a doubling of international and domestic marine trade over the next twenty years. By 2030, the U.S. EPA estimates that out of all U.S. mobile emission sources, ocean-going vessels will account for 28% of nitrogen oxide emissions, 20% of direct particulate matter emissions, and 83% of sulfur oxide emissions. New technologies and fuels could significantly reduce the amount of air pollution from maritime shipping traffic. However, international standards for ships are currently far short of being sufficient to address air pollution and its impacts in populated areas.

The U.S. government recently submitted a proposal to the International Maritime Organization (IMO) which would set much more stringent standards for particulate matter, nitrogen oxides, and sulfur oxides. The U.S. proposal is a flexible approach requiring the use of 0.1% distillate fuels within a certain distance of the coastline and while in port, or a range of technologies resulting in equivalent emission reductions. The U.S. proposal will be considered at the April 2008 meeting of the IMO subcommittee engaged in developing a new emissions standard. While an international solution through the IMO process is preferred, the states are committed to achieve equivalent emissions reductions through other avenues, if the IMO does not act on a timely basis. U.S. EPA, Environment Canada, and the California Air Resources Board are currently working on gathering the technical data that will support the federal governments' application to the IMO. The California Air Resources Board is also gathering information that will support local rulemaking efforts in addition to the IMO proposal.

Actions

Polluted Runoff

Action 1.1
Work with the Administration and the U.S. Congress to provide adequate funding for coastal water quality programs to reduce polluted runoff, and enhance monitoring and enforcement of water quality regulations to improve the health of West Coast coastal waters.

Enhancing monitoring and enforcement of water quality laws requires continued funding for the Coastal Nonpoint Source Pollution Control Program, Section 319 of the Clean Water Act, and the BEACH Act. Specifically, the states support reauthorization of the BEACH Act with expansion of allowable uses of funds, such as source identification. The states will also advocate for continued funding and expansion of the West Coast Estuary Initiative. The states recognize that available government funding and capacity for addressing land-based pollution are limited, and that these resources must be focused to result in significant change.

Timeframe: Ongoing.

Action 1.2

Make Low Impact Development (LID) a priority for the West Coast by focusing future grant and incentive programs to state and local governments on this objective.

Examine and share incentive-based programs to support local government efforts for community planning using LID strategies. The states will collaborate on grant programs and share lessons learned to effectively provide incentives and assistance for communities to pursue activities aimed at reducing the impacts of development in coastal areas. Further, the states will coordinate with NOAA and local governments to bring coastal community planning and development training to six interested West Coast communities (two in each state). These communities will likely include those that are presently updating, or plan to update, their general plans. The training can focus on growth alternatives and related topics, such as water quality, financing mechanisms, and hazards and climate adaptation.

Timeframe: Initiated within 18 months of release of the final action plan. Training will be conducted by summer 2009.

Harmful Algal Blooms and Hypoxia

Action 1.3

Exchange information between experts in all three states on management tools and techniques to promote development and operation of predictive capabilities of harmful algal blooms and hypoxia. Support the expansion of ocean observing system monitoring efforts amongst the three states for these purposes.

The states will explore the development of predictive capabilities for alerting ocean users and resource managers of HAB and hypoxia events. To do so, in 2008 the states will hold a HAB workshop in conjunction with federal partners to reach consensus on the present state-of-knowledge and prioritize the information needed by decision makers to lessen the impacts of the HAB events on humans and critical marine resources. The three states will improve the general understanding of hypoxic events and their impacts along West Coast by working with federal, state, and academic experts to record and track incidences.

Timeframe: HAB workshop will be held in 2008. Other timelines may be identified in the final action plan.

Marine Debris

Action 1.4

Establish baseline estimates of marine debris and derelict gear off the West Coast and set reduction goals. Support state and federal policies for achieving marine debris reduction goals.

Several recent initiatives across the West Coast have called for a significant reduction in marine debris and the institution of prevention measures. The states will agree on

baselines, established by assessing data collected by clean up programs, state and federal agencies, and nonprofit organizations. The states will then identify a target reduction level to achieve by various prevention and clean-up measures, and will partner with and pursue resources from the NOAA Marine Debris Prevention and Removal Program. The states will share lessons learned from existing and emerging state and federal programs and guidelines to pursue safe and effective debris and gear removal. The states will evaluate existing activities such as the annual coastal clean-up day and litter prevention programs to effectively expand marine debris reduction activities.

Timeframe: Initiated within 18 months of release of the final action plan.

Maritime Shipping Emission Controls

Action 1.5

Urge the International Maritime Organization to adopt the U.S. proposal which sets stringent emission standards for ocean going vessels.

The states will work with the U.S. EPA to gain approval for the U.S. proposal to the IMO to set international standards requiring either the use of 0.1% distillate fuels within a certain distance of the coastline and while in port or a range of technologies resulting in equivalent emission reductions. As a result of this measure, air pollution from maritime shipping will be significantly reduced regionally and worldwide. The measure is estimated to reduce sulfur emissions alone by 80%.

Timeframe: Work with the U.S. EPA to gain approval of the IMO subcommittee in April 2008.

Priority Area 2:
Protect and Restore Ocean and Coastal Habitats

Vision	Goals
Estuarine, marine, and coastal habitats are ecologically healthy and allow for public enjoyment and sustainable use.	• Identify key habitats to protect and restore along the West Coast. • Restore estuarine habitats and their function. • Eradicate invasive *Spartina* cordgrasses coast-wide.

Issue

Pacific Coast ecosystems contain many unique habitats, such as the rocky intertidal zone, estuaries, and near shore reefs, which support a diverse array of marine life. Populations that live in these important habitats are linked through the California Current, which generally flows southward along the coast from southern British Columbia to southern Baja California. Features such as upwelling zones, freshwater plumes, off-shore jets, and circulation eddies all affect the movement of the California Current, which in turn sustains the West Coast's unique coastal and offshore habitats. The ecosystems of the California Current contain the kelp, zooplankton, and krill that are the foundation of a food web supporting sea mammals like the humpback whale and elephant seal, millions of seabirds, sea turtles, slow-growing deep sea corals, and fish species such as salmon, halibut, and crab that are important for commercial, recreation, tribal and subsistence harvest.

These distinct marine features and habitats contribute to the overall health of ocean ecosystems. Many of these marine habitats provide high economic value, but some human uses degrade these resources. These human impacts, coupled with steadily increasing human presence on the coast, translate into the continued vulnerability of coastal and marine habitats to further degradation or loss. In addition, already stressed marine habitats and their resident plant and animal communities are threatened by the influences of climate change on their location, diversity, and abundance (e.g., sea level rise, water temperature differences, and circulation changes will force ecosystems to change and alter species distribution). These communities are also jeopardized by the spread of aquatic invasive species, many of which thrive in degraded environments.

Aquatic invasive species are considered one of the greatest threats to native species and habitats. The introduction of aquatic invasive species into West Coast waters threatens the ecological, social, public health, and economic integrity of the region's marine resources. Because these species have few natural controls in their new habitat, they spread rapidly and destroy native plant and animal communities, damage recreation opportunities, lower property values, and

impact irrigation, water distribution systems, and water-dependent industries. One estimate suggests that aquatic invasive species cause a loss of $120 billion annually to the U.S. economy.[2]

There are a variety of vectors through which aquatic invasive species may be introduced, including release from ballast water, escape from aquaculture production areas, the use of live bait, inappropriate disposal of unwanted aquarium species, or transportation on the hulls of commercial and recreational vessels. Examples of aquatic invasive species presently found on the West Coast include cordgrasses (*genus Spartina*), European green crab (C*arcinus maenas*), Chinese mitten crab (*Eriocheir sinensis*), and *Caulerpa taxifolia.* All three states have undertaken multimillion dollar projects to control or eradicate aquatic invasive species within their boundaries.

Restoration and protection of coastal and marine habitats from invasive species, detrimental human uses, and damaging activities are essential to maintaining the ecological integrity and economic well-being of the region.

Issue Analysis

The three states have, to varying degrees, identified and established levels of protection for coastal and marine habitats and species. However, the states have not conducted an identification exercise that focuses on contributions of key habitats to the health and sustainability of the larger ecosystem on a regional scale.

Similarly, while each state has conducted a significant effort to eradicate marine invasive species, there has not been a coordinated method of regional communication or eradication. Because of this, invasive species that are introduced or re-introduced by interstate vessel traffic and coast-wide ocean currents will persist despite removal efforts. It is therefore crucial that all three states work together to comprehensively eradicate species, such as non-native cordgrasses, which are impacting rare habitats across the West Coast. There is a substantial amount of information available about how to best eradicate non-native *Spartina* cordgrasses. Washington State has already succeeded in removing 85% of the invasive cordgrasses in Willapa Bay, once a heavily infested area. California has aggressive efforts to eradicate non-native cordgrasses in San Francisco Bay, but non-native cordgrasses have also been found in Humboldt Bay, and eradication efforts there would have to be significantly augmented to eliminate the transportation of seeds from Humboldt Bay to Oregon and Washington.

Aquatic Invasive Species

Research and monitoring for aquatic invasive species are a highlighted need under **Priority 6**. The three states require aquatic invasive species research and monitoring in order to understand the relevant risk that hull fouling, live bait, and aquaculture present to the region in terms of introducing invasive species.

The principle federal legislation concerning aquatic invasive species is the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA) as revised by the National Invasive Species Act of 1996 (NISA). The law created the Aquatic Nuisance Species Task Force,

[2] Pimentel, D.; Lach, L.; Zuniga, R.; Morrison, D. 2000. Environmental and economic costs of nonindigenous species in the United States. *Bioscience* 50:53-65.

co-chaired by NOAA and the U.S. Fish and Wildlife Service and dedicated to preventing and controlling aquatic nuisance species. To become eligible for federal funding, each state is to develop an Aquatic Invasive Species Management Plan for approval by this Task Force. NISA amendments to NANCPA also created the Western Regional Panel on Aquatic Nuisance Species to identify priorities, coordinate exotic species program activities, and advise public and private interests on control efforts in the region.

Under NISA, the U.S. Coast Guard has established mandatory ballast water management requirements for vessels entering the U.S. Exclusive Economic Zone, including retaining ballast water on board, conducting mid-ocean exchange, or using an approved ballast water treatment method. Washington, Oregon, and California have individually passed mandatory ballast water exchange and management laws, which are similar to the federal law but include additional requirements for vessel traffic. The Pacific Ballast Water Group, consisting of members of the shipping industry, state and federal agencies, and environmental organizations, has provided the forum for the states to coordinate their ballast water policies.

Findings

Key Regional Habitats

Finding 2A
The identification of key habitats (or "important ecological areas") for the West Coast is a critical first step for future potential protection efforts relevant to the three states.

Important ecological areas include habitats or marine communities which contribute to an ecosystem's health, including its function, structure, or ability to survive or adapt to changes. For example, rocky seafloor areas are used as feeding, spawning, and nursery grounds and are critical for the survival of many fish and invertebrate species. Identification of the location and health of these key habitats and the potential threats they face would allow appropriate management measures to be considered and could provide a target for expanded monitoring systems.

Currently, there are large gaps in information about seafloor habitat. At the same time, there are multiple unmapped human uses taking place. In effect, identification of habitats and overlapping human uses would contribute to a comprehensive ecosystem and habitat protection strategy.

Seafloor Mapping

Seafloor mapping, discussed in **Priority 6**, will help fill gaps in understanding about the types and distribution of seafloor habitats.

Finding 2B
Estuarine habitats and their ecological functions are crucial for supporting sensitive species and for sustaining the coastal-dependent economy.

Estuarine systems, such as coastal wetlands, are essential to the life stages of several threatened or endangered species, including salmonids. Salmonids rely on estuarine habitats twice during their lifetimes: first as young smolts preparing to enter the ocean

and again as adults returning from the ocean to their native stream to reproduce. In addition, tidal wetlands, eelgrass beds, and expanses of benthic habitat provide necessary habitat for many species of marine fish, Dungeness crab, migrating waterfowl and shorebirds, and shellfish. Estuaries are among the most biologically productive habitats on the planet and are key areas for aquaculture and recreation.

Marine Invasive Species

Finding 2C
The battle to eradicate marine invasive species can no longer be fought effectively state by state since waters are truly shared West Coast wide.

Despite ballast water management efforts, some invasive species are transported between states on the California and Davidson Currents. A recent study by Portland State University[3] found that drift cards released in three West Coast bays were found as far away as Alaska. The three states must take a regional approach to the issue, including working with our neighbors in Mexico, British Columbia, and Alaska to successfully eradicate introduced species.

Finding 2D
Non-native cordgrasses (genus Spartina) *threaten the already rare mudflat ecosystems of the West Coast, and present an opportunity for the states to implement a successful West Coast-wide eradication effort.*

Four species of non-native *Spartina* currently occur between Comox Harbor in British Columbia and San Francisco, California. Where established, these invaders convert estuarine mudflats and salt-marsh ecosystems into uniform expanses of cordgrass, significantly reducing foraging habitat for migratory and shorebird populations and dramatically shifting the nutrient cycle.

Spartina alterniflora is prevalent in San Francisco Bay, where it threatens to extirpate the native cordgrass (*Spartina foliosa*) by competition and hybridization. In Humboldt Bay, *Spartina densiflora* dominates over 90% of the remaining marsh habitat, and smaller infestations have taken root in Baynes Sound, British Columbia; Grays Harbor and Puget Sound in Washington; and Tomales and San Francisco Bays in California. *Spartina patens* occurs in all three states, where it forms dense monocultures and has proven difficult to eradicate. *Spartina anglica*, deemed one of the world's 100 worst invasive alien species, is found mainly in Puget Sound, but is also established in San Francisco Bay, and Boundary Bay and the Frazer River delta in British Columbia.

Actions

Habitat Protection and Restoration

[3] Howard, V.; M. Pfauth; M. Sytsma; D. Isaacson. 2007. *Oregon* Spartina *Response Plan*. Prepared for Oregon Department of Agriculture by the Center for Lakes and Reservoirs, Portland State University, Portland, OR. 79 pg.

Action 2.1
Document, describe, and map ecological communities throughout West Coast waters and characterize existing human uses of those areas.

The states will continue to build upon the existing knowledge base of ecological communities and develop geographic information systems (GIS) for the entire West Coast. These systems will be useful for identifying strategies to ensure important habitats are effectively protected. Completing the information databases will require the significant assistance of federal agency, nonprofit, and university partners. The states will also work with fishermen and tribes to identify and characterize habitats. This enhanced characterization of habitats will be supported by seafloor mapping data and additional information and studies related to the California Current. In addition to more thoroughly understanding the interactions of marine species, states will document the range of human activities in state ocean waters. Information about use patterns can then inform decisions made by states to implement protection measures.

Cooperative Research

Cooperative research and seafloor mapping are also referred to in **Priority 6**.

Timeframe: GIS will be complete by 2012. Other timelines may be identified in the final action plan.

Action 2.2
Restore estuarine habitats, including coastal wetlands, to achieve a net increase in habitat and their function by at least ten percent over the next ten years.

In cooperation with local, state, and federal agencies, nongovernment entities, and stakeholders, the three states will work to restore estuarine habitats along the West Coast, with a goal of attaining a net increase in habitat and function, by expanding existing restoration programs. The states will support establishing benchmarks and indicators to evaluate progress.

Timeframe: Ongoing, with benchmarks and ultimate goal reached by 2018.

Marine Invasive Species

Action 2.3
Focus efforts on eradicating non-native cordgrasses (genus Spartina)*, which are transported between the three states on ocean currents.*

The states will prioritize the complete eradication of invasive *Spartina* cordgrasses along the West Coast and will share strategies and lessons learned for their effective removal. The states will also cooperate on reducing pathways of introduction and spread of invasive species, such as commercial ships and recreational boats, and set priorities for eradicating existing and new threats that affect multiple states.

Timeframe: Ongoing. Plan for full eradication of Spartina by 2018.

Priority Area 3:
Promote the Effective Implementation of Ecosystem-based Management

Vision	Goals
A healthy, thriving, and resilient marine and coastal ecosystem along the entire West Coast that supports a range of human activities.	• Promote a strong foundation of knowledge for ecosystem-based management using indicators of health. • Strengthen coastal communities' ability to engage in ecosystem-based management initiatives.

Issue

An ecosystem is a geographically specified system of organisms (including humans), the environment, and the processes that control the dynamics of their relationship. Ecosystem approaches to management go beyond single-species or single-issue management by integrating all aspects of the system to evaluate and manage the area and its resources in its entirety. Ecosystem-based management (EBM) is a process that integrates ecological, social, and economic goals, recognizes humans as key components of the ecosystem, and considers ecological rather than political boundaries. Further, an EBM approach assesses cumulative impacts from various sources and strives to balance conflicting uses. It accounts for complexity and uncertainty of natural processes and social systems, incorporating adaptive policies in the face of uncertainties. Using this approach to manage resources requires the consideration of multiple factors such as pollution, coastal development, harvest pressure, ecological interactions, and watershed management. EBM therefore requires engaging multiple stakeholders to define problems, incorporate scientific understanding, set goals, and find solutions.

An integrated ecosystem assessment (IEA) is a scientific approach being used by NOAA to define the current state of ecosystem health. An IEA is an analytical tool that uses information on natural and socio-economic factors in relation to specified ecosystem management goals. It involves and informs citizens, industry representatives, scientists, resource managers, and policy makers through formal processes that contribute to attaining the goals of EBM. The spatial scale is a function of the ecology, geology, and oceanography of a region as well as the scale of management issues and governance structures. For example, while an IEA may focus on a single bay, it also considers large-scale issues, such as climatic variability and linkages to adjacent ecosystems. Therefore, an IEA in one region along the West Coast can be linked to other IEAs and EBM for smaller areas along the California Current. IEAs are currently being conducted by NOAA in partnership with state and local entities to enable EBM.

Implementing EBM will be challenging. The West Coast is dominated by the California Current Large Marine Ecosystem and is affected by large scale atmospheric and ocean conditions of the northeast Pacific Ocean. Transitioning to EBM is further complicated by the existing fragmented, single-issue approach to ocean management, budget constraints on state and federal agencies, gaps in data and information, and a lack of timely connections between research and

management needs. EBM will require a sustained effort to integrate numerous state and federal programs and authorities and to acquire information at an appropriate ecosystem scale for management decisions.

Issue Analysis

The West Coast includes many types of ecosystems that produce healthy habitats for wildlife, as well as products and services that humans require and enjoy. The quality of the products and services offered by these ecosystems is impacted by multiple stressors such as pollution, habitat degradation, climate alterations, and human population growth. An ecosystem-based approach provides a comprehensive understanding of these ecosystems and is needed to support complex and difficult management decisions. Analytical tools, such as IEAs conducted by NOAA (see the box below), are needed to identify how human and natural factors change the ecosystem and what management strategies might accomplish. Moreover, these analytical tools will assure that the EBM process is dynamic, allowing managers to change course and assess potential impacts of these changes, if necessary, as new information becomes available.

An Integrated Ecosystem Assessment for Puget Sound

NOAA is now embarking on a pilot IEA in Puget Sound, where multiple stressors impact the quality of the products and services offered by the ecosystem and a comprehensive understanding is needed to support complex and difficult management decisions. A variety of other areas along the West Coast, including the Columbia River estuary, San Francisco Bay, Monterey Bay and the Southern California, face a similar array of complex issues. IEAs may provide baseline information and indicators to assess future changes to the ecosystem.

To date, the laws and institutions in place within each state have not been considered from a coast-wide perspective. There are tools and resources existing or underway to address this gap. For example, an online interactive legislative atlas, part of the larger Digital Coast effort to provide data to coastal resource managers, is presently being developed for the West Coast states by the NOAA Coastal Services Center. This atlas includes searchable legislative summaries and provides a spatial perspective of ocean and coastal laws and resource agency jurisdictions. The effort is expected to assist with the challenges of implementing EBM on the West Coast, and will provide a snapshot of the policy infrastructure from a regional and state-level perspective, allowing the identification of factors that assist or hinder effective EBM. Related to this, California has completed an inventory and overview of laws pertaining to management of ocean and coastal resources, and other state-specific and region-wide efforts to identify pertinent laws and jurisdictions are being developed.

Although the three states are beginning to consider EBM on a regional scale, a number of efforts along the West Coast have already engaged stakeholders, managers, policy makers, and scientists in ecosystem-level efforts at local and smaller regional levels. Such collaborative efforts have been important local drivers of EBM, and are taking place in locations such as the San Juan Islands, Washington; Port Orford, Oregon; and Elkhorn Slough, Morro Bay, and Ventura, California, as well as a new effort in Humboldt Bay (see the box to the right). In these places, agencies and stakeholders are already partnering to identify specific EBM objectives and address the obstacles to attaining those goals.

Ecosystem-based approaches to fishery management are increasingly recognized as important tools by state and federal governments. The Pacific States Marine Fisheries Commission's definition of ecosystem-based fishery management acknowledges the importance of understanding ecosystem dynamics and human influences, and underscores the challenges of balancing competing goals of fishery extraction and conservation.

The Pacific Fisheries Management Council (PFMC) is presently developing a Fishery Ecosystem Plan that will incorporate ecosystem-based fishery management principles. The plan will not replace existing fishery management plans (FMPs), but will serve as an umbrella document that complements existing FMPs by introducing new authorities, new scientific findings, and new theories to the PFMC process. The Fishery Ecosystem Plan will cover species not contained in existing FMPs, illuminate the connections between existing FMPs, and provide coastwide policy guidance.

Community-based EBM Programs: An Example from Humboldt Bay, California

The Humboldt Bay Ecosystem Program, coordinated by the Eureka Sea Grant office, will build a framework for partners to collaborate on EBM, prepare proposals on high priority issues to secure funding for EBM efforts, and develop recommendations for establishment and maintenance of a centralized Humboldt Bay Ecosystem database.

Findings

Finding 3A
Single-sector approaches to ocean and coastal management can inhibit effective management of ocean and coastal ecosystems.

Both the U.S. Commission on Ocean Policy and Pew Oceans Commission found that protection of critical ecosystem functions is difficult to achieve by relying on the historic focus on single-sector governance approaches. Overlapping jurisdictions and other features of governance that inhibit ecosystem-based management have been recognized for a long time. All three states recognize this fact and are improving ways to enhance ecosystem health through the implementation of ecosystem based management approaches. Implicit in the Governors' agreement itself, and its implementation, are the preliminary steps toward coordinating overlapping jurisdictions on a regional level.

Finding 3B
Most information about ecosystem health is based on the assemblage of sector based information sources, instead of from assessments intended to address the overall health of ecosystems.

The assessment of the health of regional ecosystems will be difficult absent this type of analysis. Yet, conducting these assessments will be complicated and require significant fiscal investment to complete. Federal assistance (both technical and fiscal) would be required for the West Coast states to conduct such an analysis. To achieve this, the federal government could provide a toolbox of standardized parameters, key indicators, and drivers of ecosystem health that would be used by those that implement EBM. A few of these parameters may be included in all assessments, while others would be chosen

from the toolbox based on the unique characteristics of the geography or system of focus. These indicators should cover environmental, social, and economic factors and incorporate common, transferable measures to enable comparison of ecosystem health among areas and over time.

Finding 3C
Sustainable fisheries depend on healthy ecosystems. Fishery management must no longer be based on a single-species approach but focus on the ecosystem as a whole.

Ecosystem-based fishery management considers ecosystem-level interactions instead of focusing on individual species. The habitat, predators, prey, and other community interactions of the target fishery are taken into account when setting fishing policies. This approach provides the foundation for long-term sustainability of fisheries, but implementation is hindered by data needs for decision-making and building consensus and by jurisdictional management boundaries that do not reflect the true range of species.

Actions

Action 3.1
Examine ongoing community-based efforts using ecosystem management principles in all three states and share lessons learned from these initiatives in order to encourage effective ecosystem-based management efforts across the West Coast.

Several communities are currently working towards incorporating ecosystem-based management principles into local management efforts. These initiatives involve extensive partnerships, and are taking place in areas across the West Coast. For example, projects are underway in the San Juan Islands, Washington; Port Orford, Oregon; and Humboldt Bay, Elkhorn Slough, Morro Bay, and Ventura, California. The three states will share information on these projects as part of an information-sharing network for community-based initiatives, to gain insight on putting EBM into practice. This effort will facilitate the exchange of lessons learned and will cultivate local, state, and federal agency coordination for regional-level ecosystem management across the West Coast.

Timeframe: Establish West Coast EBM Network during 2008. Other timelines may be identified in the final action plan.

Action 3.2
Assess physical, biological, chemical, and socio-economic factors in ecosystem health across the West Coast to establish standards and indicators for ocean health.

The states support the development of an integrated ecosystem assessment (IEA) for the West Coast, with the assistance of the federal government. The assessment will establish standards and indicators for ocean health. In concert with state and federal agencies, local and tribal governments, NGOs, and academia, the states will hold a joint workshop in late 2008 to discuss existing efforts along the West Coast. The workshop will also aim to determine what other information is required (e.g., high resolution remote sensing data,

seafloor maps, and ocean observing system data) to advance ecosystem management approaches.

Timeframe: IEA workshop will be held in fall 2008. Other timelines may be identified in the final action plan.

Action 3.3
Strengthen coordination between the three state representatives on the Pacific Fisheries Management Council (PFMC).

As the Governors improve tri-state coordination and focus on solutions to regional issues, the three state representatives on the PFMC will enhance communication and cooperation in support of regional fisheries management as appropriate.

Timeframe: Ongoing.

Priority Area 4:
Reduce Adverse Impacts of Offshore Development

Vision	Goal
No new offshore oil and gas leasing and development shall occur in state tidelands or within the federal Outer Continental Shelf. The energy potential of wind, wave and tidal currents are appropriately and safely considered along the West Coast.	• State and federal agencies work from a shared strategy to ensure that future offshore energy development activities along the West Coast are comprehensively planned to maximize energy generation while minimizing negative impacts to marine life and coastal communities.

Issue

The three states have determined that new offshore oil and gas development in ocean waters along the West Coast is unacceptable due to the harmful impacts to the marine and coastal environment. Therefore, the states are committed to exploring options for developing renewable energy sources in an environmentally sustainable manner. Recent advances in wind, wave, current and tidal energy conversion technologies have improved the economic viability of these alternatives. However, while pilot projects around the world are beginning to provide a better understanding of the benefits and impacts of these nascent technologies, they are largely untested in West Coast waters.

There is a high degree of interest to develop electricity using wave energy and tidal flow along the West Coast, particularly from the San Francisco Bay to areas to the north. Over the past year, energy development and study proposals for projects in all three states were filed with the Federal Energy Regulatory Commission (FERC). State and federal agencies across the West Coast are working to develop effective regulatory and permitting frameworks to deal with offshore alternative energy. Currently, however, no coordinated effort exists among the three states to address the feasibility of energy generation and the potential for environmental impacts on a regional basis.

Issue Analysis

As the need and demand for alternative sources of energy continues to rise, the West Coast states are examining options for offshore wind, wave, current, and tidal energy production. Private and public entities have received preliminary permits to explore the feasibility, efficiency, and impacts of these technologies. Many are pursuing (or would like to pursue) pilot projects or long-term licenses for projects in West Coast waters. Approving these activities on a long-term basis requires an understanding of the presence and status of sensitive marine and coastal areas, as well as clarification of the authorities, regulatory policies, and permitting processes for offshore energy production. As a region, there is a need to establish baseline information that could be incorporated into environmental or programmatic impact studies for siting alternative energy facilities in the outer continental shelf and in state coastal waters, bays, and estuaries.

Furthermore, the lack of data on environmental impacts of these new technologies makes it difficult to permit or license projects. Often agencies attempt to improve this understanding by requiring intensive monitoring and adaptive management.

Ocean Energy

Research and monitoring for alternative ocean energy technologies are a highlighted need under **Priority 6**. To make wise decisions on siting ocean energy projects, the states require the identification of sensitive areas and their present conditions. The states will therefore prioritize data collection of baseline environmental, social, and economic information on ocean resources and existing activities that would be affected by offshore energy development, and will pursue monitoring of ocean energy projects to assess impacts once the technologies are in place.

Status of Ocean Energy in Washington

In 2005, Washington passed landmark legislation promoting the use of renewable energy sources; in 2006, voters passed legislation mandating 15% of new energy generation from a portfolio of renewable technologies. Washington now has a market for alternative energy with a generally robust demand system and green energy purchase options. Now, officials must develop the regulatory framework for this expanded portfolio of sources. One of the challenges is conflicting perspectives over the build-out of the transmission system as energy projects move forward. To date, ten preliminary permits have been issued by FERC to study tidal energy production in Puget Sound and other major estuaries. Finavera is pursuing a license for a wave energy project in Makah Bay on Washington's outer coast, the furthest along in the process of any of these projects. FERC recently released an environmental assessment as part of the licensing process.

Status of Ocean Energy in Oregon

Oregon currently has seven active preliminary permit applications before FERC, four of which already have been approved. For one project, the Reedsport application, state and local government, federal agencies, and stakeholders have developed a declaration of cooperation which identifies and provides a framework for resolving specific issues and concerns. Stakeholders are also considering a possible settlement agreement for the FERC process. Private energy developers are expected to install the first power generation buoys (a 14-buoy array) in spring of 2009 near Reedsport. In addition, a test buoy and scientific monitoring buoys were deployed in summer 2007, near Newport.

To further develop the technical and scientific basis for making wave energy decisions, Oregon State University and the Oregon Coastal Management Program will hold a scientific workshop in October 2007. The Governor's Office is coordinating and providing guidance to state agencies in assessing the states' regulatory environment for wave energy development and developing options for preparing a comprehensive wave energy and ocean use framework plan to meet a variety of concerns being raised by stakeholders and coastal communities.

Status of Ocean Energy in California

In 2002, California legislation established the California Renewables Portfolio Standard program, which requires an annual increase in renewable energy generation of at least one of

utilities' sales, with an ultimate goal of 20% by 2017. The goal was then accelerated, and now requires utilities to obtain 20% of their power from renewable sources by 2010. California presently has five proposed energy development projects, primarily for wave energy in Mendocino and Humboldt Counties and one for tidal energy in San Francisco Bay. The California Energy Commission and Ocean Protection Council (OPC) recently agreed to jointly fund a study examining the potential environmental impacts of wave and tidal energy technologies. The OPC is working with state and federal regulatory agencies to identify appropriate permitting processes and is planning to host up to three informal public workshops (the first of which will be held in late October 2007 in Eureka) to hear concerns from ocean users, including fishermen and other concerned stakeholders.

Findings

Offshore Oil and Gas Development

Finding 4A

Future oil and gas leasing, exploration, and development off the West Coast will cause unacceptable adverse impacts.

The long standing position of all three states is that offshore oil and gas development has unacceptable detrimental impacts to the marine life and habitats of the West Coast. This is based on thorough evaluations of the impacts from all phases of these operations.

Environmentally Sustainable Energy Development

Finding 4B

New environmentally sustainable energy production could provide reliable sources of energy for the West Coast, but the feasibility and environmental impacts of these technologies is not yet fully understood.

All three states are looking into these technologies and have received proposals to move forward on development.

Actions

Offshore Oil and Gas Operations

Action 4.1

Continue to oppose new oil and gas leasing, development, and production in ocean waters off the West Coast.

This has been the long standing position of all three states, and this position was just re-affirmed by all three governors in their September 29, 2006 letter to the President of the United States and the U.S. Congress. The three Governors will continue to oppose any

proposals by Department of the Interior or legislation under consideration by the U.S. Congress that would facilitate new oil and gas development off the West Coast.

Timeframe: Ongoing.

Alternative Environmentally Sustainable Energy Development

Action 4.2

Explore the feasibility for offshore alternative ocean energy development and evaluate the potential environmental impacts of these technologies.

The three states will support efforts by the Federal Energy Regulatory Commission (FERC), the Department of Energy (DOE), and the Minerals Management Service (MMS) to coordinate and clarify regulatory processes between state and federal waters. The states will collaborate with the FERC, DOE, and MMS to evaluate the potential benefits and impacts of renewable ocean energy projects off the West Coast, as well as developing the long-term regulatory structure for removal or expansion of activities. Due to gaps in understanding about the presence and status of ocean habitats and associated ecological processes, the states will jointly support the collection of baseline environmental, social, and economic information on ocean resources and existing activities that would be affected by offshore development (see Priorities 3 and 6). The three states and the federal government will host a workshop in early 2008 to consider the issues surrounding offshore energy development, explore the feasibility of a West Coast-wide approach and consistency of state and federal regulatory programs, and begin drafting a regional plan. The states will send a letter to SIMOR and, in cooperation with MMS and FERC, to the Department of Energy pursuing federal support for the workshop.

Timeframe: The workshop on offshore energy will be held in early 2008. Other timelines may be identified in the final action plan.

Priority Area 5:
Increase Ocean Awareness and Literacy Among Citizens

Vision	Goal
The West Coast has an informed citizenry that understands the value of ocean and coastal resources, processes, and ecosystems.	• Share ocean education opportunities with the entire population to elevate stewardship of coastal and marine resources and awareness of the connections between the ocean and our health and economic well-being, and between our activities and ocean health.

Issue

The U.S. Commission on Ocean Policy noted that an interested and engaged public is needed to successfully address complex coastal and ocean issues that effectively balance use with conservation. Today, as the Commission pointed out, the American public does not understand the importance of the ocean to their lives or to the quality of life on Earth. According to a national survey on ocean awareness, nearly 60% of Americans do not realize that more plants and animals live in the oceans than on the land; 75% mistakenly believe that forests, rather than oceans, are the planet's major source of oxygen; and 40% are unaware of the essential role oceans play in regulating climate.[4]

The need for greater public awareness about the conditions of our nation's coasts and oceans was identified in the 2004 Pew Oceans Commission and the U.S. Commission on Ocean Policy reports. The U.S. Commission on Ocean Policy report stated that "this information gap is a significant obstacle in achieving responsible use of our nation's ocean and coastal resources, empowering public involvement in ocean-related decision making, and realizing support for wise investments in, and management of, ocean-related activities."[5]

Numerous marine science education and awareness programs already exist on the West Coast. Some, such as those operated by Sea Grant and other academic programs, involve curricula in the region's schools. Others are local interpretive programs that protect specific coastal sites, such as at those at Año Nuevo State Reserve in California and Haystack Rock in Oregon. Visitor centers and aquariums provide focal points for public education, while programs such as the nationwide ReefCheck, Washington's COASST (Coastal Observation and Seabird Survey Team) and California's Beach Watch, train the public to collect and report data that supplement monitoring efforts and further our understanding of the marine environment.

[4] 1999. Belden, Russonello, & Stewart and American Viewpoint. *Communicating about Oceans: Results of a National Survey*. Washington, D.C.: The Ocean Project

[5] 2004. U.S. Commission on Ocean Policy. *An Ocean Blueprint for the 21st Century*. Chapter 8: Ocean Stewardship: The Importance of Education and Public Awareness. Washington, D.C.

Each of the programs described above individually reaches a target audience on a daily basis. However, there is no comprehensive regional strategy to link these programs in a collective network that can support the growth of a widely embraced, long-term stewardship ethic of the nature prompted by the U.S. Commission on Ocean Policy and the Pew Oceans Commission.

Issue Analysis

Individually, each of the three states is launching or continuing ocean awareness and literacy programs that are complementary but not coordinated. Washington is pursuing strategies to improve ocean education, collaborating with tribes and school districts, and to raise general ocean awareness. The Puget Sound Partnership will be launching a major education effort around recovery of Puget Sound. California is working to enhance K-12 textbook treatment of ocean issues through the Education and the Environment Initiative led by the California Environmental Protection Agency, and works with the NOAA National Marine Sanctuary Program on the statewide "Thank You Ocean" campaign. Oregon is supporting a variety of efforts including diverse public educational and interpretive programs, such as those at the Hatfield Marine Science Center in Newport and the South Slough National Estuarine Research Reserve. Marine science curriculum was developed by the Oregon Institute of Marine Biology for public schools along the southern Oregon coast. In addition, the Oregon Coastal Management Program provides resources for the ongoing development and administration of the Oregon Coastal Atlas, as well as publications and materials to improve the public's understanding of critical coastal and ocean management issues.

In addition to the public ocean education efforts described above, all three states have annual coastal clean up programs that teach citizen volunteers about marine debris and voluntary clean marina programs that aim to improve local water quality by promoting best practices at marinas (see box at right).

Marine Debris and Clean Marinas

Marine debris is addressed in **Priority 1**.

Clean marina programs provide information to marine facility managers and boaters on eliminating or reducing the input of pollutants such as oil, cleaning chemicals, sewage, fish waste, and trash – into the environment. Clean marinas are also discussed in **Priorities 1 and 7**.

Findings

Ocean Awareness and Literacy

Finding 5A
Ocean and coastal stewardship begins with the citizens of the West Coast; it is important to expand their awareness of ocean and coastal issues to protect and sustain resilient marine ecosystems.

All three states have a wide variety of awareness programs run by all levels of government, non-governmental entities, academia, and the private sector. Most of these programs are not linked or coordinated in a systematic way.

Finding 5B

Nationally funded programs exist to support ocean education efforts, which represent a significant resource for the three states in establishing an ocean literate public.

The National Science Foundation funded three regionally-focused Centers for Ocean Sciences Education Excellence (COSEE) on the West Coast: COSEE California, COSEE West, and COSEE Learning Communities. These centers promote partnerships between scientists and educators, design methods and materials for ocean sciences education, and promote public ocean literacy. Other significant ocean education initiatives that may be valuable resources for the states include the National Marine Educators Association (NMEA) and the Pacific Education Institute.

Actions

Ocean Awareness and Literacy

Action 5.1
Integrate ocean science and conservation into expanded environmental education curricula by encouraging changes to education content standards enhancing ocean literacy.

The states will explore avenues for creating or expanding K-12 ocean education curriculum in schools and seek opportunities for hands-on educational experiences for children. To do so, the states will pursue partnerships with the Centers for Ocean Sciences Education Excellence (COSEE), the Southwest Marine/Aquatic Educators Association and Northwest Aquatic and Marine Educators chapters of the National Marine Educators Association (NMEA), the Pacific Education Institute, and others.

Timeframe: Initiated within 18 months of release of the final action plan.

Action 5.2
Support outreach efforts to decision-makers at all levels and encourage improvement and expansion of volunteer programs such as clean marina initiatives.

The states will seek to improve communication between education centers along the West Coast to help expand opportunities for public awareness and citizen science activities. The states will request adequate federal funding and expansion of environmental education.

Timeframe: Initiated within 18 months of release of the final action plan.

Priority Area 6:
Expand Ocean and Coastal Scientific Information, Research, and Monitoring

Vision

A sustained research and monitoring program for the entire West Coast that provides timely and relevant information to support coastal and ocean management programs.

Goals

- Create a regional research priority plan to strategically focus investments in improved scientific understanding of ocean resources and processes. Ensure regional data comparability to allow a regional gauge of the status of the ecosystem.
- Improve understanding of existing and emerging issues that affect ocean health (such as harmful algal blooms, hypoxia, invasive species, ocean energy, and climate change) and the drivers of change (including economic, technological, demographic, and cultural trends) so that ocean and coastal managers have necessary information to make appropriate management decisions.
- Map the seafloor bathymetry and habitat of all state tidelands out to three miles by 2020.

Issue

Connecting science to management is a crucial foundational piece of any decision making process, particularly for ocean and coastal policy. Although management decisions ideally incorporate a high level of certainty from supporting information, managers are often faced with uncertainty in what is known scientifically about an issue, forcing decisions to be made without a sufficient understanding of the ecosystem, its inhabitants and processes, and the outcomes of a particular decision. It is important to recognize that resource managers need information in the near-term to make decisions, but the time required to provide research results can be substantial due to research processes required for robust scientific conclusions. This is further complicated by the inherent complexity of ecosystem-based management, which often requires information synthesized from many disciplines that traditionally have not been integrated.

For the states to support the collection and dissemination of scientific information, they must identify data priorities for management issues, and sustain and expand data collection and analysis through monitoring and research exercises. Extensive research and monitoring activities are underway across the West Coast, including rigorous research conducted at academic and other reputable institutions and widespread short- and long-term monitoring efforts that contribute to the region's ocean observing systems. Of all these efforts, mapping seafloor bathymetry and benthic habitats is of paramount importance, which when completed will provide

a foundation to understanding the ocean and coastal environment and resources. As a result, seafloor mapping is also vital to advancing ecosystem-based management.

In addition to seafloor maps, baseline data is critical for establishing the present status of ocean health, and monitoring is required both for near-real time change detection and for time-series data to detect long-term shifts. Because the California Current connects and drives the waters off each state as one complete system, it is important to use baseline and monitoring data to understand the system on a regional basis. There are a number of efforts along the West Coast to bring this information together through the coordination of ocean observing systems. These efforts, including the three regional associations along the West Coast and the California Current-wide effort undertaken by the Pacific Coastal Ocean Observing System (PaCOOS), need further development and involvement from the states to achieve the goal of West Coast-wide baseline and monitoring information. The three states now have a unique opportunity to combine data collection and monitoring at local, state and regional scales along the West Coast.

Ocean Observing Systems Regional Associations of the West Coast

NANOOS *(www.nanoos.org)*
Northwest Association of Networked Ocean Observing Systems

CeNCOOS *(www.cencoos.org)*
Central and Northern California Ocean Observing System

SCCOOS *(www.sccoos.org)*
Southern California Coastal Ocean Observing System

Issue Analysis

Common benchmarks, comprehensive and integrated data sets, and additional research are needed to monitor ocean health on a regional scale. The three states are identifying specific areas as joint priorities for research and monitoring to obtain a fuller understanding of system dynamics, particularly related to climate change and circulation patterns. These priorities will be incorporated into the preparation of a regional research plan that is already underway.

To connect science to management, the Sea Grant programs in Washington, Oregon and California are collaborating with a variety of agencies and stakeholders to collect public comment and develop a comprehensive Regional Research and Information Plan for the California Current Large Marine Ecosystem. This plan is in response to recent national recommendations calling for a regional approach to research planning, and is funded from a $500,000 National Sea Grant Program grant. Extensive workshops are being held in all three states to identify and prioritize research and information needs for the West Coast. The process is designed to engage stakeholders across a broad range of ocean and coastal interests, including coastal residents, scholars and researchers, community organizations, marine conservation groups, state and local governments, resource managers at both the state and federal levels, and any person or group who depends on ocean resources for livelihood or recreation. These priorities will be used to seek research that can help support all the objectives included in this action plan.

Seafloor Mapping

Mapping all state waters, including large estuaries and bays (i.e., San Francisco Bay, Puget Sound), with uniform acceptable standards would provide significant support for implementing

Seafloor Map Applications

In addition to supporting research and management of living marine resources and providing baselines for monitoring change, seafloor maps can:

- Support the prediction of hypoxia and recurring "deadzones" (**Priority 1**)
- Locate submerged debris or cultural resources (**Priorities 1, 2**)
- Increase the knowledge base for essential fish habitats and other key habitats (**Priorities 2, 3, 6**)
- Assist in siting offshore infrastructure, such as pipelines, energy facilities, communication cables, and ocean observatories (**Priorities 4, 6, 7**)
- Give insight to shoreline processes and impacts from storms (**Priority 7**)
- Support tsunami, storm surge, and earthquake hazard assessments (**Priority 7**)

many of the Agreement's seven priorities. There are a large number of complementary areas and management issues that would be served by mapping bathymetry and marine habitats along the West Coast.

Three of the primary challenges associated with completing a seafloor map for the West Coast are identifying and securing funding sources to get comprehensive seafloor mapping accomplished, developing uniform mapping standards within and across the three states; and designing and completing a uniform map product. The status of seafloor mapping in each state is described in the following paragraphs.

Status of Seafloor Mapping in Washington

To date, a number of sections of the Washington margin have been mapped at various resolutions by different organizations (e.g., Oregon State University, NOAA, and the U.S. Navy). Presently there is an agreement between NOAA and the U.S. Navy that regulates the acquisition, control, and dissemination of high-resolution bathymetry data within a security zone off Washington and northern Oregon. Over the past several years, habitat mapping has been a high priority for Washington and for coastal treaty tribes. There are also ongoing efforts to complete high-resolution maps for small, isolated areas within sections of Puget Sound through collaborations between academia and state and federal agencies. In addition, the NOAA Olympic Coast National Marine Sanctuary is working to map all waters in its jurisdiction; however, at current rates, it does not expect to finish the effort until 2043.

Status of Seafloor Mapping in Oregon

In 2006, over twenty Oregon-based marine scientists signed a Scientific Consensus Statement for Mapping the Oregon Territorial Seafloor. In 2007, a legislative effort to fund seafloor mapping was initiated by the universities, which ultimately did not succeed. To date, a number of sections of the Oregon margin have been mapped at various resolutions primarily by Oregon State University and NOAA, and additional mapping is ongoing on a limited basis by Oregon Department of Fish and Wildlife (DFW) in state waters. In total, less than five percent of Oregon's territorial sea (within the three nautical mile limit) has been mapped. However, competing ocean uses coming to the forefront in Oregon (e.g., energy, aquaculture) have recently highlighted the need for a complete map of the seafloor, and another legislative effort is anticipated for the 2009 session.

Status of Seafloor Mapping in California

Currently, approximately 33% of California's territorial sea and offshore waters has been mapped at various resolutions by a combination of academic and federal agencies. The state

has undertaken a major initiative to complete a high-resolution seafloor mapping survey of California's territorial sea, through a collaboration of the California Ocean Protection Council (OPC), the California Coastal Conservancy, the California Department of Fish and Game, USGS, California Geological Survey, California State University Monterey Bay, and NOAA. The OPC has made it a goal to map all state waters over the next five years.

Findings

Regional Marine Research

Finding 6A

The West Coast currently lacks a plan to identify and help direct priorities for regional marine research.

There are many marine management issues common to all three West Coast states. Addressing those issues in one state will impact the neighboring states. For example, the three states identified harmful algal blooms, hypoxia, aquatic invasive species, ocean energy, and climate change as common issue areas requiring specific research for more effective management decisions. State staff and the Sea Grant community are working to develop a research plan that will improve knowledge throughout the West Coast on pervasive issues affecting each of the three states, such as those listed above. A plan developed by the West Coast Sea Grant programs is intended to identify these issues and to direct state and federal investments. Further, cooperative research between scientists and fishermen, and the incorporation of traditional knowledge from tribal members, can quickly advance the knowledge base of the status of the health of West Coast ecosystems (see the box at right).

Cooperative Research

Cooperative research for habitat identification and characterization is referred to in **Priority 2**.

In 2008, the California Ocean Protection Council (OPC) will consider funding a cooperative Fisheries Research Institute that would develop, solicit, and fund projects that create equal partnerships among fishermen and academic scientists to address the fishery independent data needs of state and federal agencies. OPC staff will work with the Institute to determine if the program can be expanded West Coast-wide since many species cross state and federal jurisdictions.

Finding 6B

Coordinating information across the regional ocean observing systems in the California Current and major estuaries is necessary for a comprehensive understanding of ocean health.

The West Coast ocean observing systems and regional associations are major resources for the states for obtaining essential regional information on ecosystem health, water quality, living marine resources, renewable ocean energy development, and responses to climate change.

Seafloor Mapping

Finding 6C
Mapping the entirety of the state waters off the West Coast will provide critical information for protection of ecosystems and economic infrastructure.

The availability of a comprehensive high-resolution bathymetric map for the West Coast is a limitation to addressing priority areas for both state and federal agencies. The states' efforts would benefit greatly from removal of present restrictions on accessibility of seafloor mapping data and improving overall data availability. Completion of a high-resolution, bathymetric map will aid the three states' efforts on tsunami modeling, habitat characterization and identification, spill tracking, alternative energy site selection, and other high priority management issues. Completing comprehensive seafloor maps will require a combination of state and federal resources; in particular, support from USGS and NOAA, and possibly contribution from other partners such as the private sector.

Actions

Regional Marine Research

Action 6.1
Support the West Coast Sea Grant regional marine research needs process by identifying funding sources and partners for a sustained approach to ocean and coastal research.

The three states are participating in developing a regional ocean and coastal research plan led by the West Coast Sea Grant institutions. While the Sea Grant process will take a longer time to fully develop, the three states have identified some regional priorities of concern. The states will prioritize and pursue joint efforts to fund regional scientific research projects where pooled resources or coordinated efforts will maximize the return on research investments to benefit all three states. In addition, the states will work with the four existing ocean observing systems collaborations along the West Coast, federal agencies, tribes, and academia to invest in monitoring to address priority issues. Initial regional priorities identified include harmful algal blooms, hypoxia, aquatic invasive species, ocean energy, and climate change.

Timeframe: The Sea Grant Regional Research Plan is anticipated for release in fall 2008. Other timelines may be identified in the final action plan.

Seafloor Mapping

Action 6.2
Complete a seafloor map of the bathymetry and habitat of all state tidelands and submerged lands out to three miles.

The three states seek to complete a seafloor map of Pacific Coast waters. Each state recognizes the need for a complete understanding of bathymetry and benthic habitat, but although mapping efforts are gaining momentum, fiscal constraints necessitate federal, academia, and private industry partnerships to move forward. To progress, the states will set joint standards, agree on common products, define high priority areas, and estimate a timeline for completion. They will communicate the regional need for a comprehensive seafloor map in a joint letter to the Subcommittee on Integrated Management of Ocean Resources (SIMOR) and will encourage the Department of Defense, USGS, NOAA, and other federal agencies to make existing seafloor mapping data accessible and to better coordinate data collection and sharing in state waters through such groups as the Interagency Working Group on Integrated Ocean Mapping. The states will ask NOAA to establish seafloor mapping as a programmatic goal and to ensure the states have adequate West Coast-based seafloor mapping resources, including hardware, to support these actions. The states collectively support legislation that would further these goals.

Timeframe: Complete seafloor map by 2020. Other timelines may be identified in the final action plan.

Priority Area 7:
Foster Sustainable Economic Development in Coastal Communities

Vision	Goals
Coastal communities are economically and environmentally sustainable over the long term.	• Help coastal communities prepare for impacts associated with declining resource industries, climate change, and impacts of coastal hazards. • Ensure regional sediment management efforts assist coastal communities with both the long term economic benefits associated with ports, harbors, beaches, and shoreline protection, as well as the ecological benefits of coastal and estuarine habitat.

Issue

The economic base for coastal communities is directly related to the health and sustainability of the coast and ocean, through fishing, recreation, tourism, transportation, ports and other activities. Many local coastal communities are struggling because some coastal dependent economic activities are in decline. At the same time, these local governments are challenged with maintaining critical coastal or port facilities and infrastructure. A principal challenge to states, tribes and local communities lies in accommodating increased development in the coastal zone and usage of ocean and coastal areas without degrading or diminishing the environmental goods and services offered by the marine ecosystem.

Along many parts of the Pacific Coast, another challenge is geographic isolation and the resulting reliance on highway transportation and port infrastructure to support the local economy. For example, small ports have difficulties obtaining funding for basic maintenance, such as harbor dredging, and have difficulty affording the expensive disposal of sediments that often contain legacy toxins.

A wide range of businesses depend upon access to the water and shorefront infrastructure to prosper. A vital waterfront economy includes seafood harvesters and processors, freight and fuel companies, marinas, boat builders, transportation ferries, cruise boats, and recreational outfitters. Coastal communities face a potential for losing the traditional waterfront businesses, such as fish markets and other water-dependent activities as they are replaced by homogenous shops and businesses that are unrelated to the coast. A number of the trends in coastal communities are already well documented. For instance: natural resource-based industries are declining while tourism is rising; both the commercial fishing and port industries are undergoing a trend toward consolidation and concentration; housing costs are increasing at a high rate and wages may not be keeping pace. This means that many of those who fill service jobs at the coast have difficulty paying for housing or commute from inland locations to poor-paying jobs.

Preserving and revitalizing working waterfronts can be achieved through establishing value-added businesses; supporting innovative water-dependent uses; providing opportunities for high quality, local seafood production and distribution; and promoting clean marinas and waterfronts.

Clean Marinas

Clean marinas are referred to in **Priorities 1 and 5**.

One critical element of coastal economies that has been altered by human activities is the amount of sediment (namely sand) carried to the coast and the transport of sediment along the coastline. Dam construction and urban development have reduced sediment supply washed downstream to the coast, while shoreline structures such as jetties, groins, and other hardening infrastructure can impede lateral movement of sand along the coast. This sand imbalance is causing sand-starved areas to erode more rapidly than would occur naturally. Erosion along the West Coast undermines the stability of important navigation structures, such as jetties, and leaves many areas more vulnerable to inundation during storms and high waters. Ultimately, the stability and sustainability of coastal communities is threatened.

Climate Change Impacts

Research and monitoring for the impacts of climate change on the coast is a highlighted need under **Priority 6**, as is the utility of seafloor maps for assessing shoreline change and coastal hazards, including tsunami and storm surge.

The effects of climate change contribute an added pressure to the impacts of human alterations of coastal systems. Economies of coastal communities across the nation are facing increased natural hazards and the implications of a changing climate. On the West Coast, communities are beginning to focus on increasing their resilience to these forces. Resilience refers to the ability to prepare for and adapt to ecological, economic and cultural impacts to human and natural communities from events such as coastal flooding, tsunami, or to the longer-term effects of climate change.

Issue Analysis

Federal, state and local governments are cooperating to provide data collection, grants, technology, decision-support tools, and training to coastal communities to address impacts of climate change, coastal hazards and declining fisheries. The primary outcome of these efforts is well-informed officials (local and state decision makers, emergency and floodplain managers, community planners, and coastal resource managers) who can take action on community hazard preparation and mitigation techniques. These coastal communities will be better prepared to respond to and rebound from changes to their community, and will be able to contain the escalating costs of extreme coastal events. Yet, too often coastal communities lack the resources to conduct detailed assessments or obtain the technical assistance necessary to accurately plan for predicted future changes such as sea level rise.

Development of waterfront property, if not properly planned, can alter the character of a coastal community, prevent public access to the ocean, and adversely affect local fishing businesses. California, Oregon, and Washington are witnessing increased development along their sensitive coastlines, some of which is altering the livelihood and character of waterfront

communities. There are existing programs in all three states that support working waterfronts and coastal-dependent businesses. One example of a developing tool to address the problem of limited funding for waterfronts and sustainable fisheries is the California Fisheries Fund. The Fund's primary objective is to provide a permanent source of capital for improving the conservation and financial performance of California's fisheries, protecting fish stocks and habitats, creating better jobs, improving profits, and revitalizing coastal communities. Under this program, ports, communities, and other organizations can obtain loans for infrastructure improvements such as increased off-loading capacity, ice machines, minor cold storage, or processing. Likewise, fishermen can apply for funding to transition to economically viable and environmentally sustainable fishing practices.

Coastal Community Planning

Coastal community planning and development training is an action identified in **Priority 2**. Based on individual community needs, the training can focus on growth alternatives, water quality, hazards, and climate adaptation.

Traditionally, coastal sediments (i.e., sand) are managed on a project-by-project basis. This results in inefficient use of resources and missed opportunities for beneficial uses of sediment. For these reasons, the U.S. Commission on Ocean Policy recommended developing strategies for managing sediment regionally. Increasingly, West Coast states are working to use clean (i.e., non-toxic) sediment as a resource to replenish sediment deficient areas, restore the balance to sediment processes, create and restore habitats, and protect important navigation infrastructure and coastal communities. To do so, the three states are moving toward managing sediment regionally. In this case, regions are not defined as West Coast-wide, but vary depending upon physical processes transporting the sand. As these regions overlap state boundaries, however, it is logical for the states to learn from each other, to share experiences on appropriate strategies, policies, and tools, and to engage the appropriate federal agencies to pursue regional sediment management. Regional sediment management will result in increased beneficial use of dredged sediment, more efficient decision-making, more stable beaches and shorelines, restored habitats, and protected coastal communities and infrastructure.

Sediment Management in Oregon and Washington

Historically, sediment flowing from the Columbia River provided sand for the beaches of northwest Oregon and southwest Washington. Reduction in sediment reaching the coast has resulted in eroding beaches and shoals that support key jetties at the mouth of the river. To solve sediment management issues in the Lower Columbia River, the Governors of Oregon and Washington are supporting the development of a regional sediment plan with other key partners. They are pursuing this work through the Lower Columbia Solutions Group, a bi-state, multi-stakeholder, consensus-based team. Partners include the U.S. Army Corps of Engineers, local ports and coastal communities, other federal and state agencies, the fishing industry, environmental interests, and other non-governmental organizations. Over the past several years, the Lower Columbia Solutions Group has successfully pursued several projects and studies related to sediment management and received funding support from a variety of its member organizations, including both states. However, the group requires additional funding to initiate the multi-year regional sediment planning effort.

In addition to this momentum, the Washington State Ocean Policy Work Group recommended that Washington pursue regional sediment management to improve beneficial use of sediment. At the mouth of the Columbia River, pilot projects to use sediment beneficially have increased information on sediment processes associated with dredged material disposal, improved working relationships, and established a longer-term vision for expanding and routinely maximizing the beneficial use of sediment.

Sediment Management in California
In 1999, California established the California Coastal Sediment Management Workgroup, a partnership of federal and state agencies focused on developing and implementing the California Coastal Sediment Master Plan to protect, restore and enhance California's sediment and beach resources. In total, partners provided $1.2 million to initiate this effort. Development of the regional sediment management plan for California is ongoing. The state, U.S. Army Corps of Engineers, and their partners intend to improve regional navigation and coastal program performance by developing an effective, comprehensive statewide approach to solve complex sediment problems of beaches, shorelines, coastal wetlands, and coastal watersheds as it relates to the beneficial reuse of dredged material from navigation channels and other sources.

Findings

Working Waterfronts and Sustainable Coastal Economies

Finding 7A
A variety of economic and environmental factors have led to the decline of working waterfronts along portions of Washington, Oregon, and California.

Working waterfronts provide a link between land and sea that is critical to sustaining a varied and thriving coastal economy. State and local governments are looking for ways to maintain these working waterfronts, particularly in rural communities that are highly dependent upon them. There are programs in place to revitalize these waterfront communities that could be enhanced and expanded.

Finding 7B
The National Ocean Economics Program houses data on ocean resources and economies that is not available elsewhere, and may be used to establish socioeconomic trends in many coastal areas.

Establishing initial socioeconomic baselines for West Coast coastal communities will provide the foundation for identifying future ocean economic trends. It will identify the states' additional data needs, and indicate to federal agencies (e.g., the Bureau of Labor Statistics) the data required to complete valuable socioeconomic assessments.

Sediment Management

Finding 7C

States have traditionally addressed sediment management on a case-by-case or issue-by-issue basis and have rarely used regional approaches to address the issue.

All three states have emerging regional sediment management processes moving forward, but thus far no West Coast-wide commitment to regional sediment management.

Finding 7D
Sediment management has implications for the coastal economy.

In addition to supporting various habitats and marine species, sediment availability and transport are important drivers of the physical appearance and behavior of the coastline. Changes to sediment availability impact beaches, tourism, marina infrastructure, and vessel traffic. Erosion affects critical existing coastal structures, such as jetties. Dredging of ports and harbors may expose toxic sediment, which is difficult to dispose of.

Actions

Working Waterfronts and Sustainable Coastal Economies

Action 7.1
Support local planning efforts for working waterfronts to promote sustainable fisheries and prioritize coastal dependent businesses and infrastructure through grant processes and federal assistance programs.

The states endorse innovative coastal-dependent business opportunities for high quality local seafood production and distribution, clean marinas, and waterfronts. To accomplish these activities and move forward effectively, the states will share lessons learned to date on related efforts, and will contact other coastal states to learn about their programs to revitalize waterfronts. This will enable the states to consider a broader set of tools for coastal communities such as the California Fisheries Fund and opportunities for sustainable fishery certification, such as through the Marine Stewardship Council.

Timeframe: Initiated within 18 months of release of the final action plan.

Action 7.2
Establish baselines for coastal economies and promote sustainable coastal community development.

The three states will assist communities with sustainable economic development by collaborating with NOAA to complete a West Coast Coastal and Ocean Economies Baseline and Historic Trends Report using data from the National Ocean Economics Program (NOEP). The report will provide an analysis of the coastal counties' demographics and ocean dependent uses, and will develop the economic indicators for evaluating trends. The Report will also be useful for identifying data gaps in NOEP data necessary for further economic analyses.

Timeframe: Initiated within 18 months of release of the final action plan.

Regional Sediment Management

Action 7.3

Develop regional sediment management plans to maximize beneficial use of sediments (i.e., sand) to protect and maintain critical community economic and environmental infrastructure.

The states will continue progress on regional sediment planning efforts. The states will partner with the U.S. Army Corps of Engineers to advance regional sediment management efforts by state and federal agencies, including necessary federal policy changes, and will seek investments in these efforts. Specifically, the states will seek improvements to the national dredging policy that support collaborative tri-state efforts to resolve conflict and establish a sustainable regional sediment management plan. On a local level, small ports often have legacy toxic sediments that are expensive to dispose of and, in contrast to larger ports with high tonnage, host a high number of users but not a large amount cargo measured by weight. To facilitate their ability to secure funds for routine dredging, the states encourage revision of the U.S. Army Corps of Engineers' policies to allow alternative forms of criteria. The states will also partner with federal agencies to leverage resources for effectively addressing legacy pollutants.

Timeframe: Ongoing. Additional efforts initiated within 18 months of release of the final action plan.

Appendix A
Table of Actions and Timeframes

Issue and Action #	Action	Activities	Timeframe
Sustained National Support	*Encourage the establishment of a national Ocean Trust Fund that would support ocean and coastal management efforts for state and federal government agencies.*	- Urge the Administration and the California, Oregon, and Washington Congressional delegations to consider establishing a dedicated source of revenues for ocean and coastal management.	Completed within six months of release of the final action plan.
Facing the Effects of Climate Change	*Collaborate on a West Coast-wide assessment of shoreline changes and anticipated impacts to coastal areas and communities due to climate change over the next 30-50 years and work together to develop actions to mitigate and adapt to the impacts of climate change and related hazards.*	- Engage with academia and local, state, and federal government agencies to model impacts to the West Coast under various likely climate change scenarios. - Agree on the same frame of reference for predicting and responding to shoreline changes from storm surges and sea level rise. - Continue to pursue activities enhancing mitigation and adaptation to climate changes and related coastal hazards.	Initiated within 18 months of release of the final action plan.
Polluted Runoff			
Action 1.1	*Work with the Administration and the U.S. Congress to provide adequate funding for coastal water quality programs to reduce polluted runoff, and enhance monitoring and enforcement of water quality regulations to improve the health of West Coast coastal waters.*	- Support continued funding for the Coastal Non-point Source Pollution Control Program, Section 319 of the Clean Water Act, and the BEACH Act. - Support reauthorization of the BEACH Act with expansion of allowable uses of funds, such as source identification. - Advocate for continued funding and expansion of the West Coast Estuary Initiative.	Ongoing.
Action 1.2	*Make Low Impact Development (LID) a priority for the West Coast by focusing future grant and incentive programs to state and local governments on this objective.*	- Examine and share incentive-based programs to support local government efforts for community planning using LID principles. - Collaborate on grant programs and share lessons learned to effectively provide incentives and assistance for communities to pursue activities aimed at reducing the impacts of development in coastal areas. - Coordinate with NOAA and local governments to bring coastal community planning and development training to six	Initiated within 18 months of release of the final action plan. Training will be conducted by summer 2009.

Issue and Action #	Action	Activities	Timeframe
		interested West Coast communities (two in each state).	
Harmful Algal Blooms and Hypoxia			
Action 1.3	*Exchange information between experts in all three states on management tools and techniques to promote development and operation of predictive capabilities of harmful algal blooms and hypoxia. Support the expansion of ocean observing system monitoring efforts amongst the three states for these purposes.*	- Explore the development of predictive capabilities for alerting ocean users and resource managers of HAB and hypoxia events by holding a HAB workshop in conjunction with federal partners to reach consensus on the present state-of-knowledge and prioritize the information needed by decision makers to lessen the impacts of the HAB events on humans and critical marine resources. - Improve the general understanding of hypoxic events and their impacts along West Coast by working with federal, state and academic experts to record and track incidences.	HAB workshop will be held in 2008. Other timelines may be identified in the final action plan.
Marine Debris			
Action 1.4	*Establish baseline estimates of marine debris and derelict gear off the West Coast and set reduction goals. Support state and federal policies for achieving marine debris reduction goals.*	- Agree on baselines established by assessing data collected by clean up programs, state and federal agencies, and nonprofit organizations. - Identify a target reduction level to achieve by various prevention and clean-up measures, and will partner with and pursue resources from the NOAA Marine Debris Prevention and Removal Program. - Share lessons learned from existing and emerging state and federal programs and guidelines to pursue safe and effective debris and gear removal. - Evaluate existing activities such as the annual coastal clean-up day and litter prevention programs in order to effectively expand marine debris reduction activities.	Initiated within 18 months of release of the final action plan.
Maritime Shipping Emission Controls			
Action 1.5	*Urge the International Maritime Organization to adopt the U.S. proposal which sets stringent emission standards for ocean going vessels.*	- Work with the U.S. EPA to gain approval for the U.S. proposal to the IMO to set international standards requiring either the use of 0.1% distillate fuels within a certain distance of the coastline and while in port or a range of technologies resulting in equivalent emission reductions.	Work with the U.S. EPA to gain approval of the IMO subcommittee in April 2008.

Issue and Action #	Action	Activities	Timeframe
Habitat Protection and Restoration			
Action 2.1	*Document, describe, and map ecological communities throughout West Coast waters and characterize existing human uses of those areas.*	- Continue to build upon the existing knowledge base of ecological communities and develop geographic information systems (GIS) for the entire West Coast. Completing the information databases will require the significant assistance of federal agency, nonprofit, and university partners. The states will also work with fishermen and tribes to identify and characterize habitats.	GIS will be complete by 2012. Other timelines may be identified in the final action plan.
Action 2.2	*Restore estuarine habitats, including coastal wetlands, to achieve a net increase in habitat and their function by at least ten percent over the next ten years.*	- In cooperation with local, state, and federal agencies, nongovernment entities, and stakeholders, the three states will work to restore estuarine habitats along the West Coast, with a goal of attaining a net increase in habitat and function, by supporting existing restoration programs. - Support the establishment of benchmarks and indicators to evaluate progress.	Ongoing, with benchmarks and ultimate goal reached by 2018.
Marine Invasive Species			
Action 2.3	*Focus efforts on eradicating non-native cordgrasses (*genus Spartina*), which are transported between the three states on ocean currents.*	- Prioritize the complete eradication of Spartina cordgrasses along the West Coast and will share strategies and lessons learned for effective removal. - Cooperate on preventing and eradicating other species that affect multiple states, and will prioritize existing and new threats.	Ongoing. Plan for full eradication of Spartina by 2018.
Ecosystem-based Management			
Action 3.1	*Examine ongoing community-based efforts using ecosystem management principles in all three states and share lessons learned from these initiatives in order to encourage effective ecosystem-based management efforts across the West Coast.*	- Share information on existing community-based EBM projects as part of an information-sharing network across states for effectively putting EBM into practice. This effort will facilitate the exchange of lessons learned and will cultivate local, state, and federal agency coordination for regional-level ecosystem management across the West Coast.	Establish West Coast EBM Network during 2008. Other timelines may be identified in the final action plan.
Action 3.2	*Assess physical, biological, chemical, and socio-economic factors in ecosystem health across the West Coast to establish standards and*	- Support the development of an integrated ecosystem assessment (IEA) for the West Coast, with the assistance of the federal government.	IEA workshop will be held in fall 2008. Other timelines may be identified in the final action plan.

Issue and Action #	Action	Activities	Timeframe
	indicators for ocean health.	- In concert with state and federal agencies, local and tribal governments, NGOs, and academia, the states will hold a joint workshop in late 2008 to discuss existing efforts along the West Coast. The workshop will also aim to determine what other information is required (e.g., high resolution remote sensing data, seafloor maps, and ocean observing system data) to advance ecosystem management approaches.	
Action 3.3	*Strengthen coordination between the three state representatives on the Pacific Fisheries Management Council.*	- The three state representatives on the Pacific Fisheries Management Council will enhance communication and cooperation in support of regional fisheries management as appropriate.	Ongoing.
Offshore Oil and Gas Operations			
Action 4.1	*Continue to oppose new oil and gas leasing, development, and production in ocean waters off the West Coast.*	- Continue to oppose any proposals by Department of the Interior or legislation under consideration by the U.S. Congress that would facilitate new oil and gas development off the West Coast.	Ongoing.
Alternative Environmentally Sustainable Energy Development			
Action 4.2	*Explore the feasibility for offshore alternative ocean energy development and evaluate the potential environmental impacts of these technologies.*	- Support efforts by the Federal Energy Regulatory Commission (FERC), the Department of Energy (DOE) and the Minerals Management Service (MMS) to coordinate and clarify regulatory processes between state and federal waters. - Collaborate with the FERC, DOE, and MMS to evaluate the potential benefits and impacts of renewable ocean energy projects off the West Coast, as well as developing the long-term regulatory structure for removal or expansion of activities. - Support the collection of baseline environmental, social, and economic information on ocean resources and existing activities that would be affected by offshore development (see Priorities 3 and 6). - The three states and the federal government will host a workshop	The workshop on offshore energy will be held in early 2008. Other timelines may be identified in the final action plan.

Issue and Action #	Action	Activities	Timeframe
		in early 2008 to consider the issues surrounding offshore energy development, explore the feasibility of a West Coast-wide approach and consistency of state and federal regulatory programs, and begin drafting a regional plan. - Send a letter to SIMOR and, in cooperation with MMS and FERC, to the Department of Energy to pursue federal assistance for the workshop.	
Ocean Awareness and Literacy			
Action 5.1	*Integrate ocean science and conservation into expanded environmental education curricula by encouraging changes to education content standards enhancing ocean literacy.*	- Explore avenues for creating or expanding K-12 ocean education curriculum in schools and seek opportunities for hands-on educational experiences for children. - Pursue a partnership with the Centers for Ocean Sciences Education Excellence (COSEE), the Southwest Marine/Aquatic Educators Association and Northwest Aquatic and Marine Educators chapters of the National Marine Educators Association (NMEA), the Pacific Education Institute, and others.	Initiated within 18 months of release of the final action plan.
Action 5.2	*Support outreach efforts to decision-makers at all levels and encourage improvement and expansion of volunteer programs such as clean marina initiatives.*	- Support outreach efforts to decision-makers at all levels - Improve communication between education centers along the West Coast to help expand opportunities for public awareness and citizen science activities. - Request adequate federal funding and expansion of environmental education.	Initiated within 18 months of release of the final action plan.
Regional Marine Research			
Action 6.1	*Support the West Coast Sea Grant regional marine research needs process by identifying funding sources and partners for a sustained approach to ocean and coastal research.*	- Continue participating in developing a regional ocean and coastal research plan led by the West Coast Sea Grant institutions. - Prioritize and pursue joint efforts to fund regional scientific research projects where pooled resources or coordinated efforts will maximize the return on research investments to benefit all three states. - Work with the four existing ocean observing systems collaborations along the West	The Sea Grant Regional Research Plan is anticipated for release in Fall 2008. Other timelines may be identified in the final action plan.

Issue and Action #	Action	Activities	Timeframe
		Coast, federal agencies, and academia to invest in monitoring to address priority issues.	
Sea Floor Mapping			
Action 6.2	*Complete a seafloor map of the bathymetry and habitat of all state tidelands and submerged lands out to three miles.*	- Complete a seafloor map of Pacific Coast waters. Fiscal constraints necessitate federal, academia, and private industry partnerships to move forward. - Set joint standards, agree on common products, define high priority areas, and estimate a timeline for completion. - Communicate the regional need for a comprehensive seafloor map in a joint letter to the Subcommittee on Integrated Management of Ocean Resources (SIMOR) and will encourage the Department of Defense, USGS, NOAA, and other federal agencies to make existing seafloor mapping data accessible and to better coordinate data collection and sharing in state waters through such groups as the Interagency Working Group on Integrated Ocean Mapping. - Ask NOAA to establish seafloor mapping as a programmatic goal and to ensure the states have adequate West Coast-based seafloor mapping resources, including hardware, to support these actions. - Support legislation that would further these goals.	Complete seafloor map by 2020. Other timelines may be identified in the final action plan.
Working Waterfronts and Sustainable Coastal Economies			
Action 7.1	*Support local planning efforts for working waterfronts to promote sustainable fisheries and prioritize coastal dependent businesses and infrastructure through grant processes and federal assistance programs.*	- Endorse innovative coastal-dependent business opportunities for high quality, local seafood production and distribution, and clean marinas and waterfronts. - Share lessons learned to date on related efforts. - Consider a broader set of tools for coastal communities such as the California Fisheries Fund and opportunities for sustainable fishery certification, such as through the Marine Stewardship Council.	Initiated within 18 months of release of the final action plan.
Action 7.2	*Establish baselines for coastal*	- Assist communities with	Initiated within 18

Issue and Action #	Action	Activities	Timeframe
	economies and promote sustainable coastal community development.	sustainable economic development by collaborating with NOAA to complete a West Coast Coastal and Ocean Economies Baseline and Historic Trends Report using data from the National Ocean Economics Program (NOEP). The report will provide an analysis of the coastal counties' demographics and ocean dependent uses, and will develop the economic indicators for evaluating trends.	months of release of the final action plan.
Regional Sediment Management			
Action 7.3	*Develop regional sediment management plans to maximize beneficial use of sediments (i.e., sand) to protect and maintain critical community economic and environmental infrastructure.*	- Continue progress on regional sediment planning efforts. - Partner with the U.S. Army Corps of Engineers to advance regional sediment management efforts by state and federal agencies, including necessary federal policy changes, and will seek investments in these efforts. Specifically, the states recommend improvements to the national dredging policy that support collaborative tri-state efforts to resolve conflict and establish a sustainable regional sediment management plan. - To facilitate the ability of small ports to secure funds for routine dredging, the states encourage revision of the U.S. Army Corps of Engineers' policies to allow alternative forms of criteria. - Partner with federal agencies to leverage resources for effectively addressing legacy pollutants.	Ongoing. Additional efforts initiated within 18 months of release of the final action plan.

PRELIMINARY STAFF REVIEW OF THE WEST COAST GOVERNORS' AGREEMENT DRAFT ACTION PLAN

The West Coast Governors' Agreement (WCGA) draft Action Plan was released to the public on October 19, 2007. **The comment deadline is December 1, 2007**. Actions are expected to be completed within 18 months of the plan's release in 2008. In 2008, there will be a state/federal Implementation Summit, and in 2010 a Final Status Report.

The text below summarizes the key actions of the draft plan and their relation to Pacific Fishery Management Council (Council) jurisdiction and responsibilities in an effort to facilitate Council discussion on possible comments to be submitted.

Governors' Priority 1 *- Ensure Clean Coastal Waters and Beaches: Appeal for national funding to address nonpoint source pollution and for continued funding of the West Coast Estuary Initiative (an estuary-focused water quality improvement fund).*

Council Authority: The Council is charged with commenting on actions that may affect salmon and groundfish essential fish habitat (EFH).

Possible Council Comments:

Governors' Priority 2 *- Protect and Restore Ocean and Coastal Habitats: Identify key habitats or "important ecological areas", such as rocky seafloor areas, location, health, and potential threats. Map habitats and overlapping human uses and use patterns to contribute to a comprehensive ecosystem and habitat protection strategy.*

Council Authority: The Council describes and identifies EFH for each managed species, including designating Habitat Areas of Particular Concern (HAPC) through the Groundfish Fishery Management Plan (FMP).

Possible Council Comments:

Governors' Priority 3 *- Promote the Effective Implementation of Ecosystem-based Management: Sustainable fisheries depend on healthy ecosystems. Fishery management must no longer be based on single-species approach but focus on the ecosystem as a whole. Ecosystem-based fishery management is hindered by data needs and a mismatch of species range and management boundaries. The action plan will facilitate the exchange of lessons learned, cultivate regional agency coordination, establish standards and indicators for ocean health, and strengthen coordination among the three state representatives on the Council.*

Council Authority: The Reauthorized Magnuson-Stevens Fishery Conservation and Management Act (RMSA) calls for the expansion of the application of ecosystem principals in fishery conservation and management activities.

Possible Council Comments:

Governors' Priority 4 *- Reduce Adverse Impacts of Offshore Development: Explore the feasibility and impact of alternative, environmentally-sustainable energy development. Hold a workshop in 2008 on offshore energy.*

Council Authority: The Council is charged with commenting on actions that may impact EFH or fishery management objectives of any of the Council fishery management plans.

Possible Council Comments:

Governors' Priority 6 *- Expand Ocean and Coastal Scientific Information, Research and Monitoring: Develop a plan for directing regional marine research, which may include cooperative research between fishermen and scientists.*

Council Authority: The Reauthorized RMSA requires the Council to specify research priorities for a 5-year period, updated as necessary.

Possible Council Comments:

Governors' Priority 7 *- Foster Sustainable Economic Development in Coastal Communities: Collaborate with NOAA and use data from the National Ocean Economies Program to complete a socio-economic baseline for coastal communities and identify future ocean economic trends. Share lessons learned on revitalizing working waterfronts and promoting sustainable fisheries. Promote opportunities for sustainable fishery certification (such as MSC cert.).*

Council Authority: MSA National Standard 8 requires that management measures shall provide for sustained participation of fishing communities.

Possible Council Comments:

PFMC
11/06/07

Agenda Item C.2.b
Supplemental NMFS Comments
November 2007

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802- 4213

NOV 0 5 2007

Mr. Don Hansen, Chair
Dr. Don McIsaac, Executive Director
Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101
Portland, Oregon 97220-1384

Dear Chairman Hansen, Dr. McIsaac and Council members:

As you are aware, NOAA Fisheries has expressed its support of the Pacific Fishery Management Council's (Council) approved motion to initiate development of an Ecosystem Fishery Management Plan (EFMP). By taking this initial step, the Council has committed to broadening its management responsibilities on the West Coast to include important ecosystem interactions in implementing its existing fishery management plans. The Council's decision emphasizes its priority to manage for the sustainable use of the California Current Ecosystem (CCE). It is obvious that the Council considers examining ecosystem trends and dynamics in relationship to the fisheries it manages as the appropriate way to make fishery management recommendations to NOAA.

The Council's proposal to move forward with an EFMP coincides with the formation of a proactive regional partnership created by the Governors of Washington, Oregon, and California to protect and manage the ocean and coastal resources along the entire west coast. The "West Coast Governors' Agreement on Ocean Health" initiative stresses the importance of regional collaboration to support ocean and coastal management on an ecosystem level. While the recently released "Draft Action Plan" identifies seven priority areas (including the effective implementation of ecosystem-based management), it is clear to us that the ecosystem-based management action identified in the action plan is inherently connected to each of the other priority areas. We believe that the Council's proposed EFMP can directly support this priority in the Governors' action plan, and beyond, as the Council's EFMP efforts would include the entire Pacific salmon ecosystem. Participation on the EFMP plan team by representatives from each of the coastal states would ensure that Action Priority 3.3 (i.e., strengthened coordination by states' representatives on the Council) is implemented.

In its efforts to undertake an EFMP, NOAA Fisheries would also like to bring to the Council's attention the collaborative efforts to develop an Integrated Ecosystem Assessment (IEA) for the CCE that involves NOAA Fisheries, NOAA Ocean Service/National Marine Sanctuary Program, NOAA Information and Satellite Service/National Coastal Data Development Center, and academic partners. The IEA

will provide a comprehensive summary of the status and potential risks of the CCE, and evaluate alternative management strategies against the CCE's condition. We see that the IEA can support the Council's development of the EFMP and allow the Council to play an integral role in the eventual development of Action Priority 3.2 of the plan against the backdrop of fishing effort.

In closing, NOAA Fisheries believes that the Council's support of the West Coast Governor's Agreement through its EFMP process can lead to a better opportunity for achieving the Governors' objectives as well as NOAA's Ecosystem Goal for protecting, restoring and managing the use of coastal and ocean resources.

Sincerely,

D. Robert Lohn,
Regional Administrator
Northwest Region

Rodney R. McInnis
Regional Administrator
Southwest Region

cc: Usha Varanasi, Ph.D.
William W. Fox, Jr., Ph.D.

GROUNDFISH ADVISORY SUBPANEL REPORT ON WEST COAST GOVERNORS' AGREEMENT (WCGA) ON OCEAN HEALTH

The Groundfish Advisory Subpanel (GAP) believes the West Coast Governors' Agreement on ocean health is a positive attempt to coordinate regional management efforts. It appears to be an effort to emulate what has already been occurring with fishery management for many years. We are hopeful that it is not an attempt to usurp a collaborative process that has been successfully prosecuted for a long period of time. Fishery management has long been a cooperative effort involving the public, industry, state, federal, and congressional entities.

The GAP believes that fishery management groups and processes should be an integral part of this approach to addressing ocean health. Statements that reflect this sentiment should be included in this agreement. This process should maintain the political transparency and scientific scrutiny required within fishery management. It is vitally important for all stakeholders to be intimately involved in shaping these policy issues.

We have specific comments on the following priority areas within the Governors' Agreement:

Healthy ocean and coastal habitats.
A strict definition of the term 'healthy' must be established. What and who defines a healthy ocean?

Effective implementation of ecosystem-based management.
Promote funding for the existing ecosystem based management activities that are underway at state and federal fishery management agencies. All proposed new activities (aquaculture, wave energy, etc.) should be required to comply with all federal and state environmental regulations.

Expanded ocean and coastal scientific information, research, and monitoring.
This is critical for rational and sustainable (MSA) use of ocean resources. Uncertainty with data comprises a major hurdle in ensuring sustainable (MSA) fisheries. Funding constraints lead to fishery constraints. Uncertainty diminishes when capacity to collect information increases. When considering new proposals for ocean use, a complete inventory of all existing ocean activities must be compiled in order to assess the true impacts

Increased ocean awareness and literacy among the regions citizens.
The public has a right to receive information about the processes involved with the sustainable harvest of ocean resources. Objective discussions about this issue are often missing from public outreach efforts relating to marine resources.

Fostering sustainable economic development of coastal communities.
Fisheries should be a top priority as should any economic activity that is already in place. This would be an excellent opportunity to change the focus from one of funding fishery constraints to one of investing in fishery economic health and opportunity.

There are continuing and future concerns regarding jurisdictional conflicts that exist in state and federal waters. The GAP recommends that this agreement address these issues. Example: Coastal Zone Management Act, National Marine Sanctuaries Act vs. Magnuson-Stevens Fishery Conservation and Management Act. It is recommended that NOAA General Counsel review this agreement and provide clarification on this issue.

PFMC
11/05/07

SALMON ADVISORY SUBPANEL REPORT ON WEST COAST GOVERNORS' AGREEMENT (WCGA) ON OCEAN HEALTH

The Salmon Advisory Subpanel (SAS) supports Action 2.2 in the (WCGA) action plan, which addresses restoration of estuarine habitat and sets an objective of increasing estuarine habitat and function by 10% within 10 years. One possible impediment to achieving this objective is the proposed development of liquefied natural gas (LNG) facilities in the Columbia River and Coos Bay estuaries. The proposed site near Clifton Channel in the Columbia River would require dredging of over 700,000 cubic yards of prime salmon rearing habitat, and subsequent disposal of the material someplace that would likely cause additional negative impacts to the ecosystem. The proposed Coos Bay facility would also require dredging, as well as construction of a pipeline extending 223 miles overland through seven major watersheds. Development of these LNG facilities are not in alignment with the WCGA, and would make it very difficult to achieve the stated objective.

PFMC
11/05/07

MAGNUSON-STEVENS ACT REAUTHORIZATION IMPLEMENTATION

The Council has been working closely with the National Marine Fisheries Service (NMFS) and the other seven Regional Fishery Management Councils on implementing new provisions in the Magnuson-Stevens Act (MSA) as amended by the *Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006* (MSRA).

On September 25-26, 2007, Council Staff Council Members attended a workshop hosted by NMFS entitled *Magnuson-Stevens Reauthorization Act: Working Together on Implementation.* Topics discussed at the workshop included: determining optimum yield and annual catch limits (ACLs), preventing overfishing, bycatch management, ecosystem-based fishery management, international fishery management, and aquaculture. Council Staff will provide a brief review of the workshop at the November Council meeting and Council Members that were in attendance are encouraged to provide their perspectives. Materials from the meeting, including electronic copies of all of the presentations and summary conclusions can be found at the workshop's website (msra.webexone.com).

At this Council meeting, it was expected the Council would focus on four matters: (1) a draft Environmental Impact Statement (DEIS) from NMFS regarding the process for establishing ACLs and accountability measures (AM) that insure catch limits are not exceeded, (2) a proposed rule for a new environmental review process for fishery management actions, (3) a proposed rule for expedited, uniform, and regionally-based exempted fishing permits (EFPs), and (4) draft revisions to the Council Operating Procedure (COP) 4 which governs the Scientific and Statistical Committee (SSC).

Regarding the first three of these matters, no review materials were available by the deadline for the advance November Briefing Book. Council Staff will continue to work with NMFS on implementation of MSRA provisions and should review materials on the first three matters become available; they will be distributed as supplemental material at the November Council meeting.

Regarding the fourth matter, the Council and its advisory bodies reviewed a preliminary draft COP 4 and provided recommendations for improvements. Council Staff has incorporated these recommendations, and re-drafted the new Disclosure of Financial Interest section for purposes of clarity, and provided a second draft of COP-4 for review and potential Council approval (Agenda Item C.3.a, Attachment 1). To further facilitate implementation of MSRA provisions, Council Staff has provided a first draft revision of COP-12 governing development and distribution of the Council's Research and Data Needs document (Agenda Item C.3.a, Attachment 2). Draft revisions implement an MSRA requirement for identifying needs for a 5-year period and updates the COP to reflect current practices regarding economic, social, and ecosystem research and data needs.

Council Action:

Adopt COP Revisions and Direct Planning and Action on New Requirements as Needed for Timely Implementation.

Reference Materials:

1. Agenda Item C.3.a, Attachment 1: Second Draft of Revisions to Council Operating Procedure 4 – Scientific and Statistical Committee.
2. Agenda Item C.3.a, Attachment 2: Draft Revisions to Council Operating Procedure 12 – Update and Communication of Research and Data Needs and West Coast Economic Data Plan.
3. Agenda Item C.3.d, Public Comment.

Agenda Order:

a. Agenda Item Overview — Mike Burner
b. NMFS Report — Frank Lockhart
c. Reports and Comments of Advisory Bodies
d. Public Comment
e. **Council Action:** Adopt COP Revisions and Direct Planning and Action on New Requirements as Needed for Timely Implementation

PFMC
10/19/07

4

COUNCIL OPERATING PROCEDURE
Scientific and Statistical Committee

Approved by Council: 07/20/83
Revised: 07/10/85, 09/16/87, 04/06/95, 09/18/98, 09/15/00, 06/18/02, 03/11/05

SECOND DRAFT REVISION - NOT APPROVED BY COUNCIL - DO NOT CITE
Proposed additions underlined. ~~Proposed deletions in strikethrough text.~~
{Text in italics and brackets represents explanatory narrative | that is not intended for the final draft.}

{This second draft includes comments of the Council and the SSC at the September 2007 Council meeting. Unless otherwise noted, the majority of the of the proposed additions are directly related to new provisions in the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006}

PURPOSE

~~To establish procedures for~~ The purpose of this Council Operating Procedure is to specify the role, responsibilities, and function of the Scientific and Statistical Committee (SSC).

OBJECTIVES AND DUTIES

When requested by the Council, Council Chair or Executive Director, the SSC shall:

1. Provide expert scientific and technical advice to the Council on the development of fishery management policy. ~~establishing the goals and objectives of fishery management plans (FMP) and amendments, and the preparation of such FMPs and amendments.~~ *{Deletion recommended due to redundancy with new #2}* SSC scientific and technical advice is intended to inform policy decisions by the Council. SSC review shall focus on the scientific merit of a proposed action and remain separate and independent from Council policy decisions such as determining allocations; setting of annual catch limits, quotas, and harvest guidelines within acceptable biological catch levels or rebuilding optimum yields recommended by the SSC; and deciding between estimates deemed equally probable by the SSC.

2. Provide the Council advice in the development, collection, evaluation, and peer review of such statistical, biological, economic, social, and other scientific information as is relevant to the Council's development and amendment of any Fishery Management Plan in accordance with the Magnuson Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) and the National Standards as amended through January 12, 2007.

3 Provide the Council ongoing scientific advice for active fishery management decisions including, but not limited to, evaluations and recommendations on acceptable biological catch, stock status assessments, stock status forecasts, proposed management measures, defining and achieving maximum sustainable yield, achieving rebuilding targets for overfished species, bycatch, habitat status, social and economic impacts of management measures, and sustainability of fishing practices. Such advice shall be based on the review and evaluation of statistical, biological, economic, social, and other scientific information, analyses, analytical methodologies, literature, research, and other information relevant to Council decision-making. Such advice, shall be provided in written statements to the Council that include recommendations as appropriate on scientific quality of available information, both in terms of status as the best available science and soundness of science for use in fishery management decision-making, uncertainty, and risk management. *{Clarification of current procedure}.*

a. The SSC requires good documentation and ample review time in order to provide the best possible scientific advice to the Council on scientific merit. Analysis or report authors should be responsible for ensuring materials submitted to the SSC are technically comprehensive, clearly documented, and complete. If there is any uncertainty on the part of authors regarding SSC expectations, authors should clarify assignments and expectations of materials to be reviewed with the SSC Chair. In order that there be adequate time for careful review, documents and materials destined for review by the SSC or any of its subcommittees must be received at the Council office at least two weeks prior to the meeting at which they will be discussed and reviewed, unless otherwise approved by the Executive Director. The Council staff will then provide copies to appropriate SSC members. If this deadline cannot be met, it is the responsibility of the author to contact the SSC Chair prior to the two-week deadline, so appropriate arrangements, rescheduling, and cancellations can be made in a timely and cost-effective manner. This deadline applies to all official SSC activities and meetings.

b. SSC reviews, evaluations, analyses, and recommendations are intended to provide an independent peer-review process. SSC members directly involved in the development of reviewed materials, such as stock assessments, fishery or habitat models, fishery or ecosystems analyses, shall limit themselves to providing information and answering questions regarding SSC deliberations of such items

~~2. Assist the Council in the evaluation of such statistical, biological, economic, social, and other scientific information as is relevant to the Council's development and amendment of any FMP.~~ *{Updated and consolidated with the newly proposed #3}*

4. Assist the Council in ~~determining what statistical, biological, economic, social, or other scientific information is needed for the development of an FMP or amendment that meets the requirements of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) and advise the Council as to the best way of obtaining this information, including~~ identifying statistical, biological, economic, social, or other scientific research needs and identify entities with ongoing research programs that may

be able to develop needed information for the ~~optimal execution~~ implementation of Council obligations under he Magnuson-Stevens Act. (See Council Operating Procedure Number 12 entitled Update and Communication of Research and Data Needs and West Coast Economic Data Plan.) *{Deleted portion is redundant with new #2}*

5. Advise the Council on preparing comments on any application for foreign fishing transmitted to the Council by the U.S. Department of State.

~~6. Review and evaluate FMPs and amendments to determine if they meet the National Standards of the Magnuson-Stevens Act and other applicable laws.~~ *{Redundant to newly proposed #2}*

~~7~~ 6. ~~Advise~~ Provide scientific advice to the Council on preparing comments on any FMP or amendment prepared by the U.S. Secretary of Commerce (Secretary) or the Secretary's delegate which are transmitted to the Council pursuant to Section 304(c) of the Magnuson-Stevens Act.

~~8. Provide advice on the scientific basis of any proposed regulations under consideration by the Council to implement any FMP or amendment.~~ *{Redundant to newly proposed #3}*

~~9. Assist the Council in establishing criteria for judging the effectiveness of an FMP or amendment.~~ *{Redundant to newly proposed #3}*

~~10 Attempt to resolve scientific or technical disputes within or between Plan, Technical, or Management Teams, assessment review bodies (e.g., groundfish Stock Assessment Review, salmon Methodology Evaluation Workgroup). or organization perspectives before the issues come before the Council.~~ *{Recommended for deletion by the Council in September 2007. The resolution of technical disputes associated with stock assessments is already included in Terms of Reference documents. Other technical disputes and advisory body perspectives should come first to the Council before becoming the charge of the SSC.}*

~~11. Review, evaluate, recommend improvements, and provide findings of scientific quality, soundness, uncertainty of stock assessments, fishery or habitat models and analysis of fishery ecosystems or marine protected areas under consideration by the Council.~~ *{Redundant to newly proposed #3}*

~~12~~ 7. Review qualifications of Plan Team and SSC nominees and present recommendations to the Council.

~~13~~ 8. Perform such other necessary and appropriate duties as may be required by the Council to carry out its functions under the Magnuson-Stevens Act and other applicable laws.

COMPOSITION

Committee members shall be appointed for each category listed below (16 members). The Council shall strive to include on the committee three social scientists, of which at least two shall have economic sciences expertise. More generally, the Council shall strive to ensure that SSC membership reflects the range of expertise needed for all Council FMP's.

1. State fishery management agencies (4)

    - Washington Department of Fish and Wildlife
    - Oregon Department of Fish and Wildlife
    - California Department of Fish and Game
    - Idaho Department of Fish and Game

2. National Marine Fisheries Service (5)

    - Alaska Fisheries Science Center (1)
    - Northwest Fisheries Science Center (2~~– one with expertise in groundfish stock assessment~~)
    - Southwest Fisheries Science Center (2)

3. West Coast Indian tribal agency with fishery management responsibility (1)

4. At-large positions (6)

MEMBERSHIP

Term of Members

Non at-large federal, state, and tribal agency members shall be appointed by the Council to serve indefinite terms. At-large members shall be appointed by the Council for three-year terms commencing on January 1 and expiring December 31 three years thereafter, and may be reappointed at the pleasure of the Council. At-large vacancy appointments shall be for the remainder of the unexpired term of the vacancy.

Compensation

~~All members~~ Federal employees on the SSC shall serve without compensation. However, non-federal employees will be reimbursed for expenses while traveling to and participating at meetings of official Council business, as per the *Council Travel Rules* document. Subject to the availability of appropriations and approval by the Council, a stipend may be paid to members who are not employed by the Federal Government or a State marine fisheries agency. *{MSRA Provision}*

Termination of Membership

An SSC member may be replaced at the Council's discretion if a member; 1) transfers employment or moves to a different location, 2) is absent from two or more consecutive meetings or has excessive non-consecutive absences without giving adequate notification to the SSC Chair or Council Executive Director, 3) appears unable to fulfill their obligations as an SSC member, or 4) violates the *Rules of Conduct for Employees and Advisors and Contractors of Regional Fishery Management Councils, U. S. Department of Commerce*.

Replacement of Members

Upon receipt of a letter of resignation, from either the individual in an at-large position or the sponsoring fishery management agency for an agency seat, expiration of three-year terms, or after Council action to remove a member, the Executive Director shall; 1) contact the agency which the former member represented for a nominee or 2) for an at-large member, advertise for a replacement. Announcements for nominations for at-large members shall be distributed widely and be specific about the duties and responsibilities.

Alternate Members

When an appointed member representing a federal, state, or tribal agency (categories 1, 2, and 3) will not be able to attend a meeting, a designee may be appointed if the Executive Director is notified in advance and in writing. Such designees may participate in committee deliberations as a regular member and shall be reimbursed for expenses per the Council travel rules. Designees for at-large committee members are not authorized.

Officers

The Chair and Vice Chair of the SSC shall be elected by majority vote of SSC members present and voting. Such officers shall be confirmed by the Council Chair and shall serve ~~one~~ two-year terms. There is no limit as to the number of terms that individuals may serve as officers. ~~However, general practice has been for officers to serve two consecutive one-year terms.~~ The presiding officer has the responsibility and authority to ensure that meetings are conducted in an orderly and business-like manner. *{Clarification of current procedure}.*

Subcommittees

The committee may establish such subcommittees as it deems necessary to facilitate its duties. In addition, a socioeconomic subcommittee will be formed to work closely with team or staff economists and sociologists. Subcommittee reports will not be considered final until approved by the full SSC.

Disclosure of Financial Interest

Within 45 days of appointment to the SSC, each member must disclose any financial interest and any financial relationship-

(1) that they, their spouse, their minor child, or their partner, has in or with any harvesting, processing, lobbying, advocacy, or marketing activity that is being, or will be undertaken in association with any fishery over which the Council has jurisdiction;
(2) that they have associated with any organization (other than the Council) in which they are serving as an officer, director, trustee, general partner, or employee, if that organization is involved in any harvesting, processing, lobbying, advocacy, or marketing activity that is being, or will be undertaken in association with any fishery over which the Council has jurisdiction; and
(3) that they have with an individual or organization (other than the Council) involved in any harvesting, processing, lobbying, advocacy, or marketing activity that is being, or will be undertaken in association with any fishery over which the Council has jurisdiction.

Members are required to complete Council and/or Department of Commerce forms to disclose the above information. Such forms will be kept on file by the Council and the Assistant Administrator for Fisheries, on behalf of the Secretary of Commerce. Financial disclosure forms must include the period three years prior to signing and members must update his or her disclosure form at any time any such financial interest is acquired or substantially changed. *{MRSA Provision}*

MEETINGS

The committee shall meet at the request of the committee Chair, with the approval of the Council Executive Director, as often as necessary to fulfill its responsibilities. Generally, the SSC will meet Monday and Tuesday during the week of each Council meeting.

Public Participation

The public will be permitted to comment on items relative to the agenda at a time to be announced in the *Federal Register* and in a Council news release. Comments may be limited if deemed necessary by the committee Chair. Written statements also may be submitted during the public comment period. The public will not be permitted to interject comments during the meeting at any time other than the established comment period unless asked to do so by the Chair or a committee member. Members of the public may be asked to leave the meeting at the Chair's discretion if their conduct is impeding the orderly progress of the meeting.

The granting of permission for the public to tape all or any part of the meeting is at the discretion of the committee Chair and such permission must be obtained in advance.

Draft work products, reports, or statements prepared and discussed at these meetings will be available in final form after submission to the Council. Distribution prior to submission to the Council will be limited to SSC members, unless authorized by the Chair.

Copies of this operating procedure shall be available upon request from the Council office.

SSC Closed Sessions

At the discretion of the SSC Chair, SSC closed sessions may be scheduled in advance of or initiated during an SSC meeting. Closed sessions are closed to all except SSC members, Council members, Council staff, and others designated by the SSC Chair to discuss litigation, advisory body appointments, and other personnel matters. *{Addition of current procedure}*

Public Notification of Meetings

Timely public notice of each SSC meeting, including the time, place, and agenda topics for the meeting, shall be widely distributed via facsimile machine, electronically (e-mail and Council website), and/or U.S. Postal Service to individuals on mailing lists maintained by the Council and to local media. The notice also may be announced by such other means as will result in wide publicity. For purposes of this notice, the term "timely" will be defined as two weeks prior to the actual meeting. However, the Council recognizes that due to the expediency of some Council actions and/or other reasons deemed valid, such two-week advance notice may not always be possible.

Timely notice of each regular meeting, emergency meeting, and hearing also shall be published in the *Federal Register*. Council staff shall prepare this notice in coordination with the appropriate National Marine Fisheries Service (NMFS) regional office. In this context, the term "timely" shall denote submission (at least 23 calendar days prior to the meeting) of the notice to NMFS for publication in the *Federal Register*.

MINUTES

As workload permits, a Council staff member shall attend and draft minutes of each committee meeting. Such minutes shall be submitted for approval by a majority of committee members at the next committee meeting.

STAFF RESPONSIBILITIES

In addition to drafting meeting minutes, a Council staff member shall be assigned to assist the committee with coordination, organization, and meeting logistics, and to provide other expertise needed by the committee on a case-by-case basis.

COUNCIL OPERATING PROCEDURE

Update and Communication of Research and Data Needs ~~and West Coast Economic Data Plan~~

12

Approved by Council: 07/08/87
Revised: 01/14/88, 03/08/90, 07/10/92, 04/06/95, 03/10/00, 03/11/05

DRAFT REVISION - NOT APPROVED BY COUNCIL - DO NOT CITE
Proposed additions underlined. ~~Proposed deletions in strikethrough text.~~
{Text in italics and brackets represents explanatory narrative | that is not intended for the final draft.}

{Unless otherwise noted, the majority of the of the proposed additions are directly related to new provisions in the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006}

PURPOSE

To enhance the accomplishment of the Council's research and data needs by providing a formal and effective procedure for updating these needs and communicating them to organizations which may be able to provide support in their achievement.

The Council, to the extent possible within its workload priorities, will update and maintain~~:~~

~~1.~~ A research and data needs document which lists and prioritizes unmet Council research and data collection needs for each fishery management plan (FMP); including sections on economic, social, and ecosystem research and data needs. *{Clarification of current procedure}*

~~2. A West Coast Economic Data Plan which serves as a coordinating instrument for the development and implementation of a systematic approach to fulfilling the Council's needs for economic data.~~ *{Clarification of current procedure, the West Coast Economic Data Plan was instrumental in establishing the Fisheries Economics Data Program (EFIN) and future economic can be addressed in the economic section of the research and data needs document}*

~~Neither the~~ The research and data needs document ~~nor the economic data plan~~ does not bind any agency to addressing or responding to Council needs. The key to the effectiveness of these documents is clear and timely communication of needs to parties with an interest and ability to respond. Particular emphasis is placed on strengthening communication with the National Marine Fisheries Service (NMFS). The procedure outlined below is timed to have the best chance of influencing annual NMFS operating plans and NMFS budget requests for upcoming years.

PROCEDURE

Contingent upon its overall workload priorities, the Council will strive to develop and maintain relevant documents which display and communicate the Council's research and data needs for 5 year periods using the following schedule of tasks as a standard guide. *{MSRA Provision}*

Continuous

Year-Round — Council staff keeps track of research and data needs as they arise in various forms throughout the year and, as appropriate, advocates for efforts to address Council needs ~~and implementation of the economic data plan~~ (such advocacy shall not include the lobbying of Congress).

~~Biennial~~ Five-Year-Update Cycle ~~(Even Number Years)~~ *{MSRA Provision}*

April — Council staff presents updated research and data needs ~~and economic data plan~~ document~~s~~ to the Scientific and Statistical Committee (SSC) and other advisory bodies for review at the April Council meeting. Advisory bodies provide written comments to the SSC. (Item is not on Council agenda).

June — The SSC presents recommended revisions to the Council. Other advisory bodies provide comment to the Council. The Council approves draft documents for public review.

September — After reviewing comments from the public and Council advisory entities, the Council adopts its research and data needs ~~and economic data plan~~. The~~se~~ document~~s~~ ~~are~~ is submitted to NMFS West Coast regions and centers and the states. The final document is also transmitted to West Coast and National Sea Grant institutions and posted on the Council web page.

Early December — Council Chair and staff meet with representatives from NMFS West Coast regions and centers and Pacific States Marine Fisheries Commission (PSMFC) to develop a consensus on high priority initiatives needed to respond to Council needs. Council Chair writes a letter to NMFS to transmit the conclusions from the meeting.

Out-of-Cycle Modifications to the Needs List

If a situation arises that would benefit from an out-of-cycle modification to the documents, the Council may announce its intent to modify ~~one or both documents~~ the research and data needs document outside the ~~biennial~~ 5-year process and make such a modification at its next meeting.

HIGHLY MIGRATORY SPECIES ADVISORY SUBPANEL REPORT ON MAGNUSON-STEVENS ACT REAUTHORIZATION IMPLEMENTATION

The Highly Migratory Species Advisory Subpanel (HMSAS) endorses the comments contained in the letter submitted as Agenda Item C.3.d, Supplemental Public Comment 2 provided by Mr. Peter Flournoy. In particular, the HMSAS directs the Council's attention to the last paragraph, which reads:

> "My last comment concerns Item C.3.d Public Comment entitled "Setting Annual Catch Limits for U.S. Fisheries: An Expert Working Group Report." [Lenfest Ocean Program] I would like to point out that this was done under the auspices and participated in by MRAG which is a British based organization which does most of the work for the MSC certification you may have heard about. It therefore should be carefully examined and not just accepted without critical reading. By the way, it answers none of the questions raised above concerning ACLs and their application to international fisheries."

PFMC
11/07/07

SALMON ADVISORY SUBPANEL REPORT ON MAGNUSON-STEVENS ACT REAUTHORIZATION IMPLEMENTATION

The Salmon Advisory Subpanel (SAS) is concerned that the comment period for the proposed rule for the process of setting annual catch limits will not include a Pacific Council meeting; therefore we offer the following comments for the record.

It is important that salmon fisheries be given special attention due to their use of annual stock specific spawning escapement and exploitation rates as conservation and management objectives rather than stock specific catch quotas. Requiring salmon fisheries to track stock specific quotas inseason would be almost impossible from a monitoring standpoint. Because of the short life span and multiple age classes of salmon stocks, annual abundance is highly variable. The current Salmon Fishery Management Plan requires annual management measures that predict that all stocks will meet their conservation objective annually. Because of this management system and the naturally variable stock abundance, stocks that drop below their conservation objective usually recover before there is a need for a rebuilding plan. There has been only one overfishing concern triggered since 1995, and changing the management system for a bureaucratic requirement falls into the category of fixing something that ain't broke.

PFMC
11/05/07

Agenda Item C.3.c
Supplemental SSC Report
November 2007

SCIENTIFIC AND STATISTICAL COMMITTEE REPORT ON MAGNUSON-STEVENS ACT REAUTHORIZATION IMPLEMENTATION

The Scientific and Statistical Committee (SSC) reviewed the draft revisions to Council Operating Procedures (COP) 4 and 12.

- COP 4 reflects changes recommended by the SSC in September 2007. The SSC requests one additional change, namely, deletion of the second sentence in the "Subcommittees" section of the COP (p. 5) pertaining to formation of a socioeconomic subcommittee. This sentence appears superfluous as the SSC already has a socioeconomic subcommittee and the COP gives the SSC general discretion to establish subcommittees as necessary. The SSC also notes that additional revisions to this COP may be required once guidance is received from the National Marine Fisheries Service regarding new provisions of the Magnuson-Stevens Act.

- COP 12 specifies a five-year outlook for the Council's Research and Data Needs, as well as a five-year revision cycle. The SSC notes that a five-year cycle is reasonable, given the pace of research progress, and that the COP also provides the flexibility of out-of-cycle changes as needed. As a minor change, the SSC suggests that, in the first bullet in the "Purpose" section, the phrase "including sections" be changed to "including separate sections".

PFMC
11/07/07

SETTING ANNUAL CATCH LIMITS FOR U.S. FISHERIES:

An Expert Working Group Report

Working Group Participants:

Andrew Rosenberg Department of Natural Resources, Institute for the Study of Earth, Oceans and Space, University of New Hampshire
David Agnew MRAG, Ltd.
Elizabeth Babcock Pew Institute for Ocean Science, Rosenstiel School of Marine and Atmospheric Science, University of Miami
Andrew Cooper Department of Natural Resources, Institute for the Study of Earth, Oceans and Space, University of New Hampshire
Charlotte Mogensen Directorate for Food, Fisheries and Agri Business, Ministry of Food, Agriculture and Fisheries, Denmark
Robert O'Boyle Department of Fisheries and Oceans Canada, Bedford Institute of Oceanography
Joseph Powers Department of Oceanography and Coastal Sciences, Louisiana State University
Gunner Stefánsson University of Iceland
Jill Swasey MRAG Americas, Inc.

MRAG Americas

MRAG Americas, Inc. convened the Working Group and prepared this report.

SEPTEMBER 2007

A report initiated and supported by the

LENFEST OCEAN PROGRAM

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Cover Photography credit – Charlotte Hudson, Lenfest Ocean Program

1 Introduction

This report provides guidance on the application of annual catch limits for US fisheries based on the recommendations of a working group of national and international fisheries experts, with participation by NOAA Fisheries as technical advisors to the working group, convened by the Lenfest Ocean Program. The purpose of the group was to develop recommendations on methodology for setting annual catch limits and implementing accountability measures to improve management of all US fisheries managed under Federal FMPs. The process recommended by the Working Group is general and applicable to other fisheries as well.

The Working Group members (Andrew Rosenberg, David Agnew, Elizabeth Babcock, Andrew Cooper, Charlotte Mogensen, Robert O'Boyle, Joe Powers, Gunner Stefánsson, and Jill Swasey) were chosen for their expertise in fisheries science and management. They served as individuals, not representatives of any organization, and the report presented here is the consensus view of these independent experts. The Working Group members brought experience and perspectives from many fisheries around the world to the two meetings held in the summer of 2007 in Boston, with MRAG Americas, Inc. providing staff support.

The Magnuson-Stevens Fisheries Conservation and Management Act (MSFCMA) is the primary law regulating marine fisheries management throughout the United States. The act was first adopted in 1976, amended in 1996, then recently amended again and reauthorized in January 2007 (DOC, 2007). The MSFCMA of 1976 was responsible for phasing out foreign fishing through the development of a US exclusive economic zone and the development of regional fishery management councils to manage and conserve fisheries. The 1996 amendments concentrated on sustaining fisheries by ending overfishing and rebuilding fish stocks, protecting essential fish habitat and reducing bycatch. The amendments made progress toward recovery of depleted stocks and sustaining stock health, but many stocks remain overexploited or have not been rebuilt (NOAA 2007, Rosenberg et al. 2006). As a result, the 2007 amendments are designed to improve accountability in management to prevent overfishing and rebuild stocks to levels that will support maximum sustainable yield.

Section 104 (a)(15) of the 2007 Magnuson-Stevens Reauthorization Act (MSRA) establishes "a mechanism for specifying annual catch limits in the plan (including a multiyear plan), implementing regulations, or annual specifications, at a level such that overfishing does not occur in the fishery, including measures to ensure accountability." Congress has set a "no fail" deadline to establish catch limits for all fisheries experiencing overfishing by 2010, and 2011 for all other fisheries. This Lenfest Ocean Program Working Group has developed an approach for establishing annual catch limits (ACLs) and accountability measures to meet the requirements of the revised MSFCMA. This report will be submitted to NOAA Fisheries as input during their rule-making process of creating guidelines for implementation of the MSRA.

The Working Group proposed the following principles should guide the process of setting ACLs:

- ***As a default or starting point, preventing overfishing applies to ALL stocks, therefore, so should ACLs.*** ACLs need to be set for all stocks in a fishery, not just the dominant stocks of a fishery nor those where the most complete information is available. The goal should be to sustainably manage all fishery resources, not simply those of greatest value. Therefore, ACLs and accountability measures are needed for data poor stocks and those that are minor components of the catch unless it is very clear that the fishery cannot impact a given stock in any significant way.
- ***To successfully end and prevent overfishing, OFL > ABC ≥ ACL.*** According to the MSFCMA, the Overfishing Level (OFL) is the estimated catch (in numbers or weight) beyond which overfishing occurs, and is based on Maximum Sustainable Yield (MSY). The acceptable biological catch (ABC) is a target catch which ensures that OFL is not exceeded accounting for

uncertainty (see below). In principle, if catches were set at or below a properly determined ABC then there is a low chance of overfishing (exceeding the OFL). Optimum Yield (OY), according to the MSFCMA, is proscribed based on MSY, as reduced by relevant economic, social and ecological factors and provides for rebuilding as needed. The OY is the target catch, below the ABC level, chosen by managers to additionally account for other factors related to the economic, social and ecological impacts of the fishery and fishery management. The ACL should ensure that overfishing does not occur and rebuilding requirements are met and therefore must be at or below the ABC level and should enable the fishery to achieve OY. This logically means that OFL will be greater than ABC which will be greater than or equal to ACL.

- ***ACLs should account for risk of overfishing for each stock.*** In this regard, the Working Group defines 'risk' as the probability of overfishing given the consequences of overfishing. So, for example, if the probability of exceeding a reference point for overfishing is relatively low, but the consequence of exceeding that reference point is a stock decline that may be difficult to recover from, then the risk would be higher than if the consequences of exceeding the reference point were less severe.
- ***Uncertainty is inevitable and should be accounted for in setting ABC and ACL.*** The probability of overfishing is, in general, a function of the uncertainty in the current status of the stock, the uncertainty at what level of catch overfishing occurs (OFL), and the ability to control and monitor the fishery. The first two of these factors are related to scientific uncertainty resulting from incomplete or inaccurate data, model error, and environmental variation, all of which occur in every fishery to varying degrees. The latter factor, termed implementation uncertainty, relates to the efficacy of management controls and monitoring. If the catch can be very well controlled, including landings and bycatch for all sectors of the fishery, and the data collected are of high quality, then implementation uncertainty will be low. It should be recognized, however, that in many fisheries, this is not currently the case and implementation uncertainty may be substantial, such that the probability of overfishing is increased and therefore the risk to the resource is increased.
- ***Consideration of risk must include some evaluation of the vulnerability of a stock to the fishery.*** The consequences of overfishing are a function of the vulnerability of the stock to the fishery. Here we consider vulnerability with respect to the ability of the stock to produce MSY on a continuing basis under a given level of fishing pressure. Stocks are more vulnerable if their productivity is low because of slow reproduction rates or other factors in the life history of the species, and /or high susceptibility to capture by the fishing gear used, impacts on essential fish habitat, or the current status of the resource, for example. We have not considered the consequences of overfishing beyond the consequences to the resource. Economic and social consequences should also be considered, always mindful of the fact that any economic or social benefits depend upon a healthy and productive resource in the long-term.
- ***Vulnerability and the consequences of overfishing primarily relate to individual stocks of fish, and therefore grouping of stocks into assemblages for management can undermine sustainability.*** Grouping of stocks into assemblages because of data limitations or convenience should be done with great caution and avoided where possible, i.e., where stocks can be monitored individually. In particular, stocks that are of substantially different characteristics such as life history, current status, vulnerability to fishing gear or distribution, should not be lumped together if it is possible to avoid it. Where grouping is necessary, catch limits must be set very conservatively to avoid overexploiting the most vulnerable stocks in the grouping. It is necessary to avoid overfishing of every stock in an assemblage, not just an indicator stock or the assemblage as a whole.
- ***The buffer or distance between the ACL and the OFL should be greater when the risk of overfishing is higher (i.e., when uncertainty is greater or the consequences of overfishing as expressed by vulnerability of the resource is higher).*** Setting more conservative catch limits should reduce the risk of overfishing. In effect, this means that when risk is high, the ABC and the ACL should be further below the OFL than when risk is lower. In all cases, except when all sources of uncertainty are negligible, the ACL should be below the OFL to account for uncertainty and vulnerability. Management should determine the level of caution needed (i.e., the probability of exceeding the OFL), based on the principles given here and the perceived risk to the stock.

- ***Setting ACLs for each fishery in the US should be considered as a performance measure for that fishery and, therefore, is the basis for assigning accountability to managers and the fishery for this important goal of the Act.*** That is, under the amended MSFCMA, the major objectives of each fishery management plan are to end or prevent overfishing and rebuild overfished stocks. Regardless of the specific management actions (e.g. catch quotas, effort controls, gear controls, bag or trip limits, closed areas or seasons) employed by managers for a given fishery in the management plan, the fishery output is some level of catch. Setting an annual limit and comparing the actual catch to that annual limit measures how well the management plan performed in controlling fishing by their chosen actions.

The Working Group outlined a process by which catch limits can be set for fisheries with varying degrees of available information, uncertainty and vulnerabilities. For each step described, we suggest methods for implementation of the process and provide caveats as needed. The Working Group recommended a final step to implement accountability measures. Central to this process is determining the "buffer" needed between the OFL and the ACL to ensure that the probability that overfishing doesn't occur is increased and rebuilding proceeds as needed. That is, the process is designed to determine how far the ACL should be set below the OFL to account for the various sources of uncertainty referred to in the principles above. In the same vein, accountability should reflect the implementation uncertainty in management, such that the buffer between the OFL and the ACL should increase if fishery performance indicates that the overall catch from the fishery has not been well controlled. Focusing on the size of the buffer between OFL and ACL provides consistency in the process of dealing with various sources of risk to the sustainability of the fishery.

The process developed by the Working Group for setting ACLs includes the following steps:

1. **Scientists evaluate vulnerability for each resource stock based on an analysis of its productivity and susceptibility to the fishery. In cases where vulnerability is minimal and unlikely to develop in the future, categorize them as *de minimus* and re-evaluate periodically to ensure that no vulnerability to the fishery has developed requiring an ACL. For all other stocks proceed to step 2;**

2. **Scientists determine a sensible OFL for each stock based on the concept of MSY and estimate uncertainty in the knowledge of stock status and trends;**

3. **Managers decide on the acceptable level of risk of exceeding the prescribed OFL considering the consequences of overfishing with respect to the vulnerability for a given stock or complex;**

4. **Scientists recommend an ABC below the OFL, such that the risk of overfishing isn't exceeded, accounting for various sources of uncertainty, including implementation uncertainty, by increasing the buffer distance of the ABC below the OFL. The scientifically determined ABC is a maximum for the ACL. Policy makers may choose to set the ACL at or below the ABC in consideration of other social, economic or ecological factors;**

5. **Managers and scientists evaluate performance of management regularly with respect to adhering to the ACL in terms of preventing overfishing over a series of years (1-3 yrs). As the accountability measure, modify the buffer as appropriate if the fishery has / has not exceeded the ACL or OY.**

2 Evaluation of Resource Vulnerability for ACL Determination

The Working Group recommends that the setting of ACLs for US fisheries resources be based on a **risk assessment approach** to management, which would include evaluations of vulnerability of the resource, uncertainties in scientific information, fishery operations, environmental effects, compliance with regulations and efficacy of management tactics. In effect, this means that the setting of ACLs should ensure that due precaution is taken to ensure that overfishing doesn't occur and that the degree of precaution needed is greater for more vulnerable resources and where uncertainty is greater. The group found that the framework developed by a recent joint Australian CSIRO CSIRO / AFMA project (Hobday et. al, 2006) for Ecological Risk Assessment (ERA) provides a good basis for the first step of this process - the evaluation of vulnerability of fishery resources.

The Working Group utilized Level 2 of the ERA, the Productivity and Susceptibility Analysis (PSA), for this purpose. Briefly, productivity and susceptibility tables list attributes for categorization of each fishery stock from high to low productivity and susceptibility. The rankings are based on a combination of susceptibility and productivity that determines the relative vulnerability of the unit of analysis (stock or assemblage) and are given a score (1 to 3 for high to low productivity, respectively; and 1-3 for low to high susceptibility, respectively). The determination of the relative productivity and susceptibility of a given stock is made based upon expert opinion, that is, stocks are ranked by knowledgeable experts. The Working Group used Tables 1 and 2 to illustrate the concept. A set of productivity factors is given in Table 1, including life-history features of the species and its role in the food web; example susceptibility factors are given in Table 2. The specific factors included in these tables and a consistent set of guidelines for scoring each factor as high, medium or low rank for application to all US fisheries should be further developed as part of implementing the framework for setting ACLs. In addition to clear and objective scoring guidelines for the factors in the table, the Working Group recommends that additional investigation and consideration be given to the following:

- The overall scores for productivity and susceptibility are given based on the sum of the scores of the factors in each table. The weighting of each factor in the summed score should be carefully considered as part of the scoring guidelines;
- The susceptibility table should include a factor related to the ability to control fishing mortality rates and catch in each fishery (i.e. including all sources of fishing mortality for a given stock) and the selectivity pattern of the fishery;
- Habitat attributes should only be scored on the susceptibility table and be based on existing essential fish habitat (EFH) determinations (Appendix B);
- Concerns with sub-stock structure and localized depletion should be considered for inclusion in the analysis;
- Wherever possible, vulnerability for each of the stocks within an assemblage should be performed separately. The Working Group considered examples of assemblages for sharks, west coast rockfish and Gulf snappers (Appendix C). In these examples, the risk of lumping species of very different vulnerability became apparent, especially for the shark complex. The consequence of creating an assemblage of species of different vulnerabilities is likely to be severe depletion of the more vulnerable species, like hammerhead sharks in the example.

The advantage of the ERA is that it allows the categorization of most, if not all species covered by NMFS FMPs – target, bycatch, or *de minimus* species – using a common definition of risk based upon productivity and susceptibility. For most stocks, it will be relatively straightforward to obtain information on the parameters related to productivity and susceptibility. In cases where information is lacking, it might be possible to derive these parameters through comparison with species of similar life history. Since the rankings are categorical and can be revised as more information becomes available, the method should be applicable to fishery resources even in data-poor situations. When a score is undetermined, higher vulnerability should be assumed, such that more vulnerable stocks have a lower probability of overfishing occurring, until information indicates otherwise.

Once the ERA is completed, the combination of susceptibility and productivity scores is a measure of the relative vulnerability of the unit of analysis (stock or assemblage). The scores for each stock are plotted on a simple productivity susceptibility graph (Figure 1) where the *x*-axis represents the measure of productivity, the unit's ability to recover after impact from fishing, and the *y*-axis represents the susceptibility of the unit to impacts from fishing. Vulnerability increases from the origin of the plot outward as the scores increase. More vulnerable stocks should be managed such that there is lower probability of overfishing occurring because the consequences for that fishery are greater (e.g., recovery times are longer or depletion more severe). The measure of relative vulnerability should be used by managers to determine the acceptable level of risk of overfishing in step 3 of the ACL setting process.

Table 1. Productivity Table

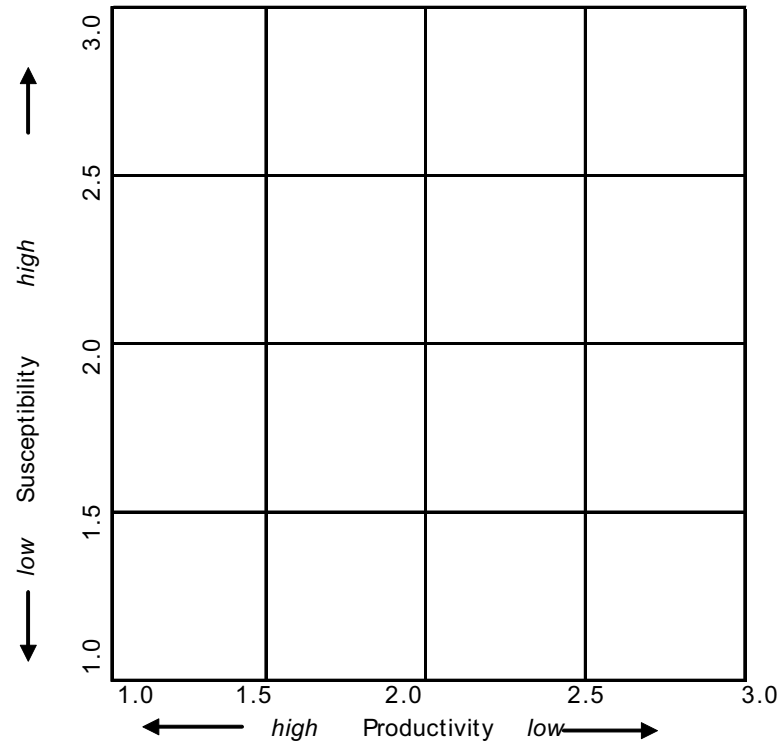
Stock or Complex:

Productivity Attribute		Rationale (examples) for attribute	Rank		
			High Productivity		Low Productivity
			1	2	3
Species-level attributes	Generation Time	Difference between size at birth and maximum; Age at maturity; Size at maturity			
	Average maximum age/size				
	Fecundity	Measured fecundity; Frequency of breeding			
	SSB/SSB_0				
	Reproductive strategy	(r → K)			
Habitat attributes	Persistence of effect of fishing activity	Recovery time			
Community attributes	Food web	Mean trophic level (H_0: low, more productive, can also indicates change)			

Table 2. Susceptibility Table
Stock or Complex:

Susceptibility Attribute		Rationale for attribute	Rank		
			Low Susceptibility		High Susceptibility
			1	2	3
Species-level attributes	Availability (extent of overlap between the species' habitat and area fished)	Depth range; Habitat types			
	Catchability	Water column position; Schooling/aggregation behavior; Activity times Morphology - affecting capture			
	Survival	Survival after capture and release			
	Spatial refuge from fishery	Seasonal migrations; Closed areas; Vertical migrations			
Habitat attributes	Stability of habitat	Time for formation; Disturbance of habitat (mixing scale)			
	Elevation/size of habitat	Rugosity; Fractal dimension			
	Structure of habitat	Ordering dimension; Heterogeneity score; Viscosity; Grain size			
Community attributes	Trophic structure	Fishing at level where there are few species is likely to have a greater impact on the measure than fishing where there is a diverse assemblage at the trophic level.			
	Fishery specific	Number of trophic levels captured by gear and Fishing method; Number of gear types; Percent of each trophic level subject to fishing			

Figure 1. Productivity Susceptibility Graph



3 Determination of the Overfishing Limit and Characterizing Uncertainty

As noted in the principles discussed in the introduction, the OFL, ABC and OY form a progression of reference points in the management process. A procedure for setting ACLs then should begin with the determination of the OFL. The OFL is the best estimate of the maximum annualized catch that can be taken without overfishing the resource. It is based on the best estimate of F_{msy} applied to the current level of abundance, where available, and if the OFL is an unbiased estimate of MSY, then the long-term average OFL is then the MSY.

Then, accounting for all the various sources of uncertainty outlined in the principles and the vulnerability of the resource estimated in the first step of the process (the PSA), the scientific process advises on an ABC (acceptable biological catch) less than the OFL and is calculated to ensure that the risk of overfishing is within acceptable limits as defined by managers. The ABCs becomes the upper limits for the managers when setting the ACLs. When setting the ACL, managers take into account social and economic factors, other ecological factors, time lags in getting updated information, and uncertainty in control and monitoring of all sources of fishing mortality. ACL is the annual level of catch that is selected to prevent overfishing, rebuild

overfished stocks and achieve OY. In this manner, the contribution of a stock to the fishery OY is then the long-term average ACL.

Consistent methods for setting OFL, ABC and ACL are needed even when data are limited. No matter what the level of data, OFL is the best estimate of the overfishing level, ABC builds in the scientific and management (implementation) uncertainty, and ACL builds in the social, economic and ecological factors. The first step is to estimate the OFL for each stock.

3.1 OFL and Uncertainty in Data Rich Stocks

In data-rich situations, where extensive stock assessments have been conducted, setting an OFL is relatively straightforward, though still will contain substantial uncertainty which must be considered in the subsequent application of that OFL. A stock assessment should provide parameter estimates that enable the calculation of MSY, and the biomass and fishing mortality rates that should obtain that MSY under conditions of stationarity (constant mean and variance) for a given fishery stock. The use of established assessment methods should also quantify uncertainty in the OFL estimate, estimates of stock status, and estimates of implementation uncertainty. In some cases where MSY is not explicitly calculated, some generally accepted proxies for MSY may be used or proxies for the fishing mortality rate that is expected to produce MSY. However, the OFL must be stated in either numbers or weight. In these data rich situations, the OFL estimate can be directly employed in subsequent steps of the framework recommended by the Working Group.

Note that even in data rich situations, it is important to go through the vulnerability analysis in step one in order to evaluate risk. Also, the uncertainty estimates from the assessment process may not reflect all sources of uncertainty. As retrospective analysis has frequently shown, assessments often appear more precise or accurate than they subsequently are revealed to be once additional data are available. Data-rich situations should not be considered synonymous with low uncertainty.

In evaluating a set of data-rich stocks with estimated OFLs, uncertainty and vulnerability can provide a good basis for evaluating the impacts of vulnerability and uncertainty on the process of setting ABC with respect to OFL. The Working Group recommends a simulation study of the impacts and consequences of uncertainty and vulnerability on fishery performance along the lines of the work of Shertzer, Prager and Williams (Appendix E), using results from assessments of all the data-rich stocks in the US. This should allow some analysis of the relationship between uncertainty and vulnerability shown schematically in Figure 2. The simulated performance of a specific ABC (set a specific distance below OFL, i.e., with various buffers) for each data-rich stock with different levels of uncertainty (only two are shown here for clarity) should be evaluated to develop a basis for relating the size of the buffer to uncertainty and vulnerability. This pattern, which should include stocks across a range of productivities and susceptibilities, will then inform the setting of ABCs for data poor stocks.

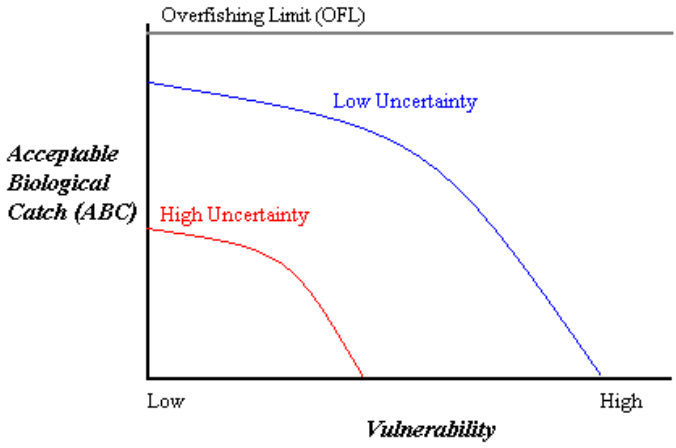


Figure 2. Schematic of the possible relationship between the ABC and vulnerability at different levels of uncertainty. The expectation is that in order to ensure that there is an acceptable level of risk to the resource, the buffer between OFL and ABC should be greater for more vulnerable resources. If uncertainty is higher, the buffer should be higher than in cases where uncertainty is less.

This type of analysis is a form of what is termed in the fishery literature, 'management strategy evaluation (MSE)'. The Working Group recommends that an MSE procedure is an essential component of any ACL setting procedure. In order to perform this simulation exercise for the data-rich stocks, the vulnerability analysis needs to be performed using the PSA as described above, and a simulation exercise of the type developed by Shertzer et al. (Appendix E) performed on that same range of stocks.

3.2 OFL and Uncertainty in Data Poor Stocks

For many fishery stocks, there is insufficient information to perform an adequate stock assessment. There may be some catch information available upon which to base determinations of OFL and ABCs. It has often been the case that catch quotas have been set at the average of historical catch and, sometimes, this policy has had disastrous consequences because average catches reflect overfishing of the resource and the stock has been depleted before management could respond (e.g. sharks, some west coast rockfish, Pacific Ocean Perch in Alaska). This highlights the importance of ensuring that data collection of basic fishery information is accomplished for all fisheries even for what may be currently considered minor components of the catch.

One of the difficulties in using historical average catches as a basis for setting ABCs is that we cannot easily distinguish how much of the catch was sustainable, and how much was due to fishing down the biomass. The determination of OFL for data poor stocks should be based on a minimum of average catch (or survey series) as modified by expert opinions on depletion and productivity as far as possible. While this approach may have substantial uncertainty, it is expected that it will provide the impetus to improve the timeliness, type, and precision of information available.

The Working Group discussed a straightforward method for estimating sustainable catch levels when we have little more than a time series of catches (The Windfall/Sustainable Yield Ratio method, MacCall unpub., see Appendix D) to provide an interim solution until a more complete

assessment is available. The approach relies on a time series of catches, some basic life history parameters and expert opinion on the current level of depletion of the resource relative to the unexploited biomass level or the level of biomass needed to support MSY. Essentially, the average catch is discounted by the amount of that catch that can be considered part of the fishing down process, i.e., the difference between the unexploited biomass level and the MSY biomass level. That discounted average catch level can then be used as a basis for OFL, and uncertainty estimated by Monte Carlo methods by simulating performance for different buffer levels using the same sort of MSE approach described above. The Working Group noted that the performance for stocks of differing vulnerabilities can hopefully be related to the results of the data-rich stocks as indicated schematically in Figure 2. The Working Group noted that there should be a smooth progression in buffer size between the OFL and the ABC as uncertainty increases and that the pattern should be similar for data-rich and data-poor stocks.

For stocks where a time series of catches is not available, then the fishery should be managed very cautiously at as low a level of catch as possible until at least catch data are available to avoid overfishing. It is important that this be used as an incentive to acquire relevant catch information. It should definitely be the case that catch limits are set for stocks without catch information since then the incentive may be against acquiring basic fishery information. For cases where data are not sufficient for assessment, every effort should be made to explore alternative sources of information, such as time series of abundance from surveys, historical length-frequency data, or demographic studies, which could provide some indication of the status of the stock.

3.3 Setting OFL for Assemblages

Many fishery management plans treat groups of species or stocks as an assemblage without regard to the individual stocks that it contains. In some regions, because of the large number of species in the catches and the difficulties of monitoring, this practice has been considered essential for understandable reasons. However, the Working Group noted that species grouped into an assemblage for the purposes of setting OFLs and ABCs may not have similar characteristics with respect to vulnerability or uncertainty. In consequence, the more vulnerable stocks will be at greater risk of depletion or even extinction if exploitation is set based on the less vulnerable stocks. The Working Group recommends that the PSA vulnerability analysis be performed on all stocks individually as much as possible and that assemblages of fish with different levels of PSA scores be avoided to guard against this problem.

Similarly, a catch time series for an assemblage may inherently mask problems with one or more species in the grouping if discounted average catch is used to set the OFL. The OFL for an assemblage as a whole needs to ensure that the average proportion of each stock in the catch does not change over time and that the more vulnerable stocks still receive adequate protection. If it is not possible to distinguish the catches of individual stocks in the assemblage, this should be considered a major source of uncertainty such that the buffer between OFL and ABC is substantially increased to protect against overfishing.

4 Policy Decision on Acceptable Risk and Setting of ABCs and ACLs

The ACL is the target level of catch for a future year (or years) that is expected to keep the risk to the resource at an acceptably low level and other factors that contribute to the OY are accounted for as a matter of policy. It is always less than or equal to the ABC. Important to this determination is the concept that no estimates are perfectly precise and any attempt to obtain OY entails some risk of overfishing. The scientific goal is to calculate the buffer between OFL and ABC such that the probability of overfishing is within an acceptable level of risk as determined by policy makers in the statute, the courts and by managers at the national and regional level. In the process for setting ACLs recommended by this Working Group, decreasing the level of risk is addressed by increasing the buffer between the ABC and the OFL.

A related concept is that more knowledge should result in a narrower buffer; we should not use best estimates without any buffer in data-poor situations with unknown levels of uncertainty, and then introduce a buffer when we become able to calculate uncertainty. Instead, we need reasonable default levels of uncertainty to use in the data-poor situations so that we can always expect to improve both fishery average yield and performance in preventing overfishing as we obtain more knowledge. Of course, the new, more data-rich point estimates of OFL and ABC may be above or below the previous data-poor proxies, but the reaction to the more data-rich estimates should be a reduced buffer. One of the important considerations in the setting of buffers between OFL and ABC is to ensure that there is incentive to improve monitoring of the fishery. Linking reducing uncertainty to reducing the buffer size and therefore increasing ABC is one means of accomplishing this.

For stocks that have previously been determined to be overfished and are now on rebuilding plans, there is an additional condition that the ABC should meet. The ABC should both prevent overfishing and allow the stock to have a sufficiently high probability of rebuilding to B_{msy} within a specified number of years. In doing so, it is not just the prevention of overfishing that matters. Now the impact of the entire time series of ABCs on future stock abundance needs to be taken into account.

The logic used in setting ABCs for stocks in rebuilding plans can be extended to setting the ABC for any stock. This alternative formulation focuses on the MSFCMA's general definition of overfishing as a level of fishing that jeopardizes a stock's capacity to produce MSY. From this perspective, the projected stream of future ABCs could be calculated on the basis of whether they have a sufficiently high probability of leaving the stock at or above B_{msy} some specified time in the future. With such an approach, it would be straightforward to calculate the tradeoff between cumulative catch over a specified time period and the resultant risk of stock depletion. If this "time in the future" is taken to be 10 years, then this approach is seamless with a rebuilding plan for stocks that are biologically capable of rebuilding within 10 years.

Based on the PSA plots and vulnerability analysis, policy-makers should assign acceptable levels of risk (P*) values consistently across fisheries with similar vulnerability profiles. These P* values should be a result of setting buffers of different sizes for stocks based on their vulnerability and the uncertainty in their status and management, which follows from the efforts of Restrepo et al. (1998) to recommend precautionary management measures for fisheries. The process suggested here extends that work.

5 Accountability Measures

Accountability measures related to ending overfishing and staying within annual catch limits should use the same framework as setting those catch limits in the first place. Based on the discussion in the Working Group, this can be accomplished by relating a fishery's record of meeting its target (ACL) to the size of the buffer between the ABC and the OFL. For example, the OFL for a fishery should be defined based on MSY for the fishery as prescribed in the law. The ABC should be set based on the level of risk for that particular stock according to the framework described above by the Working Group. A stock with a higher risk level should have a greater buffer between the OFL and the ABC, and in all cases the ABC should be below the OFL. Then, on an ongoing basis, the risk level for the fishery should be re-evaluated as new information becomes available, monitoring improves, gear is modified and other factors in the risk assessment change or become clearer. In addition, the performance of the fishery with respect to the ACL should be considered such that a fishery that consistently stays within the ACL is considered to be at lower risk of overfishing (because management control is more certain), and therefore needs less of a buffer between the ABC and the OFL. Conversely, a fishery that exceeds the ACL in one or more years is considered to have higher implementation uncertainty such that the risk is higher and the buffer should be increased between the ABC and the OFL. In some cases, it may be that only a portion of the fishery exceeds it allocation of the ACL. Then, the buffer between the ACL and ABC for that portion of the fishery should be increased to account for implementation uncertainty, even if the overall ABC for the fishery remains the same.

The advantage of this approach is that a consistent framework is maintained. In addition, relating the performance to the size of the buffer between the ACL and the OFL can be done on a periodic basis such that some variability in performance can be accounted for but smoothed out. In theory, if a fishery continues to consistently perform poorly and exceed the ACL, then the buffer could become large enough to make the fishery bycatch only or even close the fishery, retaining this option in extreme cases. But if the fishery improves its performance, then the catch limits could gradually rise as the buffer size is reduced. Furthermore, other factors such as the quality of monitoring and fishery information are considered in the same framework in adjusting the size of the ACL or ABC to OFL buffer. That means, for example, if apparent performance is good but the reporting and monitoring of the fishery is declining in quality, then the buffer may not be reduced until all factors show improvement.

This framework for accountability has some clear advantages over systems that, for example, require overage of catches to be "paid back" in subsequent years. Here, the problem of building up substantial deficits is unlikely to occur, relating performance to other factors can be done in a consistent way, and changes are less likely to be abrupt in setting of ACLs. Furthermore, the buffer can be evaluated on a periodic basis as opposed to every year to smooth out some variability and improve fishery stability. On the other hand, a payback scheme is much more tangible and direct than changing the buffer between the ACL and the OFL and might be a stronger incentive to improve management. Clearly, if the accountability is related to the buffer size between the ACL and OFL, then the restrictions implied by an increased buffer need to be strictly applied and enforced, with immediate action taken to implement management measures to adhere to increased (or decreased) buffer sizes.

In using this framework, some additional principles must be applied. Logically, stocks that are at greater risk should have a greater consequence for poor performance than stocks that are at lesser risk. This means, for example, that if the ABC is exceeded for a stock under rebuilding, there should be a greater increase in the size of the buffer between the ABC and the OFL than for a stock that is not in an overfished condition. In other words, the recent status of the resource must be considered in deciding how the accountability measure should be applied.

Secondly, there always must be a direct link between the provision of accurate and complete data and the application of accountability measures that adjust the size of the buffer between the ABC

and the OFL. In some sense, data collection is the lynchpin for judging the performance of the fishery. If data quality declines, the buffers should be increased in all cases, even if there is apparent adherence to the ACL. This is because that performance cannot be determined as well when the quality of the data declines. Of particular note is the need to ensure that all sources of fishing mortality: landings, discards, state waters catches, recreational catches, etc, are included in the monitoring of the fishery. The same is true of enforcement and compliance. Judgments on changes in data quality and compliance with the regulations need to be made along with the accountability measures.

Thirdly, it may be necessary to consider the application of the buffer between ACL and OFL for sectors of the fishery individually. For example, the commercial and recreational fishery may need to be evaluated separately and accountability of performance with respect to the ACL may need to be considered separately as well. While this is challenging, it may be crucial in ensuring that accountability is appropriately placed. At the same time, in general, the fewer sub-divisions of a given fishery the better in order to prevent the system from becoming hopelessly complicated.

6 Next Steps

The Working Group recommends the process outlined here: beginning with the vulnerability analysis, estimating OFLs and uncertainty, choosing an acceptable level of risk, advising on the needed size of the buffer between OFL and ACL, and the setting of accountability with respect to increasing or decreasing the buffer for setting precautionary and consistent ACLs across US fisheries. In order to implement this process, the working group recommends several specific efforts be undertaken:

- The Council Science and Statistical Committees (SSC) will have a major role in the process of setting ACLs and should be brought into the elaboration of the process outlined here;
- The vulnerability analysis and PSA plots for all managed species must be developed and will provide a critical basis for evaluating risk. This analysis is based on expert opinion and, from the examples done by the Working Group, can be performed relatively quickly;
- In order to complete the vulnerability analysis, a consistent set of factors, factor weights and scoring guidelines for US fisheries need to be developed. This should be done in a workshop setting and completed as soon as possible;
- A management strategy evaluation (MSE) simulation framework is needed to determine the relationship between the size of the buffer, uncertainty, and vulnerability for various stocks, beginning with the data-rich stocks and extending to the data-poor stocks. This can follow the results of the vulnerability analyses and will include an overall simulation study of the approach recommended here;
- The depletion adjusted average catch approach (MacCall unpub.) shows promise for dealing with data-poor stocks and should be tried on as many stocks as possible. An uncertainty analysis for this method should also be developed and considered in light of the vulnerability, uncertainty and buffer size MSE recommended above;
- This conceptual framework will be most effective if it can be presented and discussed in national and regional workshops including examples from different fisheries around the country.

With the implementation of the process suggested here, NOAA Fisheries has the opportunity to make a major improvement in the sustainability of fisheries in the US. The process is broadly applicable to fisheries around the country and internationally and builds on efforts underway around the world. While this is a conceptual framework, it can be implemented relatively quickly and is adaptive as new information becomes available.

References

DOC 2007. Magnuson-Stevens Fishery Conservation and Management Act Reauthorization.

Hobday, A.J., A. Smith, H. Webb, R. Daley, S. Wayte, C. Bulman and J. Dowdney. 2006. Ecological Risk Assessment for the Effects of Fishing: Methodology. Report R04/1072 for the Australian Fisheries Management Authority, Canberra.

MacCall Unpublished, 2007. Windfall/Sustainable Ratio Method.

NOAA 2007. Fish Stock Sustainability Index: 2007 Quarter 2 Update through June 30, 2007.

Restrepo, et al. 1998. Technical Guidance on the Use of Precautionary Approached to implementing National Standard 1 of the Magnuson-Stevens Fishery Conservation and Management Act. NMFS publication.

Rosenberg, A.A., J.H. Swasey and M. Bowman. 2006. Rebuilding US Fisheries: progress and problems. *Front. Ecol. Environ*. 4 (6), 303-308.

Appendix A – Useful Terms

Most terms have been adapted from National Standard 1 and Annual Catch Limit Terminology

Acceptable biological catch (ABC) is a level of annual total catch, including mortal discards, that may not exceed the amount corresponding to F_{lim} translated into an amount of catch on an annual basis (see Overfishing Level). For overfished stocks, a rebuilding ABC must be set to reflect the annual catch that is consistent with the rebuilding mortality targets

Accountability measures (AMs) are management controls implemented such that overfishing is prevented, where possible, and corrected, if it occurs. They include definition of OY and establishment of an appropriate OY control rule such that OY is achieved and overfishing does not occur, measures to monitor progress of the fishery during the season and take action to prevent catch from exceeding the overfishing level, and corrective measures to respond to overages that may occur.

Annual *catch limit (ACL)* is a level of catch specified for a stock or stock complex each year, that is based on the OY control rule and that does not exceed the annual harvest level recommended by the Council's scientific and statistical committee (SSC).

Biomass means the total quantity of fish in a stock and is used synonymously with stock abundance. Biomass (B_{msy} and B_{lim}) focuses on reproductive potential of the stock so that ''spawning biomass'' is used and is commonly measured as mature female biomass. If spawning biomass is not available, total biomass or other proxies are sometimes used. Biomass is usually measured in total tonnage of fish, but could be numbers or other units to be synonymous with stock abundance.

B_{lim} means minimum biomass limit.

B_{msy} means MSY biomass.

Buffer zone is the area between a limit reference point and a threshold reference point (e.g. OFL and ABC). The size of the buffer is related to perceived risk and preventing overfishing.

Fishing mortality rate means the rate of mortality imposed on the stock or stock assemblage due to fishing activities. F is an abbreviation for fishing mortality rate.

F_{lim} means maximum fishing mortality limit.

MSY means the Maximum Sustainable Yield and is calculated as the largest long-term potential average catch or yield that can be taken from a core stock or stock assemblage under prevailing (*e.g.*, generally current) ecological, environmental and fishery conditions while fishing according to a MSY control rule.

MSY stock size (B_{msy}) means the long-term average stock abundance level of the core stock or stock assemblage, measured in terms of spawning biomass or other appropriate proxy, that would occur while fishing according to the MSY control rule. The MSY stock size is the target stock size to which overfished stocks must be rebuilt.

Overfished means a stock or stock assemblage whose biomass has been determined to be below its B_{lim}. Determination of an overfished status triggers the requirement for development of a rebuilding plan.

Overfishing (to overfish) means to fish at a level that jeopardizes the capacity of the stock to produce MSY on a continuing basis.

Overfishing level (OFL) means the annual amount of total fishing mortality that corresponds to the estimate of F_{lim} applied to annual biomass. Catch exceeding the OFL would indicate that overfishing is occurring.

OY (Optimum Yield): The term "optimum", with respect to the yield from a fishery, means the amount of fish which—

(A) will provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities, and taking into account the protection of marine ecosystems;

(B) is prescribed as such on the basis of the MSY from the fishery, as reduced by any relevant economic, social, or ecological factor; and

(C) in the case of an overfished fishery, provides for rebuilding to a level consistent with producing the MSY in such fishery.

Rebuilding means implementing measures that increase a fish stock to B_{msy} or its proxy.
Stock assemblage means a group of stocks in an FMP that are sufficiently similar in geographic distribution, co-occurrence in fisheries, and life history so that SDC measured on an assemblage-wide basis or for an indicator stock will satisfy the Magnuson-Stevens Act requirements to achieve OY and prevent overfishing of a fishery. Not all stocks in an assemblage will have sufficient information to measure stock-specific status with respect to all reference points.

Appendix B – Susceptibility Attributes derived from EFH Determinations

Generic Susceptibility Table: The following table describes the methods that the Gulf of Mexico, New England, and North Pacific Councils have used to analyze the impacts of fishing gear on habitat. These methods could be used in come up with habitat attributes and ranks for the PSA tables.

Susceptibility Attribute		Rationale for attribute	Rank		
			Low		High
			1	2	3
Habitat	**Gulf of Mexico EFH Simple analysis:** Habitat sensitivity (to gear) For stocks managed by the **Gulf of Mexico Council**, see the EIS for EFH in Gulf of Mexico FMPs	How does the fishing gear interact with the habitat? Habitat sensitivity (the capability of a gear damaging habitat) is ranked on a scale of 0 to 3 (with 0 being negligible to 3 being high) Can use the habitat sensitivity ranks in table 3.5.1 of EIS for EFH in Gulf of Mexico FMPs to rank the species here.			
Habitat	**Gulf of Mexico EFH Comprehensive analysis:** Calculated a fishing impacts index For stocks managed by the **Gulf of Mexico Council**, see the EIS for EFH in Gulf of Mexico FMPs	Used a spatially structured index of fishing impacts, by gear and habitat, with the degree of fishing effort. If fishing effort is high in areas where habitat is sensitivity to the gear, then receive a high susceptibility score. (However, the results of this analysis are not straight forward and the lack of fishing effort data was a constraint in performing this analysis.) (See page 2-54 of EIS for EFH in Gulf of Mexico FMPs)			
Habitat	**New England EFH Simple analysis:** Habitat Sensitivity (sensitivity of the habitat to disturbance) For stocks managed by the **New England Council**, see the individual NEPA documents for the Scallop, Herring, Groundfish, and Monkfish FMP amendments. Do the other EHF EIS's for the other FMPs use the same ranking system?	How sensitive is the habitat to disturbance? The Habitat Sensitivity is scored on a scale of 0-2 (with 0 being not sensitive and 2 being highly sensitive). Can use the habitat sensitivity score from the EIS documents to rank the species here.			
Habitat	**New England EFH Comprehensive analysis:** Habitat Vulnerability For stocks managed by the **New England Council**, see the individual NEPA documents for the Scallop, Herring, Groundfish, and Monkfish FMP amendments. Do the other EHF EIS's for the other FMPs use the same ranking system?	Habitat vulnerability takes into account the habitats value to a species at a particular life stage, the habitat sensitivity (as describe above), and the extent to which the gear is used in areas that are designated as EFH for a given species and life stage. Habitat vulnerability has 4 scores: none, low, moderate, and high. Vulnerability score of none to low should receive a rank of 1 here. Vulnerability scores of moderate to high should receive a rank of 2 and 3, respectively, here.			
Habitat	**North Pacific EFH Simple analysis:** There wasn't a simple habitat sensitivity analysis used in Alaska. For stocks managed by the **North Pacific Council** - see EIS for EFH Identification and Conservation in Alaska	N/A			
Habitat	**North Pacific EFH Comprehensive analysis:** Used a quantitative effect and recovery model. The model outputs were then used by assessment biologists to carry out qualitative evaluations. For stocks managed by the **North Pacific Council** - see EIS for EFH Identification and Conservation in Alaska	Specifically, analysts assessed whether available info provides any indication that habitat changes caused by fishing would alter the ability of each stock to stay above its MSST over the long term. Results are summarized qualitatively for each stock in Appendix B of the EIS.			

Appendix C – Example PSA Tables for Sharks, Gulf of Alaska Pacific Cod, Gulf Red Snapper and the West Coast Rockfish Assemblage

Note the substantial difference in PSA scores for the two shark species, even though they are currently grouped in an assemblage for management purposes. This illustrates the risks of grouping disparate stocks.

1. Great Smooth Hammerhead Shark

Productivity Table: Great smooth Hammerhead Shark

Productivity Attribute		Rationale (examples) for attribute	Rank		
			High Productivity		Low Productivity
			1	2	3
Species-level attributes	Generation Time	Difference between size at birth and maximum; Age at maturity; Size at maturity			X
	Average maximum age/size				X
	Fecundity	Measured fecundity; Frequency of breeding			X
	SSB/SSB_0				X
	Reproductive strategy	(r → K)			X
Habitat attributes	Persistence of effect of fishing activity	Recovery time		X	
Community attributes	Food web	Mean trophic level (H_o; low, more productive, can also indicates change)			X

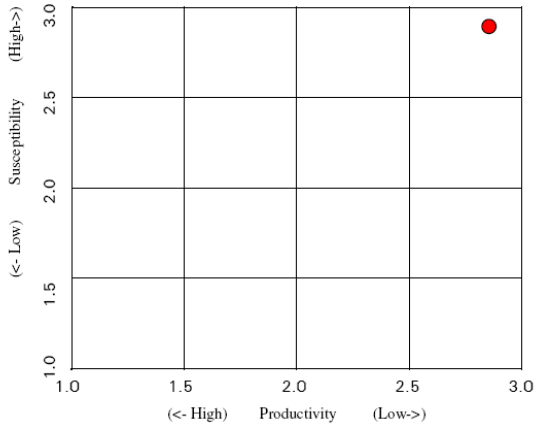
Average Rank: 2.85

Susceptibility Table: Great smooth Hammerhead Shark

Susceptibility Attribute		Rationale for attribute	Rank		
			Low Susceptibility		High Susceptibility
			1	2	3
Species-level attributes	Availability (extent of overlap between the species' habitat and area fished)	Depth range; Habitat types			X
	Catchability	Water column position; Schooling/aggregation behavior; Activity times; Morphology - affecting capture			X
	Survival	Survival after capture and release			X
	Spatial refuge from fishery	Seasonal migrations; Closed areas; Vertical migrations			X
Habitat attributes	Stability of habitat	Time for formation; Disturbance of habitat (mixing scale)			X
	Elevation/size of habitat	Rugosity; Fractal dimension		X	
	Structure of habitat	Ordering dimension; Heterogeneity score; Viscosity; Grain size	X		
Community attributes	Trophic structure	Fishing at level where there are few species is likely to have a greater impact on the measure than fishing where there is a diverse assemblage at the trophic level.			X
	Fishery specific	Number of trophic levels captured by gear and Fishing method; Number of gear types; Percent of each trophic level subject to fishing			X

Average Rank: 2.7

PSA Plot



2. Atlantic Blacktip Shark

Productivity Table: Atlantic Blacktip Shark

Productivity Attribute		Rationale (examples) for attribute	Rank		
			High Productivity		Low Productivity
			1	2	3
Species-level attributes	Generation Time	Difference between size at birth and maximum; Age at maturity; Size at maturity		X	
	Average maximum age/size			X	
	Fecundity	Measured fecundity; Frequency of breeding			X
	SSB/SSB$_0$			X	
	Reproductive strategy	(r → K)			X
Habitat attributes	Persistence of effect of fishing activity	Recovery time		X	
Community attributes	Food web	Mean trophic level (H$_0$: low, more productive, can also indicates change)		X	

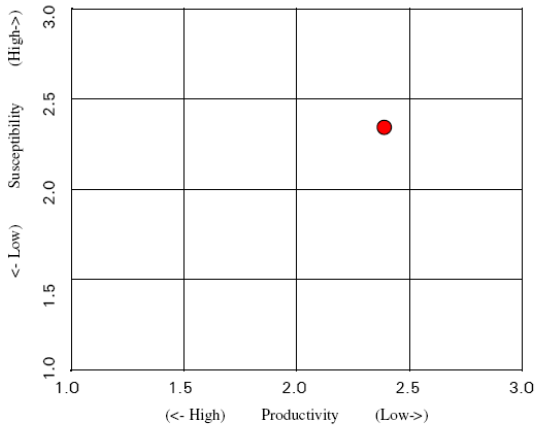
Average Rank: 2.4

Susceptibility Table: Atlantic Blacktip Shark

	Susceptibility Attribute	Rationale for attribute	Rank		
			Low Susceptibility		High Susceptibility
			1	2	3
Species-level attributes	Availability (extent of overlap between the species' habitat and area fished)	Depth range; Habitat types			X
	Catchability	Water column position; Schooling/aggregation behavior; Activity times Morphology - affecting capture			X
	Survival	Survival after capture and release		X	
	Spatial refuge from fishery	Seasonal migrations; Closed areas; Vertical migrations			X
Habitat attributes	Stability of habitat	Time for formation; Disturbance of habitat (mixing scale)			X
	Elevation/size of habitat	Rugosity; Fractal dimension		X	
	Structure of habitat	Ordering dimension; Heterogeneity score; Viscosity; Grain size	X		
Community attributes	Trophic structure	Fishing at level where there are few species is likely to have a greater impact on the measure than fishing where there is a diverse assemblage at the trophic level.		X	
	Fishery specific	Number of trophic levels captured by gear and Fishing method; Number of gear types; Percent of each trophic level subject to fishing		X	

Average Rank: 2.3

PSA Plot



3. Gulf of Mexico Red Snapper

Productivity Table: Gulf of Mexico Red Snapper

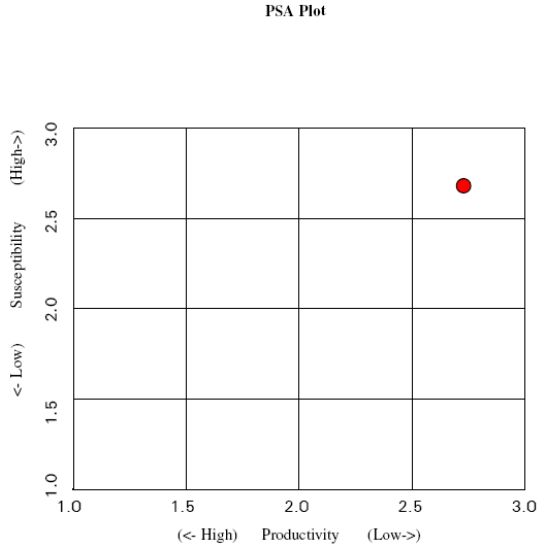
Productivity Attribute		Rationale (examples) for attribute	Rank		
			High Productivity		Low Productivity
			1	2	3
Species-level attributes	Generation Time	Difference between size at birth and maximum; Age at maturity; Size at maturity		X	
	Average maximum age/size				X
	Fecundity	Measured fecundity; Frequency of breeding		X	
	SSB/SSB_0				X
	Reproductive strategy	(r → K)			X
Habitat attributes	Persistence of effect of fishing activity	Recovery time			X
Community attributes	Food web	Mean trophic level (H_0: low, more productive, can also indicates change)			X

Average Rank: 2.71

Susceptibility Table: Gulf of Mexico Red Snapper

Susceptibility Attribute		Rationale for attribute	Rank		
			Low Susceptibility		High Susceptibility
			1	2	3
Species-level attributes	Availability (extent of overlap between the species' habitat and area fished)	Depth range; Habitat types			X
	Catchability	Water column position; Schooling/aggregation behavior; Activity times Morphology - affecting capture			X
	Survival	Survival after capture and release		X	
	Spatial refuge from fishery	Seasonal migrations; Closed areas; Vertical migrations			X
Habitat attributes	Stability of habitat	Time for formation; Disturbance of habitat (mixing scale)		X	
	Elevation/size of habitat	Rugosity; Fractal dimension			X
	Structure of habitat	Ordering dimension; Heterogeneity score; Viscosity; Grain size		X	
Community attributes	Trophic structure	Fishing at level where there are few species is likely to have a greater impact on the measure than fishing where there is a diverse assemblage at the trophic level.			X
	Fishery specific	Number of trophic levels captured by gear and Fishing method; Number of gear types; Percent of each trophic level subject to fishing			X

Average Rank: 2.66



4. Gulf of Alaska Pacific Cod

Productivity Table: Gulf of Alaska Pacific Cod

Productivity Attribute		Rationale (examples) for attribute	Rank		
			High Productivity		Low Productivity
			1	2	3
Species-level attributes	Generation Time	Difference between size at birth and maximum = 110 cm; Age at 50% maturity = 6; 50% maturity at 50.2cm M=.37, significant uncertainty		X	
	Average maximum age/size			X	
	Fecundity	Measured fecundity – 67cm cod produces over 1,000,000 eggs; Frequency of breeding: annual	X		
	SSB/SSB_0			X	
	Reproductive strategy	(r → K)		X	
Habitat attributes	Persistence of effect of fishing activity	Recovery time	X		
Community attributes	Food web	PCOD one of 4 key species in GOA Food Web			X

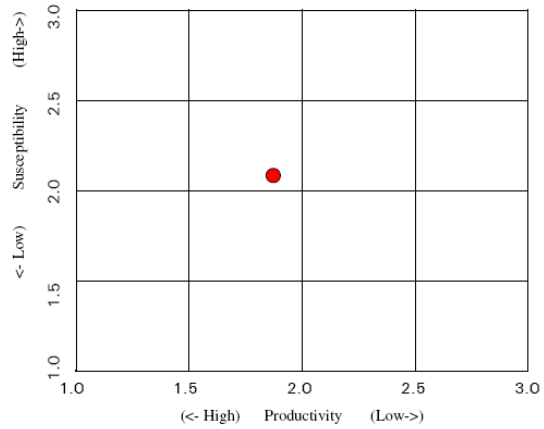
Average Rank: 1.86

Susceptibility Table: Gulf of Alaska Pacific Cod

Susceptibility Attribute		Rationale for attribute	Rank		
			Low Susceptibil		High Susceptibility
			1	2	3
Species-level attributes	Availability (extent of overlap between the species' habitat and area fished)	Depth range; Habitat types			X
	Catchability	PCOD taken with all gear types – trawl, longline, jig and pot In directed fishery as well as bycatch in all other major fisheries Begin to recruit to trawl fisheries at age 3; fully recruited to all gear types by age 7			X
	Survival	Survival after capture and release			X
	Spatial refuge from fishery	Seasonal migrations; Closed areas; Vertical migrations Fishing occurs throughout range – migrate in summer to shallower water where extensive fisheries occur			X
Habitat attributes	Stability of habitat	Time for formation; Disturbance of habitat (mixing scale)	X		
	Elevation/size of habitat	Rugosity; Fractal dimension	X		
	Structure of habitat	Ordering dimension; Heterogeneity score; Viscosity; Grain size	X		
Community attributes	Trophic structure	Fishing at level where there are few species is likely to have a greater impact on the measure than fishing where there is a diverse assemblage at the trophic level.		X	
	Fishery specific	Number of trophic levels captured by gear and Fishing method; Number of gear types; Percent of each trophic level subject to fishing		X	

Average Rank: 2.11

PSA Plot



5. West Coast Rockfish Assemblage (*Sebastes spp.*)

Productivity Table: West Coast Rockfish Assemblage (Sebastes spp.)

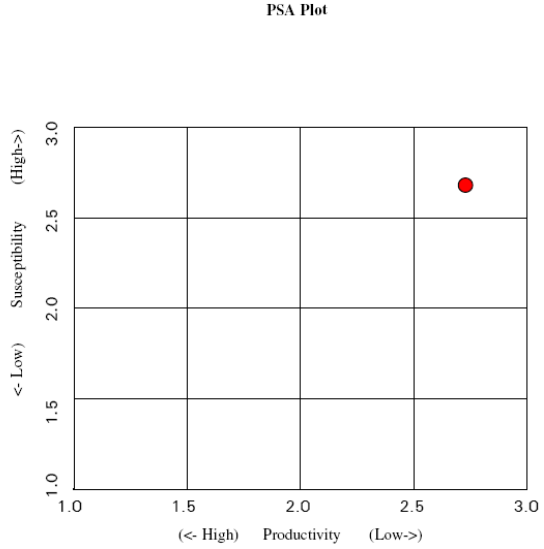
Productivity Attribute		Rationale (examples) for attribute	Rank		
			High Productivity		Low Productivity
			1	2	3
Species-level attributes	Generation Time	Difference between size at birth and maximum; Age at maturity; Size at maturity			X
	Average maximum age/size				X
	Fecundity	Measured fecundity; Frequency of breeding		X	
	SSB/SSB_0			X	
	Reproductive strategy	(r → K)			X
Habitat attributes	Persistence of effect of fishing activity	Recovery time			X
Community attributes	Food web	Mean trophic level (H_0: low, more productive, can also indicates change)			X

Average Rank: 2.71

Susceptibility Table: West Coast Rockfish Assemblage (Sebastes spp.)

Susceptibility Attribute		Rationale for attribute	Rank		
			Low Susceptibility		High Susceptibility
			1	2	3
Species-level attributes	Availability (extent of overlap between the species' habitat and area fished)	Depth range; Habitat types			X
	Catchability	Water column position; Schooling/aggregation behavior; Activity times Morphology - affecting capture			X
	Survival	Survival after capture and release			X
	Spatial refuge from fishery	Seasonal migrations; Closed areas; Vertical migrations			X
Habitat attributes	Stability of habitat	Time for formation; Disturbance of habitat (mixing scale)		X	
	Elevation/size of habitat	Rugosity; Fractal dimension		X	
	Structure of habitat	Ordering dimension; Heterogeneity score; Viscosity; Grain size		X	
Community attributes	Trophic structure	Fishing at level where there are few species is likely to have a greater impact on the measure than fishing where there is a diverse assemblage at the trophic level.		X	
	Fishery specific	Number of trophic levels captured by gear and Fishing method; Number of gear types; Percent of each trophic level subject to fishing			X

Average Rank: 2.66


PSA Plot
Susceptibility
(<- Low)
(High->)
3.0
2.5
2.0
1.5
1.0
1.0
1.5
2.0
2.5
3.0
(<- High)
Productivity
(Low->)

Appendix D – Depletion-Adjusted Average Catch

Alec MacCall, NMFS/SWFSC/FED (draft 9/6/07)

Unlike the classic fishery problem of estimating MSY, data-poor fishery analysis must be content simply to estimate a yield that is likely to be sustainable. While absurdly low yield estimates would have this property, they are of little practical use. Here, the problem is to identify a moderately high yield that is sustainable, while having a low chance that the estimated yield level greatly exceeds MSY and therefore is a dangerous overestimate that could inadvertently cause overfishing and potentially lead to resource depletion before the error can be detected in the course of fishery monitoring and management.

Perhaps the most direct evidence for a sustainable yield would be a prolonged period over which that yield has been taken without indication of a reduction in resource abundance. The estimate of sustainable yield would be nothing more than the long-term average annual catch over that period. However, it is rare that a resource is exploited without some change in underlying abundance. If the resource declines in abundance (which is necessarily the case for newly-developed fisheries), a portion of the associated catch stream is derived from that one-time decline, and does not represent potential future yield supported by sustainable production. If that non-sustainable portion is mistakenly included in the averaging procedure, the average will tend to overestimate the sustainable yield. This error has been frequently made in fishery management.

Based on these concepts, we present a simple method for estimating sustainable catch levels when the data available are little more than a time series of catches. The method needs extensive testing, both on simulated data and on cases where reliable assessments exist for comparison. So far, test cases indicate that it may be a robust calculation.

The Windfall/Sustainable Yield Ratio

The old potential yield formula $Y_{pot} = 0.5*M*B_{unfished}$ (Alverson and Pereyra,1969; Gulland, 1970) is based on combining two approximations: 1) that B_{msy} occurs at $0.5*B_{unfished}$, and 2) that $F_{msy} = M$. In this and the following calculations fishing mortality rate (F) and exploitation rate are treated as roughly equivalent.

However, it is possible to take the potential yield rationale one step farther, and calculate the ratio of the one-time "windfall" harvest (W) due to reducing the abundance from $B_{unfished}$ to the assumed B_{msy} level. After that reduction in biomass has occurred, a tentatively sustainable annual yield Y is given by the potential yield formula. So we have the following simple relationships:

$Y = 0.5*M*B_{unfished}$, and

$W = 0.5*B_{unfished}$.

Under the potential yield assumptions, the ratio of one-time windfall yield to sustainable yield is the windfall/sustainable yield ratio (or simply the "windfall ratio") $W/Y = 1/M$. For example, if $M = 0.1$, the windfall is equal to 10 units of annual sustainable yield.

An Update

The assumptions underlying the potential yield formula are out-of-date, and merit reconsideration. Most stock-recruitment relationships indicate that MSY of fishes occurs somewhat below the level of $0.5*B_{unfished}$. We replace the value of 0.5 with a value of 0.4 as a better approximation of common stock-recruitment relationships.

The F_{msy} = M assumption also requires revision, as fishery experience has shown it tends to be too high, and should be replaced by a F_{msy} = c*M assumption (Deriso, 1982; Walters and Martell, 2004). Walters and Martell suggest that coefficient **c** is commonly around 0.8, but may be 0.6 or less for vulnerable stocks. Figure 1 shows the distribution of **c** values for West Coast groundfish stocks assessed in 2005. The average of **c** for those West Coast species is 0.62, but there is a substantial density of lower values. Because the risk is asymmetrical (ACLs are specifically intended to prevent overfishing), use of the average value is risk-prone. Consequently, we have used a value of c=0.5 in the following calculations.

The yield that is potentially sustainable under these revised assumptions is

$Y = 0.4* B_{unfished} *c*M,$

or for c = 0.5,

$Y = 0.2* B_{unfished} *M.$

The windfall is based on the reduction in abundance from the beginning of the catch time series to the end of the series,

$W = B_{begin} - B_{end} = DELTA*B_{unfished},$

where DELTA is the fractional reduction in biomass from the beginning to the end of the time series, relative to unfished biomass. The analogous case to the potential yield formula is $B_{begin} = B_{unfished}$, and $B_{end} = 0.4*B_{unfished}$, in which case DELTA = 0.6. In practice, B_{begin} is rarely $B_{unfished}$, and DELTA is unlikely to be known explicitly. Although data may be insufficient for use of conventional stock assessment methods, an estimate (or range) of DELTA based on expert opinion is sufficient for this calculation. The windfall ratio is now

$W/Y = DELTA/(0.4*c*M),$

or in the case of c=0.5,

$W/Y = DELTA/(0.2*M).$

For example, in the case of fishing down from $B_{unfished}$ to near B_{msy} where DELTA=0.6, if c = 0.5, W/Y = 3/M. Thus the revised calculation gives a much larger estimate of the windfall ratio. For the previous example of M = 0.1, the windfall ratio is now estimated at 30 units of sustainable annual yield.

A Sustainable Yield Calculation

Assume that in addition to the windfall associated with reduction in stock size, each year produces one unit of annual sustainable yield. The cumulative number of annual sustainable yield units harvested from the beginning to the end of the time series is n + W/Y, where n is the length of the series. In this calculation it should not matter when the reduction in abundance actually occurs in the time series because assumed production is not a function of biomass. Of course, in view of the probable domed shape of the true production curve, the temporal pattern of exploitation may influence the approximation.

The estimate of annual sustainable yield (Y_{sust}) is

$Y_{sust} = sum(C)/(n + W/Y).$

In the special case of no change in biomass, DELTA = 0, W/Y = 0, and Y_{sust} is the historical average catch. If abundance increases, DELTA is negative, W/Y is negative, and Y_{sust} will be

larger than the historical average catch.

Examples

The widow rockfish fishery began harvesting a nearly unexploited stock in 1981 and for the first three years, fishing was nearly unrestricted (Table 1). Reliable estimates of sustainable yield based on conventional stock assessments were not available for many years afterward. By the mid-1990s, stock assessments were producing estimates of sustainable yield ca. 5000 mtons, with indications that abundance had fallen to 20-33% of $B_{unfished}$.

Application of depletion-corrected catch averaging indicates good performance of the method within a few years of the beginning of the fishery. Two alternative calculations are given in Table 1. The first calculation assumes M = 0.15, c = 0.5, and that biomass was near B_{msy} at the end of the time period, so that DELTA = 0.6. The second calculation is closer to the most recent stock assessment (He et al., 2007) and assumes M = 0.125, c = 0.5, DELTA = 0.75 (ending biomass in year 2000 is about 25% of $B_{unfished}$).

Other examples would be worth exploring, especially were they can be compared with "ground truth" from a corresponding formal stock assessment.

Low biomasses

The yields given by these calculations can only be sustained if the biomass is at or above B_{msy}. If the resource has fallen below B_{msy}, the currently sustainable yield ($Y_{current}$) is necessarily smaller. A possible approximation would be based on the ratio of $B_{current}$ to B_{msy},

$Y_{current} = Y_{sust}*(B_{current}/B_{msy})$ if $B_{current}<B_{msy}$

Implementation

This method is most useful for species with low natural mortality rates; stocks with low mortality rates tend to pose the most serious difficulties in rebuilding from an overfished condition. As natural mortality rate increases (M > 0.2), the windfall ratio becomes relatively small, and the depletion correction has little effect on the calculation.

The relationship between F_{msy} and M may vary among taxonomic groups of fishes, and among geographic regions, and would be a good candidate for meta-analysis. Uncertainty in parameter values can be represented by probability distributions. A Monte Carlo sampling system such as WinBUGS can easily estimate the output probability distribution resulting from specified distributions of the inputs.

With minor modifications, this method could also be applied to marine mammal populations. Although estimation of sustainable yields is not a central issue for marine mammals nowadays, the method would be especially well suited to analysis of historical whaling data, for example.

References

Alverson, D., and W. Pereyra. 1969. Demersal fish explorations in the northeastern Pacific Ocean – an evaluation of exploratory fishing methods and analytical approaches to stock size and yield forecasts. J. Fish Res. Board Can. 26:1985-2001.

Deriso, R. 1982. Relationship of fishing mortality to natural mortality and growth at the level of maximum sustainable yield. Can. J. Fish. Aquat. Sci. 39:1054-1-58.

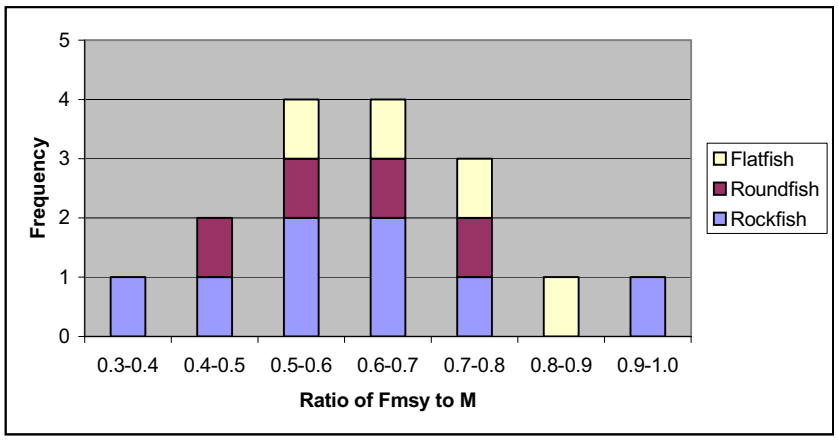
Gulland, J. 1970. Preface. In: J. Gulland (ed.) The fish resources of the oceans. FAO Fish. Tech. Pap. 97, p.1-4.

He, X., D, Pearson, E. Dick, J. Field, S. Ralston, and A. MacCall. 2007. Status of the widow rockfish resource in 2007, an update. Pacific Fishery Management Council, Portland OR.

Walters, C., and S. Martell. 2004. Fisheries ecology and management. Princeton University Press. 399 p.

TABLE 1. Widow rockfish example of depletion-adjusted average catch, as if calculations were done in each year. Bold values indicate years when stock might have been assumed to be near B_{msy}. All calculations assume $B_{begin} = B_{unfished}$, and $B_{end} = 0.4*B_{unfished}$. Assumed natural mortality rate is 0.15, but is now thought to be lower. Widow rockfish was declared overfished in 2000.

	annual	cumulative	cumulative	estimated
year	catch	catch	production	ABC(=MSY)
	1000 mtons		MSY units	1000 mtons
1981	22	22	21	1.0
1982	27	49	22	2.2
1983	26	75	23	3.2
1984	10	85	24	3.5
1985	10	95	25	3.8
1986	9	104	26	**4.0**
1987	13	117	27	**4.3**
1988	10	127	28	**4.5**
1989	12	139	29	**4.8**
1990	10	149	30	**5.0**
1991	6	155	31	**5.0**
1992	6	161	32	**5.0**
1993	8	169	33	**5.1**
1994	6	175	34	**5.1**
1995	7	182	35	**5.2**
1996	6	188	36	5.2
1997	7	195	37	5.3
1998	4	199	38	5.2
1999	4	203	39	5.2
2000	4	207	40	5.2



1. Distribution of ratios of F_{msy} to M for West Coast Groundfish species assessed in 2005. "Rockfish" is genus *Sebastes*. "Roundfish" represents remaining non-flatfish species.

Appendix E – A Probability-Based Approach to Setting Annual Catch Levels

A Probability-Based Approach to Setting Annual Catch Levels

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Authors' note: The manuscript on which this appendix is based will be submitted to Fishery Bulletin*. We have prepared this appendix under the American Fisheries Society's guidelines for extended abstracts, to avoid any question of duplicate publication.*

Recent reauthorization of the Magnuson–Stevens Fishery Conservation and Management Act requires each FMP to "establish a mechanism for specifying annual catch limits … at a level such that overfishing does not occur in the fishery …" Because this requirement is new, scientific practice for setting ACLs is not yet established.

We propose an approach that keeps the annual probability of overfishing P^* below some preset level (e.g., 0.1), presumably meeting the requirement to avoid overfishing. This probability-based approach to setting catch limits, which we call PASCL, is an extension of the REPAST algorithm (Prager et al. 2003) for setting fishing targets. That paper in turn extended the work of Caddy and McGarvey (1996) on targets and limits. When used for setting ACLs, PASCL can accommodate uncertainty in many areas, e.g., in estimated stock status, in the estimated limit reference point F_{lim} (typically F_{MSY} or a proxy), in future stock dynamics (whether due to single-species or ecosystem effects), and in implementation of management measures.

In PASCL, uncertainty in stock dynamics is represented by a stochastic projection model. This approach allows setting ACLs for more than one year and facilitates including uncertainty, as mentioned above. Modeling non-equilibrium population dynamics, as here, is critical in developing harvest strategies (Hauser et al., 2006).

Stock assessment results generally include estimates of uncertainty. A key result used in PASCL is the estimate of F_{lim}, the limit reference point in fishing mortality rate, and its associated uncertainty, described by a probability density function (PDF), either parametric or nonparametric. If a PDF on F_{lim} is unavailable, PASCL can use a point estimate, but ignoring that source of uncertainty can make overfishing more likely (Prager et al., 2003). Another basic assessment result, the estimate of stock status with its corresponding uncertainty, is used to initialize stock replicates in PASCL's stochastic projection.

In PASCL, the level of risk deemed acceptable by managers is quantified as P^*, where *risk* is defined as the probability of overfishing in year t [i.e., $\Pr(F_t > F_{\text{lim}})$]. A smaller P^* corresponds to more risk-averse management. Always, $P^* < 0.5$ should hold, since $P^* = 0.5$ equates limit and target, with overfishing expected in half of all years. When P^* is defined as a constant probability, as here, the risk of overfishing in at least one of T years grows with the time horizon (T) as $1-(1-P^*)^T$.

In a simpler formulation, F_{lim} would be represented by a point estimate. In that case, the probability of overfishing in year t would be a function of F_{lim} and the probability density function (ϕ_{F_t}) of F_t:

$$\Pr(F_t > F_{\text{lim}}) = \int_{F_{\text{lim}}}^{\infty} \phi_{F_t}(F)\,dF = 1 - \Psi_{F_t}(F_{\text{lim}}) \qquad (1)$$

where $\Psi_{F_t}(F_{\text{lim}})$ is the cumulative distribution of F_t evaluated at F_{lim}. The distribution of F_t can be shifted so that the desired risk is achieved; i.e., so that $\Pr(F_t > F_{\text{lim}}) = P^*$.

The formulation used here is slightly more complex (and realistic) in that F_{lim} is described by its PDF, $\phi_{F_{\text{lim}}}$. In this case, the probability of overfishing is computed

$$\Pr(F_t > F_{\text{lim}}) = \int_0^{\infty} \left[1 - \Psi_{F_t}(F)\right] \phi_{F_{\text{lim}}}(F) dF \qquad (2)$$

which is the weighted sum of probabilities computed by Equation (1) for all possible values of F_{lim}. Again, the distribution of F_t can be shifted so that $\Pr(F_t > F_{\text{lim}}) = P^*$.

The goal of PASCL is to set an ACL such that $\Pr(F_t > F_{\text{lim}}) = P^*$ in each year of a multiyear sequence. The extensions from the formulation just described (Equations (1) and (2)) are the use of output controls (catches) for management and time frame of several years. The goal is achieved through a projection model (Fig. 1) and the following steps:

1. Initialize N replicates of the stock, each slightly different in size and structure to reflect uncertainty in estimated current stock abundance.
2. In the presence of implementation uncertainty in management, an ACL is the central tendency X of a distribution. Choose a trial value of X, and draw N values $\{C_1 \ldots C_N\}$ from the distribution to be the catches taken from the N stock replicates.
3. Compute, for each replicate, the fishing mortality rate that yields C_n. This produces N values of F_t to define its empirical probability density (ϕ_{F_t}).
4. Given ϕ_{F_t} and $\phi_{F_{\text{lim}}}$, compute $P = \Pr(F_t > F_{\text{lim}})$ from Equation (2).
5. Using an optimization algorithm, adjust X until $P = P^*$. The adjusted X is that year's ACL.
6. Project each replicate one year forward by applying recruitment and natural mortality and taking catch C_n.
7. Repeat steps 2–6 for T years.

The duration T of the projection period in general will extend until ACLs based on the next assessment can be implemented. The enumerated procedure gives an ACL for each year in the period, and in each year the probability of overfishing is kept to P^*.

The PASCL algorithm is quite flexible. It can be based on age-structured or age-aggregated projections, which can incorporate any source of uncertainty needed, including variability in life-history parameters, environmental influences, and multispecies effects. Rather than requiring data or results beyond those standard in stock assessments, PASCL reframes standard projection methods for use in setting ACLs.

This algorithm is not the only possible approach to setting ACLs. In particular, data-poor stocks will likely require a different approach, such as assemblage management.

A notable feature of PASCL is that managers choose the level of risk they consider acceptable. This choice can reflect socio-economic considerations in addition to biology. In some cases, higher risk of overfishing may be desired (e.g., if short term pain of reduced fishing effort outweighs long term benefits to yield (Shertzer and Prager, 2007)). In other cases, managers

may be more precautionary. In either case, establishing the level of risk as an explicit choice increases transparency in the management process.

References

Caddy, J. F., and R. McGarvey. 1996. Targets or limits for management of fisheries?North American Journal of Fisheries Management 16: 479–487.

Hauser, C. E., E. G. Cooch, J. D. Lebreton. 2006. Control of structured populations by harvest. Ecological Modelling 196: 462–470.

Johnson, F. A., C. T. Moore, W. L. Kendall, J. A. Dubovsky, D. F. Caithamer, J. R. Kelley Jr., B. K. Williams. 1997. Uncertainty and the management of mallard harvests.

Journal of Wildlife Management 61: 202–216.

Prager, M. H., C. E. Porch, K. W. Shertzer, and J. F. Caddy. 2003. Targets and limits for management of fisheries: a simple probability-based approach. North American Journal of Fishery Management 23: 349–361.

Shertzer, K. W., and M. H. Prager. 2007. Delay in fishery management: diminished yield, longer rebuilding, and increased probability of stock collapse. ICES Journal of Marine Science 64: 149–159.

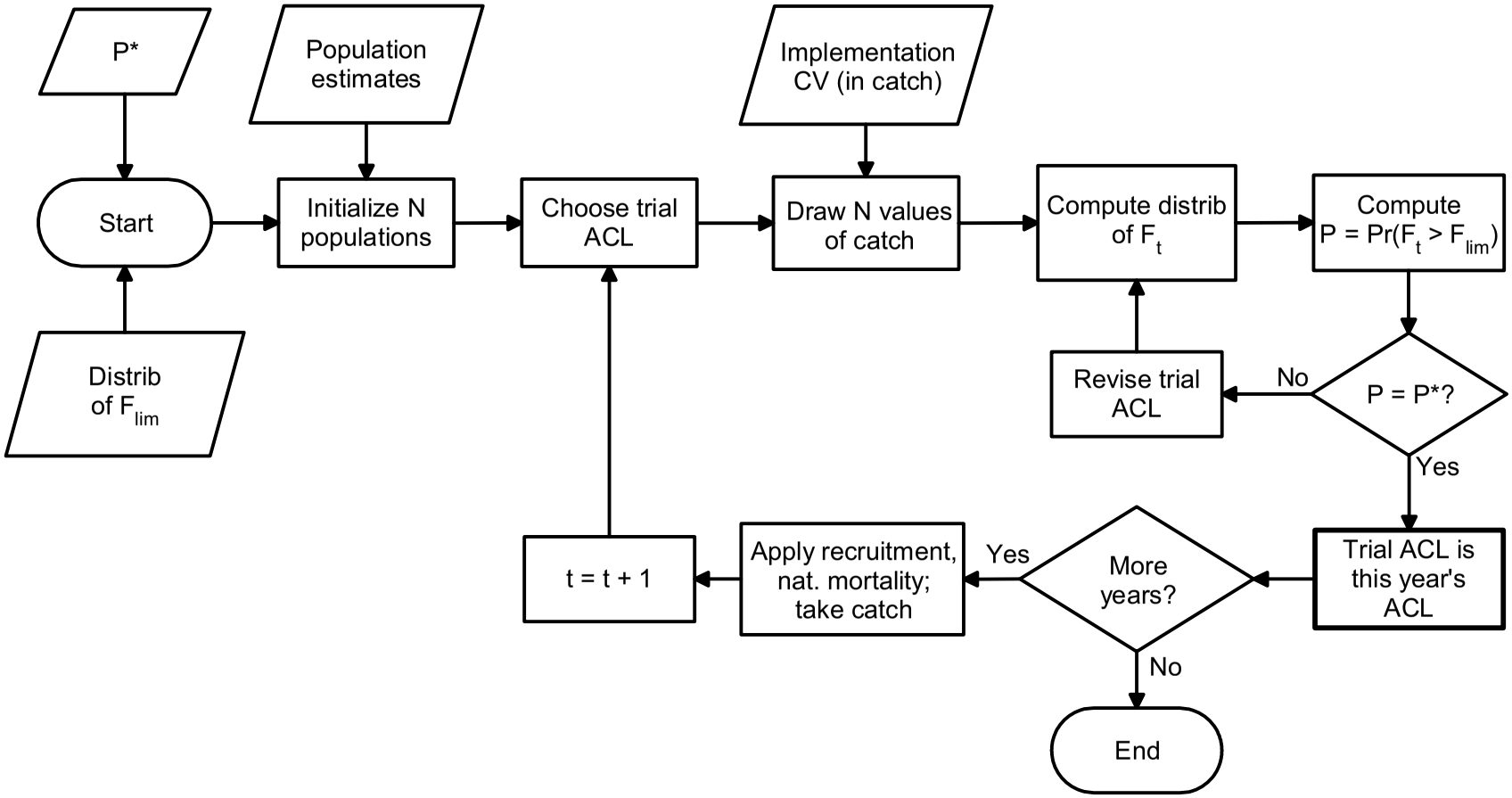

Figure 1. Algorithm for computing ACLs by PASCL method. Input quantities shown as parallelograms.

Appendix F – NMFS Staff in Attendance

NMFS staff were invited to attend the workshop and provide technical expertise to the workgroup. The following staff were in attendance.

Alec MacCall	NOAA Fisheries, Southwest Fisheries Science Center, Fisheries Ecologies Division
John McGovern	NOAA Fisheries, Southeast Region, Gulf Operations Branch
Richard Methot	NOAA Fisheries, Assessment and Monitoring Division
Mark Millikin	NOAA Fisheries Headquarters, Domestic Fisheries Division
Steve Murawski	NOAA Fisheries Service, Director of Scientific Programs and Chief Science Advisor
Michael Prager	NOAA Southeast Fisheries Science Center
Paul Rago	NOAA Fisheries, Northeast Fisheries Science Center
Fred Serchuck	NOAA Fisheries, Northeast Fisheries Science Center
Phil Steele	NOAA Fisheries, Southeast Region, Sustainable Fisheries Division
Galen Tromble	NOAA Fisheries Headquarters, Domestic Fisheries Division Chief

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PETER H. FLOURNOY

Mr. Donald O. McIsaac
Executive Director
Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101
Portland , OR 97220-1384

Re: Agenda Item C.3 and C.3.d Magnuson-Stevens Act Reauthorization Implementation:

Dear Don:

Since I am neither a Council member, nor do I work for NMFS, I thought this might be an appropriate way to report to the Council on the international fisheries management questions I raised as a panel member on that subject at the work shop entitled Magnuson-Stevens Reauthorization Act: Working Together on Implementation.

First, I raised the issues surrounding the Act's amendments requiring Councils, in their FMPs for managed species, to set Annual Catch Limits (TCL). Sections 302(h)(6) and 303(a)(15). I pointed out that this poses particular problems for fisheries, such as that for yellowfin tuna in the Eastern Pacific, which while falling under the management cover of the IATTC, was not regulated and conserved by a TCL or a TAC, but rather by time and area closures. The representatives from NOAA-NMFS recognized the problem but did not have an immediate answer. However, representatives from NOAA-NMFS did acknowledge that if the RFMO had set a TCL or a TAC, the Council should follow the RFMO's lead in setting a TCL. I also questioned how this would interface with, e.g., the Tuna Conventions Act enabling the IATTC, which contains language indicating that no international fisheries restrictions, which are then formulated as regulations for U.S. vessels, shall operate unless the same constraints are applied equally by other nations to their fleets.

Second, under the amendment adding section 304(I), which focuses on the Council's obligations when a fishery is declared to be overfished, or approaching a state of overfishing, and the fishery is subject to an international agreement to which the U.S. is a party, I raised

two questions. With regard to the provision that indicates if the international organization has no conservation or rebuilding plan, section 304(I) applies, I raised the question of who makes this determination, and questioned whether the section would apply if the RFMO had a program but it was ineffective, i.e. is an ineffective measure equal to no measure, and who determines this under the statute? We have already had one such determination as to yellowfin under the IATTC, however, I don't believe that should necessarily settle the question. I also raised the question of what section applied – 304(I) or 304(e) if the RFMO did have an effective conservation program? Finally, I pointed out that Section 304(i)(2)(A) which requires the Council to recommend domestic regulations which take into account the impact of U.S. vessels on the stock, makes no sense in its application to a U.S. fleet competing in an international fishery where the U.S. fleet is catching only 10% or 20% of the fishery. In my power point presentation which should be available on the website (msra.webexone.com) I gave a hypothetical example how foolish this would be, handicapping the U.S. fleet while doing nothing to accomplish the conservation goals.

My last comment concerns Item C.3.d Public Comment entitled "Setting Annual Catch Limits for U.S. Fisheries: An Expert Working Group Report." I would like to point out that this was done under the auspices and participated in by MRAG which is a British based organization which does most of the work for the MSC certifications you my have heard about. It therefore should be carefully examined and not just accepted without a critical reading. By the way, it answers none of the questions raised above concerning ACLs and their application to international fisheries.

Sincerely,

Peter H. Flournoy

Agenda Item C.4
Situation Summary
November 2007

FISCAL MATTERS

The Council's Budget Committee meets on Sunday, November 4, 2007, at 4:00 P.M. to consider budget issues as outlined in Ancillary C, Budget Committee Agenda.

The Budget Committee's report will be provided to the Council for review and approval on Friday, November 9.

Council Action:

Consider the report and recommendations of the Budget Committee.

Reference Materials:

1. Agenda Item C.4.b, Supplemental Budget Committee Report.

Agenda Order:

a. Agenda Item Overview — John Coon
b. Budget Committee Report — Jerry Mallet
c. Reports and Comments of Advisory Bodies
d. Public Comment
e. **Council Action:** Consider the Report and Recommendations of the Budget Committee

PFMC
10/15/07

REPORT OF THE BUDGET COMMITTEE

The Budget Committee (BC) met on Sunday, November 4, 2007 and received the Executive Director's Budget Report. The report included (1) the current status of funding and expenditures for calendar year (CY) 2007 base activities and the groundfish trawl rationalization and intersector allocation (TR/IA) budgets, and (2) potential funding scenarios and priorities for 2008 and a provisional CY 2008 operating budget. The following BC members were present:

Mr. Jerry Mallet, Chairman
Mr. Donald K. Hansen
Mr. Mark Helvey/Mr. Frank Lockhart
Mr. Frank Warrens

Absent: Mr. Phil Anderson (Ms. Michele Culver in attendance)
Dr. Dave Hanson

Current Status of Funding and Expenditures

CY 2007 Base Activities

Dr. McIsaac reviewed the receipt of funding to support base Council activities for CY 2007. Since the previous BC Report in September, the Council has received the expected, additional $200,000. This amount completes the National Marine Fisheries Service (NMFS) commitment to provide total CY funding to replicate the Council's 2006 base operational capabilities (about $3.3 M). No other funds are expected to be received.

A review of the CY 2007 base budget ($3,271,454) and expenditures through September 30 and a projection of expected expenditures through year end, estimates a likely positive balance of around $56,000. Any final realized balance will be carried over to protect Council base activities in CY 2008.

Groundfish Trawl Rationalization and Intersector Allocation Activities

Dr. McIsaac reviewed the groundfish TR/IA budget and expenditures through September 30 and reported a likely year end positive balance of about $36,000. Any final realized balance will be carried over to fund ongoing TR/IA activities in 2008.

Potential Funding Scenarios and CY Provisional Operating Budget for 2008

For federal fiscal year (FY) 2008, Dr. McIsaac reported that the funding mark for the Regional Councils is the same in the budget proposals of the President and both Houses of Congress--$17.998 M. There is also a possibility that Congress could fund FY 2008 via a continuing resolution at FY 2007 levels. On that basis, the Regional Council line item would be $15 M. Based on this range of funding for 2008 and the TR/IA funds already on hand, Dr. McIsaac provided the BC with some potential funding and budget scenarios for the Council's total operating budget.

One of these scenarios identified a Minimum Full Staffing Benchmark of about $3.7 M which Dr. McIsaac proposed as the Total Provisional Operating Budget for CY 2008. He stated the probability of the Council receiving at least the Minimum Full Staffing Benchmark is high. In addition, he

identified budget priorities for funding scenarios at levels above and below this full staffing level and asked the BC to consider adopting this as guidance for 2008.

Budget Committee Recommendations

Based on the information provided by Dr. McIsaac in his display of funding scenarios and priorities, the BC recommends the Council adopt the following provisional budget and priorities to guide budget development and programmatic activities for CY 2008.

1. Adopt the CY 2008 Minimum Full Staffing Benchmark as the Total CY 2008 Provisional Operating Budget, which is currently estimated to be $3,726,419. This budget is provisional, pending final cost-of-living figures, per diem, and base funding levels other than $3.7 M as described in #2 and #3 below. The provisional budget will support Council operating capability at the current staffing level and allow for most base program operations as well as the TR/IA programs to proceed on schedule. Base program limitations at this budget level would include:
   a) Delayed Council staff involvement in Open Access Limited Entry efforts and the High Seas Shallow-Set Longline Amendment;
   b) No Council staff involvement in consideration of Pacific whiting bycatch adjustments for 2008 that require an Environmental Assessment (EA); and
   c) Minimizing groundfish inseason management.

2. In the event funding exceeds the Minimum Full Staffing Benchmark ($3.7 M), the BC recommends:
   a) Up to a level of $4.2 M—resume, to the extent practicable with no staffing changes, the projects identified as delayed in #1a and #1c above (this would require the use of outside contractors) and carryover the balance to protect Council operating capacity in CY 2009 when funding certainty could be more problematic than 2008;
   b) Between $4.2 M and $4.6 M—consider initiating ecosystem fishery management plan development, with further consideration of the proposed budget for this endeavor at the March 2008 Council meeting; and
   c) Greater than $4.6 M—Convene a March BC meeting to consider potential actions.

3. In the unlikely event funding falls short of the Minimum Full Staffing Benchmark ($3.7 M), the BC recommends:
   a) Down to a level of $3.5 M—Transfer the bulk of environmental impact statement or EA development and analysis for the groundfish biennial specifications and management measures to NMFS while shifting the costs and efforts of all associated Council staff to the TR/IA projects; and
   b) Less than $3.5 M--Convene a March or earlier emergency BC meeting to consider potential actions.

PFMC
11/9/07

MEMBERSHIP APPOINTMENTS AND COUNCIL OPERATING PROCEDURES (COP)

During this agenda item, the Council will consider changes in Council officers, advisory body membership, appointments to other forums, and changes in COP.

Selection of Council Chair and Vice Chair for 2008

As directed by COP 1, the Council will need to select a chair and vice chair for a one-year term beginning January 1, 2008. For the 2006 and 2007 terms, with the agreement of all Council members, the Council suspended the restriction on page 10 of COP 1, limiting any officer from serving more than two consecutive one-year terms in the same position (Closed Session A.1.a, Attachment 1). On that basis, Chair Donald Hansen and Vice Chair David Ortmann will have each served four consecutive terms in their respective positions at the end of 2007.

Given the Council's action in selecting officers the past two years, the Council may wish to consider amending COP 1 to incorporate some prescribed ability to deviate from a one-year term if it serves the best interests of the Council. Additionally, if a change is considered, there may be some benefit to considering an August 11 to August 10 term that coincides with Council member appointments. This would avoid any uncertainty as to tenure if the Council desires to select a Council member to hold office in the final year of their first or second term.

Council Advisory Body Appointments

Coastal Pelagic Species Management Team (CPSMT)

Washington Department of Fish and Wildlife (WDFW) nominates Ms. Carol Henry to replace Mr. Brian Culver as the WDFW representative on the CPSMT (Closed Session A.1.a, Attachment 2).

Groundfish Management Team (GMT)

Council staff has received two requests for changes on the GMT.

National Marine Fisheries Service (NMFS) NW Region nominates Ms. Gretchen Arentzen to replace Ms. Becky Renko as one of the two NW Region representatives on the GMT (Closed Session A.1.a, Attachment 3).

The WDFW nominates Mr. Corey Niles to replace Mr. Brian Culver as one of two WDFW representatives on the GMT (Closed Session A.1.a, Attachment 4).

Highly Migratory Species Advisory Subpanel (HMSAS)

Mr. Jay Bornstein has confirmed that Ms. Gayle Parker is unable to continue as the Processor North of Cape Mendocino on the HMSAS at this time. In response to our solicitation to fill this vacancy, Mr. Pierre Marchand has nominated himself to serve in this position for the remainder of the 2007-2009 term (Closed Session A.1.a, Attachment 5).

Scientific and Statistical Committee (SSC)

In response to our solicitation, the Council received four nominations for the one at-large vacancy on the SSC. The letters of nomination and support, and the candidates' CVs are provided in Closed Session A.1.a, Attachment 6. The nominees are:

- Mr. Vidar Wespestad, Ph.D., Fisheries Consultant and Adjunct Professor, University of Alaska—nominated by Mr. Brad Pettinger and letters of support from Mr. Richard Carroll and Mr. Mike Okoniewski
- Ms. Selina Heppell, Ph.D., Associate Professor, Oregon State University, Department of Fisheries and Wildlife—nominated by Dr. Usha Varanasi
- Mr. Daniel Pondella, Ph.D., Assistant Professor of Biology, Occidental College—nominated by self
- Mr. William Daspit—nominated by self

In September 2006, the SSC requested the Council give consideration to adding two additional at-large seats to the SSC to help cover the breadth and depth of their current workload. Given the positive response to this solicitation, the Council may wish to consider augmenting the SSC membership.

Proposed New Ad Hoc Trawl Rationalization Tracking and Monitoring Committee

To help develop options and provide advice to NMFS on the tracking and monitoring requirements necessary under the trawl rationalization process, the Council Staff recommends formation of an Ad Hoc Trawl Rationalization Tracking and Monitoring Committee. With advice from Council and advisory body members, the Council Chair would name appropriate members to serve on the ad hoc committee.

Remaining Vacancies on Permanent Council Advisory Bodies

The following advisory body positions are vacant with no nominations:

• GMT	NMFS NW Region, 2nd Position
• Habitat Committee	IDFG Position
• Highly Migratory Management Team (HMSMT)	IATTC Position

Appointments to Other Forums

Western and Central Pacific Fisheries Commission (WCPFC) Advisory Body

Closed Session A.1.a, Attachment 7 provides the Council's nomination of Dr. Kit Dahl to a position on the WCPFC advisory body representing our Council in highly migratory species matters.

U.S.-Canada Pacific Hake/Whiting Commission

As noted at the September Council meeting, the Secretary of Commerce has acknowledged our Council's recommendation for Mr. Phil Anderson to serve on the U.S. Section of the Joint

Management Committee of the U.S.-Canada Pacific Hake/Whiting Commission. However, any notice of appointment awaits final ratification of the treaty which is expected sometime in November or early December.

Changes to COP

As noted above, the Council may wish to initiate consideration of changes to COP 1 with regard to selection of Council officers and COP 4, SSC, with regard to SSC membership (consideration of additional members).

Changes to COP 4, SSC, are also considered under Agenda Item C.3 and primarily respond to requirements in the Magnuson-Steven Act reauthorization and increasing the terms of SSC officers from one to two years (page 5 of Agenda Item C.3.a, Attachment 2). Under the same agenda item, changes are proposed with regard to the research and data needs development schedule in COP 12. These changes primarily concern the planning horizon of the research needs document.

Changes are also proposed in Agenda Item F.2 for COP 15, Salmon Estimation Methodology Updates and Review, to clarify review roles of the SSC, Salmon Technical Team, and Model Evaluation Workgroup.

Council Tasks:

1. **Confirm appointments or provide guidance for handling appointments of Council Officers and Members of the CPSMT, GMT, HC, HMSAS, HMSMT, SSC and Ad Hoc Committees.**
2. **Provide other guidance as appropriate for appointment or COP issues.**

Reference Materials:

1. Closed Session A.1.a, Attachment 1: Excerpt from COP 1.
2. Closed Session A.1a, Attachment 2: WDFW Resignation and Nomination to CPSMT.
3. Closed Session A.1a, Attachment 3: NMFS Resignation and Nomination to GMT.
4. Closed Session A.1.a, Attachment 4: WDFW Resignation and Nomination to GMT.
5. Closed Session A.1.a, Attachment 5: Resignation and Nomination for HMSAS Position for Processor North of Cape Mendocino.
6. Closed Session A.1.a, Attachment 6: Four Nominations and Supporting Materials for the SSC At-Large Vacancy.
7. Closed Session A.1.a, Attachment 7: Nomination of Dr. Kit Dahl to the WCPFC Advisory Body.
8. Agenda Item C.3.a, Attachment 1: Second Draft of Revisions to COP 4, SSC.
9. Agenda Item C.3.a, Attachment 2: Draft Revisions to COP 12, Update and Communication of Research and Data Needs and West Coast Economic Data Plan.
10. Agenda Item F.2.a, Attachment 2: COP 15, Salmon Estimation Methodology Updates and Review.

Agenda Order:

a. Agenda Item Overview — John Coon
b. Reports and Comments of Advisory Bodies — Bob Conrad
c. Public Comment
d. **Council Action:** Appoint Council Officers and Appropriate Advisory Body Members, and Consider Changes to COPs as Needed

PFMC
10/22/07

FUTURE COUNCIL MEETING AGENDA PLANNING AND WORKLOAD PRIORITIES

The purpose of this agenda item is to refine planning on the following three matters:

1. The Council three-meeting outlook (March, April, and June, 2008).
2. The draft agenda for the March 2008 Council meeting in Sacramento, California.
3. Council staff workload priorities for November 10, 2007 through April 11, 2008. (Workload priorities are set through the April meeting due to the very short period between the March and April meetings.)

The Council preliminarily reviews items 1 and 2 (above) under Agenda Item C.1 on Monday. With the inclusion of any input gathered from that review or other Council actions during the week, the Executive Director will review supplemental proposed drafts of the three items listed above and discuss any other matters relevant to the Council meeting agendas and workload. After considering any reports and comments from advisory bodies and the public, the Council is scheduled to provide appropriate guidance for future agenda development and also has the opportunity to identify priorities for advisory body consideration for the March 2008 Council meeting.

Council Tasks:

1. **Provide guidance on potential agenda topics for the next three Council meetings.**
2. **Provide guidance on the draft agenda for the March 2008 Council meeting.**
3. **Provide guidance on priorities for Council workload management between the November and April Council meetings.**
4. **Identify priorities for advisory body consideration at the next Council meeting.**

Reference Materials:

1. Agenda Item C.6.a, Supplemental Attachment 1: Proposed Preliminary Three-Meeting Outlook for the Pacific Council.
2. Agenda Item C.6.a, Supplemental Attachment 2: Preliminary Draft Council Meeting Agenda, March 10-14, Sacramento California.
3. Agenda Item C.6.a, Supplemental Attachment 3: Council Workload Priorities November 10, 2007 through April 11, 2008.

Agenda Order:

a. Agenda Item Overview — Don McIsaac
b. Reports and Comments of Advisory Bodies
c. Public Comment
d. Council Guidance on Three Meeting Outlook, March 2008 Council Meeting Agenda, Council Staff Workload, and Priorities for Advisory Body Consideration

PFMC
10/18/07

Preliminary Three Meeting Outlook for the Pacific Council

(Contingent Items are Shaded and Counted in Time Estimate)

March Sacramento, CA (3/10-14/2008) Estimated Percent of Standard Floor Time = 144%	April Seattle, WA (4/6-11/2008) Estimated Percent of Standard Floor Time = 131%	June Foster City, CA (6/8-13/2008) Estimated Percent of Standard Floor Time = 145%
Administrative	**Administrative**	**Administrative**
Closed Session; Open Session Call to Order; Min.	Closed Session; Open Session Call to Order; Min.	Closed Session; Open Session Call to Order; Min.
Legislative Committee Report	Legislative Committee Report	Legislative Committee Report
		Fiscal Matters
Interim Appt. to Advisory Bodies	Interim Appointments to Advisory Bodies	Interim Appointments to Advisory Bodies (& EFH)
MSA Reauthorization Implementation	MSA Reauthorization Implementation	MSA Reauthorization Implementation
3 Mtg Outlook, Apr Agenda, Workload (2 sessions)	3 Mtg Outlook, Drft Nov Agenda, Workload (2 sessions)	3 Mtg Outlook, Drft Mar Agenda, Workload (2 sessions)
Public Comment on Non-Agenda Items	Public Comment on Non-Agenda Items	Public Comment on Non-Agenda Items
		Research & Data Needs: Adopt for Pub Rev
Coastal Pelagic Species	**Coastal Pelagic Species**	**Coastal Pelagic Species**
		Pac. Mackerel Harvest Guideline 2008-2009: Adopt Final
		Amendment 11: Review Sardine Allocation
Ecosystem FMP	**Ecosystem FMP**	**Ecosystem FMP**
Enforcement Issues	**Enforcement Issues**	**Enforcement Issues**
	US Coast Guard Annual Fishery Enforcement Report	
Groundfish	**Groundfish**	**Groundfish**
NMFS Report	NMFS Report	NMFS Report
2007 Inseason Mgmt (2 Sessions)	2007 Inseason Management (2 Sessions)	2007 Inseason Management (2 Sessions)
Trawl Rationalization: Placeholder to Clarify Alts if Nec.	Trawl Rationalization Analytical Results Briefing	Trawl Rationalization: Preliminary DEIS--Adopt Pref. Alt.
	Intersector Allocation: Adopt Final Preferred Alt	
Stock Assessment Planning for 2011-2012 Seasons	Stock Assessments: Adopt Final TOR, List of Stocks to be Assessed, & Review Schedule	
Pac. Whiting: Adopt Final 2008 Spx & Mgmt Measures, including periodic bycatch limits		EFH 5 year Review: Appt. Review Committee & Screen Issues for Review
	2009-2010 Mgmt Recommendations: Adopt	2009-2010 Mgmt Recommendations: Adopt
Open Access Limitation: Adopt Alts. for Public Review	1) Preferred ABCs & OYs, & Prelim Revised RB Plns	1) Tentative Final Spx, RB Plans, & Mgmt Measures
	2) Range of Refined Mgmt Meas. for Pub Rev, & if possible, a Preferred Alt. (Parts I & II)	2) Clarification to Tentative Adoption if Nec
		3) Final
		EFPs for 2009: Preliminary Rev & Comment
Habitat Issues	**Habitat Issues**	**Habitat Issues**
Habitat Committee Report	Habitat Committee Report	Habitat Committee Report

Preliminary Three Meeting Outlook for the Pacific Council

(Contingent Items are Shaded and Counted in Time Estimate)

March Sacramento, CA (3/10-14/2008) Estimated Percent of Standard Floor Time = 144%	April Seattle, WA (4/6-11/2008) Estimated Percent of Standard Floor Time = 131%	June Foster City, CA (6/8-13/2008) Estimated Percent of Standard Floor Time = 145%
Highly Migratory Species	**Highly Migratory Species**	**Highly Migratory Species**
NMFS Rpt	NMFS Rpt	NMFS Rpt
New EFPs for 2008: Adopt for Pub Rev	New EFPs for 2008: Adopt Final	Routine Mgmt Meas.: Identify any Proposed Changes
Yellowfin Overfishing Response: Final Action	IATTC Recommendations	
High Seas Shallow-set Longline Amend.: Adopt Alts for Analysis		
Marine Protected Areas	**Marine Protected Areas**	**Marine Protected Areas**
	New MPA's: Comment on New Proposals by MBNMS	New MPA's: Comment on New Proposals by MBNMS
Pacific Halibut	**Pacific Halibut**	**Pacific Halibut**
Rpt on IPHC Annual Mtg		
Incidental Catch Regs for 2008: Adopt Options for Public Rev	Incidental Catch Regs for 2008: Adopt Final	
Salmon	**Salmon**	**Salmon**
2008 Mgmt Measures: Adopt Options for Public Rev & Appt. Hearings Officers	2008 Mgmt Measures: Adopt Final	
KRFC Escapement Shortfall Report: Final Adoption	2008 Methods Review: Process & Prelimin Topics	
Mitchell Act EIS: Provide Council Comments		
Identify Stocks not Meeting Consv. Objectives		
PSC CWT Workgroup Briefing		
Information Reports	**Information Reports**	**Information Reports**
		Salmon Fishery Update
Special Sessions	**Special Sessions**	**Special Sessions**
		1 hr =3%

FRONTLOADED
DRAFT MARCH COUNCIL MEETING AGENDA, MARCH 8-14, 2008, SACRAMENTO, CALIFORNIA

Sat, Mar 8	Sun, Mar 9	Mon, Mar 10	Tues, Mar 11	Wed, Mar 12	Thurs, Mar 13	Fri, Mar 14
Note: HMSAS & HMSMT meet on Fri & Sat at Double Tree or Red Lion or as possible, including previous week. **CLOSED SESSION** 3:00 PM	**CALL TO ORDER** 10:00 am 1-4. Opening Remarks – Approve Agenda (15 min) **HIGHLY MIGRATORY** 1. Yellowfin Overfishing Response: Final Action (1 hr) 2. New EFPs for 2008: Adopt for Public Review (3 hr) 3. High Seas Shallow-set Longline Amend.: Adopt Alts. for Pub. Rev. (3 hr)	**HIGHLY MIGRATORY** 4. NMFS Rpt (Including Work Group Rpt) (45 min) **SALMON** 1. Review 2007 Fisheries & 2008 Stock Abundance Estimates (1 hr) 2. Identify Stocks not Meeting Conservation Objectives (30 min) 3. KRFC Overfishing Assessment and Recommendations (2 hr) 4. Identify Preliminary Mgmt Options for 2008 (3 hr) **ADMINISTRATIVE** 1. Future Agenda Planning (15 min)	**PACIFIC HALIBUT** 1. IPHC Annual Mtg Report (30 min) 2. Incidental 2008 Catch Regs: Adopt for Pub Rev (30 min) **HABITAT** 1. Current Issues (45 min) **GROUNDFISH** 1. NMFS Rpt (45 min) 2. Pacific Whiting Specs for 2008 (2 hr 30 min) **SALMON** 5. Adopt 2008 Mgmt Options for Analysis (2 hr 30 min)	**GROUNDFISH** 3. Stock Assessment Planning for 2011-12 (1 hr 30 min) 4. Consider Inseason Adjustments for 2008 Fisheries, including Final Changes in Whiting Fishery Season Dates (2 hr 30 min) **SALMON** 6. Mitchell Act EIS: Council Comments (2 hours) 7. PSC CWT Work Group Report (1 hr) 8. 2008 Mgmt Option Direction (if needed) (45 min)	**ADMINISTRATIVE** 2. MSRA Implementation (Including MRIP) (3 hr) **SALMON** 9. Adopt 2008 Mgmt Options for Public Review (1 hr 30 min) 10. Appoint Hearings Officers (15 min) **GROUNDFISH** 5. Amendment 20 (Trawl Rationalization): Clarify Alts. (3 hr)	**GROUNDFISH** 6. Final Consideration of Inseason Adjustments & Pacific Whiting Fishery Season Dates (2 hr) 7. Open Access: Adopt Alts. for Public Review (3 hr) **OPEN PUBLIC COMMENT** 1. Comments on Non-Agenda Items (45 min) **ADMINISTRATIVE** 3. Legislative Matters (30 min) 4. Interim Appointments (15 min) 5. Approve Minutes (15 min) 6. Future Council Meeting Agenda Planning & Workload Priorities (30 min)
1 hr	**7 hr 15 min**	**7 hr 30 min**	**7 hr 30 min**	**7 hr 45 min**	**7 hr 45 min**	**7 hr 15 min**
11:00 am ChB 1:00 pm LC	8:00 am GAP 8:00 am GMT 8:00 am SAS 8:00 am STT 8:00 am SSC 4:30 pm EC	8:00 am EC 8:00 am GAP 8:00 am GMT 9:00 am HC 8:00 am SAS 8:00 am STT 8:00 am SSC	8:00 am EC 8:00 am GAP 8:00 am GMT 8:00 am SAS 8:00 am STT 8:00 am SSC ..	8:00 am EC 8:00 am GAP 8:00 am GMT 8:00 am SAS 8:00 am STT	8:00 am EC 8:00 am GAP 8:00 am GMT 8:00 am SAS 8:00 am STT	8:00 am EC

Council-sponsored evening sessions: ***None***

11/9/2007 6:24 PM

BACKLOADED
DRAFT APRIL COUNCIL MEETING AGENDA, APRIL 7-12, 2008, SEATTLE, WASHINGTON

	Mon, Apr 7	Tues, Apr 8	Wed, Apr 9	Thurs, Apr 10	Fri, Apr 11	Sat, Apr 12
Day-Time Council Floor Matters	**CLOSED SESSION** 3:00 PM **CALL TO ORDER** 4:00 pm 1-4. Opening Remarks – Approve Agenda (15 min) **OPEN PUBLIC COMMENT** 1. Comments on Non-Agenda Items (45 min) **ADMINISTRATIVE** 1. Future Agenda Planning (15 min)	**ENFORCEMENT** 1. Annual USCG Rpt. (1 hr) **HABITAT** 1. Current Issues (45 min) **PACIFIC HALIBUT** 1. Incidental 2008 Catch Regs (Salmon Troll and Sablefish): Adopt Final (30 min) **SALMON** 1. 2007 Mgmt Measures: Tentative Adoption for Analysis (2 hr 30 min) **GROUNDFISH** 1. Mgmt Specifications for 2009-10: Adopt a Range & Preferred Alt. of ABCs, OYs, & RB Plans (3 hr)	**GROUNDFISH** 2. NMFS Report (45 min) 3. Stock Assessment Planning for 2011-12: Adopt Final Stocks, TOR, & Sched. (1 hr 30 min) 4. Consider Inseason Adjustments for 2008 Fisheries (2 hr) **MPA** 1. New MPAs: Comment on Proposals by MBNMS (2 hr) **SALMON** 2. 2008 Methodology Review: Select Methods to Review (45 min) 3. Clarify Mgmt Options for Analysis if Necessary (1 hr)	**GROUNDFISH** 5. Amendment 21 (Intersector Allocation): Adopt Final Preferred Alt (3 hr) 6. Mgmt Measures for 2009-10—Part I: Adopt Prelim. Range for Analysis (3 hr) **ADMINISTRATIVE** 2. Legislative Matters (30 min) **SALMON** 4. Mgmt Measures for 2008: Adopt Final (1 hr 30 min)	**SALMON** 5. Clarify Final Action if Necessary (30 min) **ADMINISTRATIVE** 3. MSRA Implementation (2 hr) **HIGHLY MIGRATORY** 1. NMFS Report (30 min) 2. Recommendations to IATTC (1 hr) 3. New EFPs for 2008: Adopt Final Recommendations (3 hr)	**GROUNDFISH** 7. Mgmt Measures for 2009-10—Part II: Adopt Range & Preferred Alt. for Public Review (3 hr) 8. Final Consideration of Inseason Adjustments (2 hr) 9. Trawl Rationalization Analytical Results Briefing (2 hr) **ADMINISTRATIVE** 4. Interim Appointments (15 min) 5. Approve Minutes (15 min) 6. Future Council Meeting Agenda Planning & Workload Priorities (30 min)
	2 hr 15 min	**7 hr 45 min**	**8 hr**	**8 hr**	**8 hr**	**8 hr**
Committees	8:00 am GAP 8:00 am GMT 8:00 am SAS 8:00 am STT 8:00 am SSC 9:00 am HC 10:30 am LC 1:30 pm ChB 4:30 pm EC	8:00 am EC 8:00 am GAP 8:00 am GMT 8:00 am SAS 8:00 am STT 8:00 am SSC ..	8:00 am EC 8:00 am GAP 8:00 am GMT 8:00 am SAS 8:00 am STT	8:00 am EC 8:00 am GAP 8:00 am GMT 8:00 am SAS 8:00 am STT 8:00 am HMSAS 8:00 am HMSMT	8:00 am EC 8:00 am GAP 8:00 am GMT 8:00 am SAS 8:00 am STT 8:00 am HMSAS 8:00 am HMSMT	8:00 am EC

Council-sponsored evening sessions: ***None***

11/9/2007 6:23 PM

COUNCIL WORK LOAD PRIORITIES NOVEMBER 10, 2007 THROUGH APRIL 11, 2008

(**Bolded** tasks represent core management programs; lead responsibility for shaded tasks is outside Council staff)

	Salmon	Groundfish	CPS	HMS	Other
ACTIVE	**SAFE Documents** **Annual Review** **Preseason Rpts** **KRFC Over fishing Assessment** **Annual Specifications** **Pub. Hearings on Options** Mitchell Act EIS Comment	**Inseason Mgmt** **2009-2010 Biennial Spec. Tasks** **SAFE Doc** Trawl IQ Program: Ongoing Analysis of Refined Alts. Intersector Alloc.-- Analyze Alts Off-Year Science Planning Amend. 15 (Whiting Limitation)--Transmit Preferred Alt to NMFS	**Sardine Ann. Specs. Transmittal** Amend. 11 Alloc. Rev.: Prelim. Analysis	**Review EFPs for 2008?** **Yellowfin Overfishing Resp.**	**Admin Necessities (Briefing Book, minutes, Newsletter, Website** **Fiscal Matters,** **MSRA Implementation)** **Pacific Halibut Mgmt** **Implement CSP Changes & Incidental Catch Regs** **Research & Data Needs--Council Staff**
	STTKS Mtg--Dec 6-7; Jan 8-9 SAS Mtg--Mar & Apr STT Mtg--Jan, Feb, Mar, Apr	GAC Mtg--Feb 20-22 TIQC Mtg If Nec.--at Mar CM GMT Mtg--Jan 28-Feb 1; at Mar & Apr CM GAP Mtg--at Mar & Apr CM	Trinational Sardine Forum Nov 29-30	HMSAS Mtg--at Mar CM; at Apr CM if Nec. HMSMT Mtg--Jan; at Mar CM; at Apr CM if Nec. WCPFC involvement & IATTC Mtg--Dec	IPHC Mtg--Nov 28-29; Jan 15-18 EC Mtg--at Mar & Apr CM BC Mtg If Nec.--at Mar or Apr CM Leg. Com Mtg--Mar & Apr CM HC Mtg--Mar & Apr CM SSC Mtg--Mar & Apr CM
CONTINGENT	Historical Data Doc Update FMP	Open Access Limitations--Prepare Alts for Public Review	Harvest Control Rule Review Amendment 12 (Krill): Additional Alt.	Amend.: Mgmt Regime for HS Longline Fishery	
DELAYED	Amendments: OCN Coho Matrix SoF Coho Allocation Cons. Objectives: Puget S. Chin. & Coho LCR Coho Sacramento R. Chinook	Whiting Bycatch Controls Amend. 14--Ownership Limits GF Strategic Plan Formal Review Gear Conversion	International Mgmt	Planning for Joint WPFMC-PFMC Mtg	Ecosystem-Based Mgmt FMP PacFIN/EFIN issues Communication Plan Economic Data Collection Program

California Department of Fish and Game (CDFG) Request for March 2007 Agenda Item on Amendment 22 - Permitting the Groundfish Open Access (OA) Fishery

At the June 2007 Pacific Fishery Management Council (Council) meeting, the Council took action on the Open Access Permitting (Amendment 22) agenda item selecting a qualifying window period of 1998-2006. The Council gave direction to the California Department of Fish and Game (CDFG), as lead agency in the project, to develop a set of alternatives for the process. The Council scheduled adoption of the preliminary range of alternatives and the preliminary preferred alternative for public review at its November 2007 meeting, with a final adoption of the preferred alternative at its April 2008 meeting. Since June, CDFG devoted considerable staff hours in conjunction with staff from the Pacific States Marine Fisheries Commission and National Marine Fisheries Service Northwest Region (NMFS), and input from the Washington Department of Fish and Wildlife (WDFW), and Oregon Department of Fish and Wildlife (ODFW), to draft an initial Environmental Assessment document to facilitate this process. During the summer of 2007, CDFG also conducted four public meetings throughout the state with California constituents, the comments from which have been incorporated in the draft Environmental Assessment (EA). However, at the Council's September 2007 meeting, the Council decided to again postpone the process until an undetermined future meeting due to higher priority agenda issues.

As a result of this September meeting decision, CDFG will release the first draft version of the document entitled "Environmental Assessment of a Program to Limit Entry into the Open Access Sector of the Pacific Coast Groundfish Fishery (Amendment 22 to the Pacific Coast Groundfish Fishery Management Plan)" to the ODFW, NMFS and the WDFW for review and comment to keep the process moving forward.

The recent postponement will provide ODWF, NMFS and WDFW sufficient time over the winter to review the draft document, talk to constituents, and provide comments to CDFG. However, CDFG is concerned that if the OA process is delayed any further than the March 2007 meeting, the results of the completed data analyses, as presented in the current EA document, will not be relevant to the most current fishing practices. Additionally, if the process is delayed beyond March, the Council may decide a new qualifying window period is needed and completely new data analyses will have to be completed, thus making it necessary to re-write the EA document. This will necessitate substantial unanticipated staff hours.

PFMC
11/07/07

Agenda Item C.6.b
Supplemental GMT Report
November 2007

GROUNDFISH MANAGEMENT TEAM REPORT ON FUTURE COUNCIL MEETING AGENDA PLANNING AND WORKLOAD PRIORITIES

The Groundfish Management Team (GMT) reviewed the three meeting outlook and notes that in addition to the core items scheduled on the March agenda, both trawl rationalization and open access (OA) license limitation should be a priority. Given that the scheduled percent of standard floor time is 121% without OA license limitation, the GMT recommends that the meeting be extended to accommodate this priority item.

Regarding trawl rationalization, the GMT understands the intent of the agenda item would be to review analyses and bring forth any outstanding issues. The GMT strongly recommends that only a limited number of emergent issues be presented. We expect the rationalization analysis will be very complex and a preliminary review of the results in March would allow suitable time to process the results prior to adopting preliminary preferred alternatives in June.

Regarding OA license limitation, it is our understanding that if this item is added to the March agenda, the Council action would be to review and refine alternatives. Given that a draft environmental assessment has already been circulated, the GMT would have adequate time to review and prepare for this agenda item. The team is concerned that if OA license limitation is not accommodated in March there will not be adequate time to implement this program for 2009. Timelier implementation of this program will allow the GMT to make more informed decisions for adjusting trip limits in the OA fishery. Additionally, considerable time and effort has been spent on this item and by further postponing the analysis, it may no longer reflect the current state of the fishery.

PFMC
11/09/07

HIGHLY MIGRATORY SPECIES ADVISORY SUBPANEL REPORT ON FUTURE COUNCIL MEETING AGENDA PLANNING AND WORKLOAD PRIORITIES

The Highly Migratory Species Advisory Subpanel (HMSAS) recommends that the Pacific Fishery Management Council (Pacific Council) allocate at least two hours on the March agenda for consideration of a proposed high-seas shallow-set longline fishery.

In the original fishery management plan, an offshore shallow-set longline fishery was included but rejected by National Marine Fisheries Service (NMFS) because of turtle impacts.

Given that the Western Pacific Fishery Management Council (WPFMC) is moving forward with their own amendment revising their shallow-set longline fishery, it is timely and of utmost importance that the Pacific Council consider this issue soon.

Also, through the method by which NMFS considers "allowed turtle impacts," any delay in consideration of this matter may allow WPFMC permitted vessels to utilize all turtle impacts without consideration of the West Coast fleet.

Finally, the Pacific Council needs to cooperate and coordinate with the WPFMC in developing a shallow-set longline fishery that is compatible and competitive with the Hawaii-based fishery.

HIGHLY MIGRATORY SPECIES MANAGEMENT TEAM REPORT ON FUTURE COUNCIL MEETING AGENDA PLANNING AND WORKLOAD PRIORITIES

At the September meeting, the Council tasked the Highly Migratory Species Management Team (HMSMT) and the Highly Migratory Species Advisory Subpanel (HMSAS) with developing alternatives for a West Coast-based shallow set-longline fishery to target swordfish on the high seas. The HMSMT understands that the Council has tentatively considered reviewing those alternatives at the March Council meeting. The HMSMT recommends that the Council include this item on their March meeting agenda in order to coincide with actions of the Western Pacific Fishery Management Council (WPFMC).

The WPFMC is planning to adopt a preferred alternative at their March meeting which may allow for greater effort for Hawaii-permitted vessels in their shallow-set swordfish longline fishery. Once the WPFMC adopts a preferred alternative, a supplemental environmental impact statement (SEIS) will be prepared to identify the effects of the fishery on target and non-target species. The WPFMC has indicated through their October 18 letter to Dr. McIsaac that the Pacific Fishery Management Council (Pacific Council) proposed action could be included in the cumulative impacts section of the SEIS in order to determine effects on target and non-target species, if applicable.

The West Coast-based shallow-set longline fishery has been closed since approval of the Pacific Council Highly Migratory Species Fishery Management Plan, whereas the Hawaii-based fishery was reopened in 2004 with regulations which minimize impacts on protected species (e.g., the requirement to use circle hooks and mackerel bait, and imposing incidental take caps on sea turtles). The opportunities for Hawaii-based fishers and West Coast-based fishers are incongruous and are having a negative effect on the fishers and seafood processing industry on the West Coast.

Since it is expected that the Hawaii-based and West Coast-based fisheries may be operating in overlapping areas and interacting with the same resources, the HMSMT feels it is important to expedite selecting alternatives for further analysis.

PFMC
11/08/07

Agenda Item C.6.b
Supplemental SSC Report
November 2007

SCIENTIFIC AND STATISTICAL COMMITTEE REPORT ON FUTURE COUNCIL MEETING AGENDA PLANNING AND WORKLOAD PRIORITIES

The Scientific and Statistical Committee (SSC) discussed the best way to initiate planning for off-year science workshops on historical catch reconstruction and survey catchability (*q*). For the workshops to be successful, planning needs to begin prior to the March Council meeting. The SSC recommends that temporary *ad hoc* working groups be formed, consisting of several SSC members plus representatives from Northwest and Southwest Fisheries Science Centers and state agencies. Working groups would be led jointly by an SSC member and an agency scientist, and would consist of no more than five or six individuals. The working groups would be tasked with:

- identifying goals for the workshop,
- identifying preparatory work needed before the workshop, and
- aligning resources to ensure the preparatory work is completed.

The working groups may need to meet between November and March, but it is likely that they would be able to accomplish most of their work via correspondence and conference calls. With respect to the off-year science workshop on survey catchability, the SSC recommends that the workshop focus on the deep-water complex (including sablefish) and Pacific whiting.

For planning purposes, the Council may also wish to "pencil-in" an SSC-led workshop during 2008 to address issues likely to arise from the new annual catch limits (ACL) requirements. The scope and timing of the workshop will be dependent upon the finalization of ACL guidance from the National Marine Fisheries Service. However, it does appear likely that the scope will be well beyond that which the SSC can address during its regular meetings.

11/08/07
PFMC