

5 FINAL MANAGEMENT PLAN

5.1 INTRODUCTION

The OCNMS Final Management Plan (FMP) is comprised of a series of 20 action plans (Table 3), which are grouped under five of the six priority issues. One priority issue, Fulfill Treaty Trust Responsibility, is not addressed directly through an action plan but is the sole focus of section 2 of this document.

Table 3 Olympic Coast National Marine Sanctuary Final Management Plan Action Plans

A. Achieve Effective Collaborative and Coordinated Management.	
	A1. Collaborative and Coordinated Sanctuary Management Action Plan
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B. Conduct Collaborative Research, Assessments and Monitoring to Inform Ecosystem-Based Management.	
	B1. Habitat Mapping and Classification Action Plan
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	B3. Populations, Communities and Ecosystems Action Plan
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C. Improve Ocean Literacy	
	C1. K-12 Education Action Plan
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D. Conserve Natural Resources in the Sanctuary	
	D1. Spills Prevention, Preparedness, Response and Restoration Action Plan
	D2. Climate Change Action Plan
	D3. Marine Debris Action Plan
	D4. Wildlife Disturbance Action Plan
	D5. Water Quality Protection Action Plan
	D6. Habitat Protection Action Plan
	D7. Regional Ocean Planning Action Plan
E. Understand the Sanctuary's Cultural, Historical and Socioeconomic Significance	
	E1. Maritime Heritage Action Plan
	E2. Socioeconomic Values of Resources in the Sanctuary Action Plan

These action plans represent OCNMS' preferred alternative for its management plan revision and were analyzed as the preferred alternative in accordance with the National Environmental Policy Act (NEPA). Later in this document, sections 7 (Description of Alternatives) and eight (Environmental Consequences of Alternatives) specifically reference the strategies and activities described in the FMP as the "preferred" alternative (alternative B).

Regulatory changes ONMS proposed during the management plan review (MPR) process are included as activities in relevant action plans, and the environmental consequences of these regulatory changes are analyzed, as required under NEPA, in section 8 of this document.

In addition to the 20 action plans (section 5.2), section 5.3 provides a set of performance measures ONMS will use to assess its progress in implementing the new management plan. Section 5.4 provides cost estimates for each strategy for the first five years of management plan implementation; however, it is possible implementation of the management plan will extend beyond five years.

The suite of strategies and activities in this FMP is ambitious and anticipated to be more than can be accomplished with available resources. To accommodate uncertainties associated with future funding and staffing levels, section 5.5 provides an implementation table (Table 5) indicating which strategies will be high, medium, and low priorities for ONMS to implement under different budget scenarios.

5.2 ACTION PLANS

The twenty action plans outline the specific work ONMS will undertake over the effective life of this management plan, which is anticipated to be five to ten years. ONMS' ability to implement these action plans will depend primarily on its success in forming the necessary partnerships as well as the availability of required resources. Each action plan includes a common set of elements:

- Desired outcome statement;
- Links to relevant OCNMS goals (section 1.3) and other action plans;
- Background information on the topic and why it is priority for OCNMS;
- Strategies and activities; and
- List of key partners.

A. Achieve Effective Collaborative and Coordinated Management

A1. Collaborative and Coordinated Sanctuary Management Action Plan

A2. Community Involvement in Sanctuary Management Action Plan

A3. Sanctuary Operations Action Plans



Introduction

Collaboration and coordination are essential to achieving effective sanctuary management. Since OCNMS was designated in 1994, OCNMS management has fostered relationships with multiple government agencies, the Coastal Treaty Tribes, academic and educational institutions, local communities and groups involved in research, educational programming and resource protection efforts. The scope of these efforts has ranged from sharing information, to coordinating independent actions aimed at achieving a common goal, to developing close and durable partnerships. These efforts have enabled OCNMS management and its partners to accomplish far more than would have been possible by any single entity.

Throughout the MPR process, the AC, IPC and public have repeatedly expressed the need for improved collaboration and coordination between OCNMS and its multitude of partners. The three action plans presented here outline how OCNMS intends to improve and grow its relationships with other governments and government entities, non-government and grassroots organizations and local communities over the life of the management plan.

A1. Collaborative and Coordinated Sanctuary Management Action Plan

Desired Outcome: Improved communication, greater collaboration and stronger relationships between OCNMS and other agencies and governments with jurisdiction over resources in the sanctuary.

Links to Goals:

Goal A - Build and strengthen OCNMS' partnerships with the Coastal Treaty Tribes and the IPC, and honor the OCNMS' treaty trust responsibility.

Goal B - Promote collaborative and coordinated management and stewardship of resources in the sanctuary.

Background:

Almost all of OCNMS' research, education and stewardship efforts are done in collaboration with other agencies and organizations. Throughout the action plans there are references to collaborative and coordinated efforts associated with specific strategies and activities. This action plan, rather than calling out all of these project-level partnerships, instead focuses on how OCNMS will develop and improve its relationships with governments and government agencies at the leadership or management level.

The focus of this action plan is on partnerships with entities having jurisdiction over resources in the sanctuary (Figure 2) and with which OCNMS coordinates and collaborates at a managerial level, including the IPC, NMFS, U.S. Coast Guard, U.S. Navy, the National Park Service, which manages Olympic National Park (ONP), the U.S. Fish and Wildlife Service (USFWS), which manages the Washington Maritime National Wildlife Refuge Complex, and Canadian government agencies. Active collaboration with these organizations will provide a more transparent and inclusive structure for management of Olympic Coast marine resources that span tribal, local, state, federal and international jurisdictions.

During the MPR process, improving collaborative and coordinated sanctuary management repeatedly emerged as one of the highest priorities for OCNMS to address over the next five to ten years. Ongoing regional efforts such as the Washington Ocean Action Plan and the West Coast Governor's Agreement on Ocean Health also have a strong focus on improving collaboration and coordination in order to address the complexity and enormity of current ocean management issues.

Strategy CCM1: EXTERNAL EVALUATION

Evaluate the contribution of OCNMS' institutional relationships to the management of resources within OCNMS.

Activity A: Bring in an independent organization to conduct an external evaluation of OCNMS' institutional relationships in order to obtain fresh insights, and to assess and support programmatic improvements in management of resources in the sanctuary.

Activity B: Report to the IPC and AC on the findings of the evaluation, and seek advice on potential improvements.

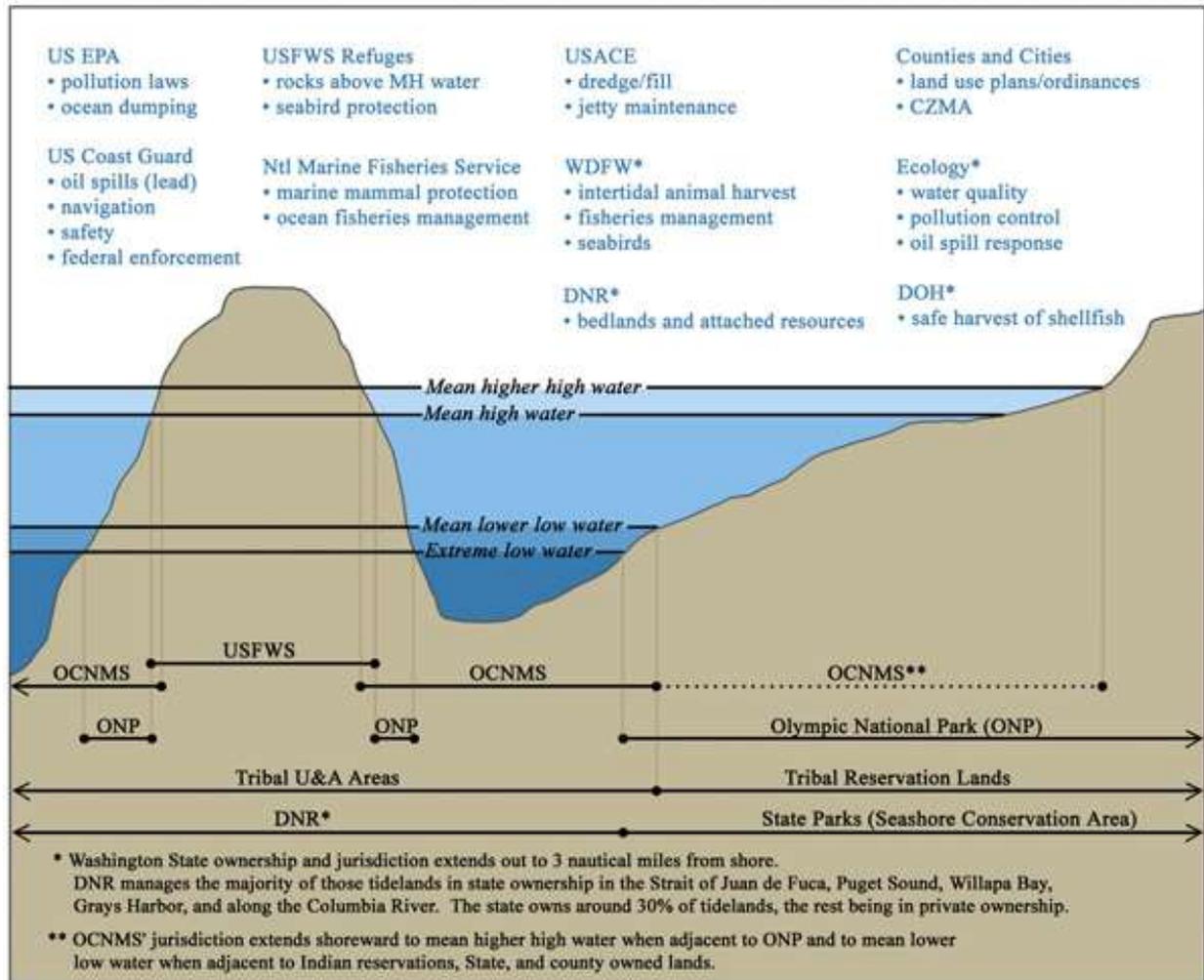


Figure 2 Diagram showing jurisdictional boundaries within OCNMS.

Strategy CCM2: COASTAL TREATY TRIBES

Consult with the Coastal Treaty Tribes (Makah, Quileute and Hoh Tribes and Quinault Indian Nation) in accordance with Executive Order 13175, and partner with tribal staff members to address sanctuary projects and management issues that are of interest to the tribes.

Activity A: Consult early and often with the Coastal Treaty Tribes on any changes to OCNMS regulations that could affect the tribes.

Activity B: Ensure individual tribes are kept informed about sanctuary projects, permit applications and management issues of interest.

Activity C: Work with individual Coastal Treaty Tribes to develop more specific, individually-defined tribal consultation procedures beyond those outlined in section 2.4.

Strategy CCM3: OLYMPIC COAST INTERGOVERNMENTAL POLICY COUNCIL

Continue OCNMS' partnership with the IPC.

Activity A: Implement the ONMS-IPC Memorandum of Agreement (MOA) by supporting quarterly IPC meetings, including an annual meeting with the ONMS Director and OCNMS staff.

Activity B: The Sanctuary Superintendent will brief the IPC annually on the previous year's progress in implementing the OCNMS management plan and on proposed annual operating plan activities for the coming year.

Activity C: In 2012, the respective parties will review and update the ONMS-IPC MOA with the intent to initiate another five-year term.

Activity D: Collaborate with the IPC to develop a long-term research and monitoring plan that focuses on issue of mutual interest.

Strategy CCM4: WASHINGTON STATE

Support implementation of the Washington Ocean Action Plan (OAP), the West Coast Governor's Agreement on Ocean Health, and other applicable state initiatives.

Activity A: Provide staff support and other resources to support Washington Ocean Caucus efforts on the Olympic Peninsula.

Activity B: Meet at least once a year with the Washington state Ocean Caucus and OCNMS Advisory Council state representatives to discuss implementation of the OAP and OCNMS management plan. Identify how OCNMS research and conservation efforts can complement OAP implementation efforts.

Strategy CCM5: DEPARTMENT OF THE INTERIOR

Enhance partnerships with Department of the Interior agencies, particularly the National Park Service (NPS) which manages Olympic National Park (ONP), and the U.S. Fish and Wildlife Service (USFWS) which manages the Washington Maritime National Wildlife Refuge Complex (WMNWR).

Activity A: Meet with NPS and USFWS leadership no less than twice a year.

Activity B: On an annual basis review areas of existing and potential future collaboration.

Strategy CCM6: UNITED STATES COAST GUARD

Coordinate with the U.S. Coast Guard (USCG) on the protection and management of the Nation's coastal waters and marine resources within OCNMS.

Activity A: Meet annually with the USCG to discuss collaborative efforts undertaken as part of this strategy; jointly prepare an Annual Report on the previous year's activities; and prepare a work plan for the coming year.

Activity B: Work with the USCG to develop an orientation plan for USCG personnel on joint USCG and OCNMS issues and regulations.

Activity C: Review and update the OCNMS/USCG Memorandum of Agreement (MOA-2002-117) prior to its expiration date (September 30, 2012).

Strategy CCM7: UNITED STATES NAVY

Improve collaboration and coordination with the U.S. Navy.

Activity A: Coordinate with other NOAA agencies in providing NOAA comments on Navy environmental compliance documents.

Activity B: Periodically meet with the Navy to identify ways to share, combine and maximize resources to conduct mutually beneficial research activities (e.g., habitat mapping) and to identify additional sources of data that support OCNMS management (e.g., bathymetric data).

Activity C: Collaborate with the Navy to establish a mechanism through which the Navy and NOAA can work together on an ongoing basis to ensure Navy activities within OCNMS continue to be conducted in a manner that avoids to the maximum extent practicable any adverse impacts on resources in the sanctuary.

Strategy CCM8: NATIONAL MARINE FISHERIES SERVICE (NMFS)

Enhance ONMS' partnership with NMFS.

Activity A: Meet annually with NMFS Northwest Region and Northwest Fisheries Science Center leadership.

Activity B: Work with NMFS to ensure the Pacific Fishery Management Council is informed about relevant projects, events and issues in the sanctuary and vice-versa.

Activity C: Coordinate with NMFS on issues of common interest within OCNMS boundaries, particularly ecosystem and habitat related research, policy and management actions.

Activity D: On an annual basis, document areas of existing and potential future collaboration.

Strategy CCM9: OFFICE OF NATIONAL MARINE SANCTUARIES

OCNMS staff will fully participate as a member of the Office of National Marine Sanctuaries (ONMS).

Activity A: Participate in annual national and regional leadership and programmatic meetings.

Activity B: Respond to agency requests for data and information.

Activity C: Locally implement national and regional initiatives.

Activity D: Provide subject matter expertise to regional, national and international initiatives as appropriate.

Activity E: Request and apply national and regional subject matter expertise to OCNMS issues.

Strategy CCM10: CANADIAN GOVERNMENT

Work with Canadian government agencies to address transboundary issues.

Activity A: Work with US and Canadian agencies, Coastal Treaty Tribes and First Nations, and conservation organizations to identify opportunities for advancing ecosystem-wide protection, research, education and outreach programs initiatives within the Juan de Fuca Eddy International Marine Ecosystem.

Activity B: Work with Parks Canada and British Columbia Parks to evaluate options for improving transboundary coordination and cooperation on shared objectives with adjoining Canadian marine protected areas (Pacific Rim National Park Preserve and Race Rocks Ecological Reserve/Marine Protected Area), including potential designation as a sister sanctuary through the ONMS International Program.

Activity C: Work with Fisheries and Oceans Canada on maritime safety and oil spill response issues through the Canada/U.S. Cooperative Vessel Traffic Service and the Pacific States/British Columbia Oil Spill Task Force.

Links to Other Action Plans: Community Involvement in Sanctuary Management, Sanctuary Operations, Habitat Mapping and Characterization, Physical and Chemical Oceanography, Populations, Communities and Ecosystems, Data Management, Sharing and Reporting, K-12 Education, Higher Education, Visitor Services, Community Outreach, Spills Preparedness, Prevention, Response and Restoration, Climate Change, Marine Debris, Wildlife Disturbance, Water Quality Protection, Habitat Protection, Regional Ocean Planning, Maritime Heritage, Socioeconomic Values of Resources in the Sanctuary

Key Partners: Parks Canada, British Columbia Parks, Fisheries and Oceans Canada, Big Eddy International Marine Ecosystem Initiative and member organizations, Hoh, Makah and Quileute tribes, Quinault Indian Nation, Northwest Indian Fisheries Commission, Washington Departments of Natural Resources Fish and Wildlife, and Ecology, Washington Governor's Office, Washington Ocean Caucus, Olympic National Park, Washington Maritime National Wildlife Refuge Complex, U. S. Coast Guard, U.S. Navy, NMFS-Northwest Region, Northwest Fisheries Science Center, Pacific Fishery Management Council, NOAA Office of National Marine Sanctuaries (ONMS) and the ONMS West Coast Regional Office

A2. Community Involvement in Sanctuary Management Action Plan

Desired Outcome: Increased involvement of Olympic Peninsula communities in sanctuary management issues and ocean conservation.

Links to Goals:

Goal B - Promote collaborative and coordinated management and stewardship of resources in the sanctuary.

Background:

In addition to strengthening its relationships with agencies and governments with jurisdictional authority over resources in the sanctuary, OCNMS also recognizes the importance of improving 1) its partnerships with local communities and non-governmental organizations and 2) the involvement of these groups (and individual citizens) in the sanctuary management process. As with the Collaborative and Coordinated Sanctuary Management Action Plan, this action plan focuses on building relationships and improving the sanctuary management process. Descriptions of specific, project-level partnerships with community groups (e.g., beach clean-up activities) appear in the appropriate, topical action plans (i.e., Marine Debris Action Plan).

OCNMS is mandated by the NMSA (Section 301(b)(7)) to involve communities and local organizations in the MPR process. The NMSA also mandates OCNMS involve local communities and groups in its Advisory Council (AC). Currently, the local county governments have a shared seat on the OCNMS AC, which also includes a citizen-at-large seat. Additionally, several other AC seats are currently filled by local community members who have expertise in particular fields such as education, tourism, commercial fishing and conservation.

During the public scoping phase of the MPR process, it became clear:

- OCNMS should work to improve local communities' awareness of the sanctuary.
- OCNMS should work to improve public involvement in the AC.
- OCNMS should work to involve local communities in developing and shaping OCNMS education, research and stewardship programs.
- OCNMS programs would benefit from more overall success if local communities were more actively involved in implementing these programs.

Community involvement is increasingly recognized as crucial to achieving effective marine resource protection, which is the primary goal of the National Marine Sanctuaries Act. The state of Washington's recent initiative to empower and fund local counties to form Marine Resources Committees (MRCs) on Washington's outer coast underscores the importance of community-level involvement in ocean stewardship and conservation. MRCs are citizen-based organizations, the goal of which is to, "understand, steward, and restore the marine and estuarine ecological processes of the Washington coast in support of ecosystem health, sustainable marine resource-based livelihoods, cultural integrity, and coastal communities." Other statewide and regional ocean conservation and management initiatives, including the West Coast Governor's Agreement on Ocean Health, the Washington Ocean Action Plan and the recently-passed state marine spatial planning bill, also emphasize active community involvement in ocean management decision-making processes. This action plan seeks to support these statewide and

regional efforts and improve the sanctuary management process through more effective community partnerships and involvement. In addition to the strategies listed in this section, OCNMS work under Action Plan C, Improve Ocean Literacy, also directly benefits OCNMS community relations and strengthens community involvement in OCNMS activities.

Strategy COM1: ADVISORY COUNCIL

Involve local communities in sanctuary management issues through the AC process.

Activity A: Fill all AC seats (both voting and non-voting) and encourage improved AC member attendance.

Activity B: Encourage stronger connections between AC members and local communities by increasing AC outreach efforts.

- Encourage AC members to post links to their organizations' on-line calendars on the OCNMS website.
- Encourage every AC member to forward AC meeting announcements to their organization's distribution list.
- Encourage AC members to include articles explaining the value of their involvement in the AC in their organizations' outreach publications.
- Work with AC members and OCNMS to host and attend social events in local communities on the outer coast (e.g., an annual open house).

Activity C: Actively involve the AC in implementing the management plan.

- Identify strategies in the management plan that particular AC members, due to their skills and interests, could help OCNMS implement. Put these AC members in contact with the staff in charge of these strategies.
- Solicit the AC's assistance in implementing management plan strategies through the establishment of standing subcommittees or working groups, as appropriate under the AC charter.
- Annually report to the AC on management plan implementation, including status of performance measures.
- Encourage the AC to provide advice on the success of management plan implementation efforts.

Strategy COM2: MARINE RESOURCES COMMITTEES

Continue and expand collaborative marine stewardship efforts with Clallam, Jefferson and Grays Harbor counties.

Activity A: Participate in the North Pacific Coast Marine Resources Committee.

Activity B: Participate in the Grays Harbor Marine Resources Committee.

Strategy COM3: NON-GOVERNMENTAL ORGANIZATIONS

Continue and increase, to the extent practicable, collaborative efforts with non-governmental organizations on the Olympic Coast.

Activity A: Continue participation in/sponsorship of the Washington Clean Coast Alliance and the Coastal Observation and Seabird Survey Team (COASST).

Activity B: Maintain and develop partnerships with environmental NGOs such as Surfrider, The Nature Conservancy, Oceana, the Marine Biology Conservation Institute, Ecotrust and others in order to build support for marine conservation efforts in the sanctuary and the California Current ecosystem.

Activity C: Increase interactions and, if appropriate, develop partnerships with organizations representing commercial and recreational fishing industries and the shipping industry.

Links to Other Action Plans: Community Outreach, Marine Debris, Data Management, Sharing and Reporting, Climate Change, Habitat Protection, Regional Ocean Planning

Key Partners: Marine Conservation Institute, Surfrider Foundation, The Nature Conservancy, Oceana, Ecotrust, Olympic Coast Alliance, other NGOs, Westport Charterboat Association, Marine Exchange of Puget Sound, and other marine shipping and coastal fishing organizations, Olympic Coast National Marine Sanctuary Advisory Council and its members, North Pacific Coast and Grays Harbor marine resources committees, Clallam County, Jefferson County, Grays Harbor County

A3. Sanctuary Operations Action Plan

Desired Outcome: Improved efficiency and effectiveness in OCNMS management capacities and capabilities.

Links to Goals:

Goal H - Build, maintain, and enhance an operational capability and infrastructure.

Background:

In order to effectively achieve the strategies outlined in the other 19 action plans, OCNMS needs to maintain basic staffing, infrastructure and administrative functions. This action plan addresses these operational needs and details OCNMS' plans to maintain its research vessel and on-water capabilities, maintain and train its staff and volunteers, maintain adequate facilities and other infrastructure, complete its annual budgeting process, manage contracts, maintain its regulatory program and report on management plan implementation progress. In effect, this Sanctuary Operations Action Plan supports all other action plans in the Final Management Plan.

Strategy OPS1: VESSEL INFRASTRUCTURE AND OPERATIONS

Maintain an on-water presence in the sanctuary to ensure effective and efficient sanctuary operations, including research and education activities.

Activity A: Develop annual operational plans for aircraft and vessels (NOAA, charter) to support the revised management plan.

Activity B: Maintain and implement operational guidelines and a vessel operator and crew member qualification plan.

Activity C: Implement field operations to address activities identified in the other action plans.

Strategy OPS2: FACILITIES

Develop new and maintain current infrastructure for sanctuary offices, programs, research vessels, equipment, and field operations.

Activity A: Provide office, field station, interpretive facilities, and warehouse facilities.

Activity B: Update and implement the OCNMS long-range facilities plan. Evaluate OCNMS' current office, lab and warehouse space and determine if changes need to be made to the plan to meet program needs identified during MPR.

- Evaluate current office spaces to determine if they meet future needs as articulated in the revised management plan.
- Evaluate the need to refurbish/replace OCNMS' Neah Bay field station.
- Evaluate the need for laboratory infrastructure.
- Evaluate OCNMS pier space needs.
- Evaluate the need for public meeting space and support infrastructure.
- Evaluate options for a satellite office on the Outer coast and/or a visitor center in the southern part of the sanctuary.

- Evaluate options for a joint visitor center in Port Angeles with the Feiro Marine Life Center and Olympic National Park.
- Explore opportunities to work with existing facilities on the outer coast, such as the University of Washington Olympic Natural Resources Center, in order to maintain an OCNMS staff presence on the outer coast.

Activity C: Develop the infrastructure to support and implement OCNMS' long-range interpretive plan.

Activity D: Implement OCNMS requirements of ONMS small boats requirements studies, as amended (including scheduled replacements of *R/V Tatoosh* and rigid hull inflatable boat).

Strategy OPS3: ANNUAL PLANNING

Prepare annual budgets, and develop and implement annual operating plans (AOPs) in support of management plan activities.

Activity A: Produce an annual operating plan and budget, per ONMS guidance and timelines.

Activity B: Oversee budget, contracts and acquisitions in compliance with Federal Acquisition Regulations.

Activity C: Submit required reports to ONMS headquarters.

Strategy OPS4: SAFE OPERATIONS

Maintain and, where appropriate, further develop procedures to ensure safe and responsible sanctuary operations.

Activity A: Develop, maintain and periodically test an OCNMS continuity of operations plan.

Activity B: Ensure compliance with NOAA directives, safety and workplace regulations, including those related to vessel safety.

Activity C: Ensure compliance with NOAA directives and local, state and federal environmental compliance regulations.

Strategy OPS5: STAFFING

Recruit, retain and support staff in order to support ongoing programs and achieve the goals and objectives presented in the management plan.

Activity A: Support and maintain appropriate staffing to implement the OCNMS management plan.

Activity B: Contract for support services that cannot be filled by limited federal positions and are needed to implement the OCNMS management plan.

Activity C: Improve training opportunities for staff, prioritizing training that will support management plan implementation.

Activity D: Conduct an internal evaluation of the OCNMS information technology (IT) plan on an annual basis and work to ensure IT services are adequate to support staff and program needs.

Strategy OPS6: VOLUNTEER PROGRAM

Maintain and enhance OCNMS' volunteer programs in order to build connections with the community and achieve the goals and objectives of the management plan.

Activity A: Actively recruit and train volunteers to promote community stewardship and to assist in the implementation of the OCNMS management plan.

Activity B: Improve training opportunities for volunteers, prioritizing training to support management plan implementation.

Strategy OPS7: PERMITTING AND CONSULTATIONS

Implement the OCNMS permitting program based on OCNMS and national program regulations, guidance and performance measures; as well as other applicable laws, regulations and agreements.

Activity A: Review permit applications, conduct consultations with other agencies, governments and organizations, make permit decisions, develop appropriate documentation (may include permits, NEPA analysis, mitigation recommendations, and decision memos) and maintain records in the ONMS database.

Activity B: Brief the AC and IPC on major permit applications constituting new or major activities in the sanctuary.

Activity C: Report to the Coastal Treaty Tribes, AC and IPC annually on the status of permit applications and decisions to OCNMS and associated tribal consultations.

Activity D: Formally articulate the current tribal consultation process for permits.

Activity E: Work with the state and other interested agencies and/or Coastal Treaty Tribes to develop a programmatic agreement on how OCNMS interprets and meets the requirements of Section 106 of the National Historic Preservation Act in the context of sanctuary historic resources.

Strategy OPS8: VOLUNTARY COMPLIANCE

Promote knowledge and understanding of OCNMS regulations, along with other regulations and voluntary programs that apply to sanctuary waters.

Activity A: Assess opportunities for educational signage about regulations at access points to the sanctuary (e.g., Neah Bay and La Push boat ramps).

Activity B: Develop interpretive materials to support enforcement efforts and promote public awareness of sanctuary regulations.

Activity C: Distribute a flyer on the Area to Be Avoided to the maritime industry through direct mail and by including in the Vessel Traffic Service Puget Sound Users Manual.

Activity D: Develop and distribute education materials on OCNMS' overflight regulation at air shows and other events.

Strategy OPS9: ENFORCEMENT AND INCIDENT RESPONSE

Improve compliance with and enforcement of OCNMS regulations, other regulations, and voluntary programs that apply to sanctuary waters.

Activity A: Develop training opportunities for law enforcement professionals to promote and enhance their understanding of cultural and natural resources in the sanctuary and the regulations protecting them.

Activity B: Maintain bi-annual meetings with law enforcement staff (as described in the NMFS Office of Law Enforcement (OLE) 2009 report) and encourage increased presence of NOAA OLE and Washington Department of Fish and Wildlife (WDFW) law enforcement in the sanctuary.

Activity C: Work with NOAA OLE and the ONMS to clarify OCNMS enforcement needs as identified in 2010 ONMS/OLE 3-year Strategy for Clarifying Enforcement Needs and Testing Enforcement Measures.

Activity D: Promote active enforcement of the no-discharge regulation as it applies to abandoned vessels.

Activity E: Encourage vessel owners to carry insurance that would cover the salvage of their vessel if it sank in the sanctuary. Discuss sanctuary regulations and concerns with insurance companies to evaluate issues related to issuing insurance policies to cover salvaging of sunken vessels.

Activity F: Engage the USCG, at the earliest opportunity, to develop removal strategies for vessel incidents that may result in vessel sinkings within sanctuary and to utilize the Oil Spill Liability Trust Fund (OSLTF) to prevent or mitigate oil pollution impacts.

Activity G: Work with NMFS, Pacific Fishery Management Council, Coastal Treaty Tribes and other partners to monitor compliance with Essential Fish Habitat regulations in the sanctuary.

Activity H: Clarify ambiguous or confusing aspects of the OCNMS regulations, and delete extraneous clauses. These changes to OCNMS regulations are being made as a rulemaking *concurrently* with the publication of the FMP. Regulatory changes include the following:

- Replace the term “seabed” with the term “submerged lands” throughout the regulations to match the language used in the OCNMS designation document;
- Replace the term “traditional fishing” with “lawful fishing” throughout the OCNMS regulations;
- Delete the out-dated OCNMS address and replace it with OCNMS’ current address;
- Delete reference to leases/permits existing at the time of OCNMS designation (as none were found to exist);
- Delete the term “federal project” from the definitions and replace this reference in the regulations with a reference to the specific “Quillayute River Project”; and
- Clarify treaty trust responsibility language.

Activity I: Respond to emergency incidents in the sanctuary, as appropriate.

Strategy OPS10: MANAGEMENT PLAN IMPLEMENTATION REPORTING

Establish reporting mechanisms/processes for management plan implementation and emerging issues.

Activity A: Report to partners and the public annually on the implementation of the management plan, particularly on performance measure achievement.

Activity B: Report to partners and the public annually on ONMS' response to emerging issues not anticipated in the management plan.

Activity C: Annually document any clarifications, lessons learned, enhancements or recommended changes to existing strategies and activities.

Activity D: Develop outreach materials to be used by OCNMS staff, AC and IPC members to convey information about management plan implementation to partners, stakeholders and constituent groups.

Activity E: Collaborate with regional natural resource management agencies to develop a response strategy or plan for unusual natural resource events (e.g., unexpected wildlife mortality events) not anticipated in the management plan.

Links to Other Action Plans: Collaborative and Coordinated Sanctuary Management, Community Involvement in Sanctuary Management, Habitat Mapping and Characterization, Physical and Chemical Oceanography, Populations, Communities and Ecosystems, Data Management, Sharing and Reporting, K-12 Education, Higher Education, Visitor Services, Community Outreach, Spills Preparedness, Prevention, Response and Restoration, Climate Change, Marine Debris, Wildlife Disturbance, Water Quality Protection, Habitat Protection, Regional Ocean Planning, Maritime Heritage, Socioeconomic Valuation of Resources in the Sanctuary

Key Partners: Advisory Council, Olympic Coast Intergovernmental Policy Council, West Coast sanctuaries, Makah, Quileute, Hoh Tribes and Quinault Indian Nation, Office of National Marine Sanctuaries, NOAA Safety and Environmental Compliance Office, NOAA Small Boat Program, NOAA Workforce Management Office, NOAA Acquisition and Grants Office, Feiro Marine Life Center, Makah Cultural and Research Center, Ocean Shores Visitor Center, Grays Harbor Historical Seaport Authority, COASST, State of Washington, ONP, FWS, ACOE, USCG, NOAA Office of Law Enforcement, Aircraft Owners and Pilots Association, Washington Pilots Association and others, Washington Department of Ecology, NMFS, Washington Department of Natural Resources, Washington Department of Fish and Wildlife, Washington Department of Archeology and Historic Preservation

B. Conduct Collaborative Research, Assessments and Monitoring to Inform Ecosystem-Based Management

B1. Habitat Mapping and Classification Action Plan

B2. Physical and Chemical Oceanography Action Plan

B3. Populations, Communities and Ecosystems Action Plan

B4. Data Management, Sharing and Reporting Action Plan



Introduction

The OCNMS 2008 Condition Report, along with comments received during MPR scoping, emphasized the importance of data to inform management decisions and also identified significant data gaps related to our understanding of natural resources and ecosystem processes within the sanctuary. The intent of these four action plans is to outline a comprehensive research and monitoring program for OCNMS to undertake in partnership with other entities.

To maximize effectiveness of OCNMS' efforts, these action plans place a strong emphasis on maintaining and further developing collaborative scientific research and monitoring programs that address diverse aspects of habitat characterization, living resources monitoring and oceanographic and water quality monitoring. Additionally, a strong emphasis is placed on the need to improve data management, sharing and reporting.

The action plans presented here are ambitious, and OCNMS' success in implementing them will in large part depend upon receipt of substantial grant funds (by OCNMS or its research partners). Activities that cannot be funded with the OCNMS budget alone are purposely included in the action plans because it is impossible to know how grant funding opportunities will change from year to year and what unforeseen funding sources might become available. OCNMS also hopes, in publishing a broad and comprehensive framework for research in the sanctuary, other

agencies, organizations and academic institutions might be encouraged to develop and fund research projects that OCNMS is unable to support.

B1. Habitat Mapping and Classification Action Plan

Desired Outcome: Improved understanding of OCNMS habitats.

Links to Goals:

Goal C - Investigate and enhance the understanding of ecosystem processes, and inform ecosystem-based management efforts, through scientific research, monitoring, and characterization.

Background:

The mapping and classification of habitats and characterization of habitat-species associations provide critical information to support management, research, monitoring, and education within OCNMS, as well as within larger, regional ocean management regimes. Thus far, only 25% of the OCNMS seafloor has been adequately mapped, and only 19% has been characterized to habitat type. There is a clear need to complete seafloor surveys and characterize and identify species-habitat associations in order to inform management decisions.

Habitat mapping and characterization are high priorities for OCNMS, especially for recently discovered deep sea biogenic habitats that may be sensitive to anthropogenic disturbance. Mandates and needs for habitat mapping and characterization are highlighted in the NMSA, the West Coast Governor's Ocean Action Plan, the Washington State Seafloor Mapping Workshop, and for groundfish fishery management plans (which involve the Pacific Fishery Management Council, NMFS, Washington Department of Fish and Wildlife, Northwest Indian Fisheries Commission and Olympic Coast Intergovernmental Policy Council).

Strategy MAP1: REGIONAL COORDINATION

Develop and sustain partnerships to maximize and leverage seafloor and habitat mapping resources and to promote the use of established mapping standards.

Activity A: Participate in regional forums to advance alignment and collaboration with broader mapping efforts, including initiatives of the Washington State Seafloor Mapping Committee and the West Coast Governors' Agreement on Ocean Health.

Activity B: Establish standards for the collection, assessment, verification, and application of seafloor mapping data in collaboration with regional forums.

Activity C: Pursue opportunities to acquire and share existing seafloor and marine habitat data from federal, state, and local partners.

Strategy MAP2: SEAFLOOR HABITAT MAPPING

Continue efforts to map seafloor habitats.

Activity A: Conduct seafloor habitat mapping using the following considerations:

- Collect high quality, high-resolution sonar data in areas where no seafloor data exists
- Map contiguous areas
- Map hard substrate areas and other areas of probable or known important biogenic habitat

- Map habitats with known or potential use by species of concern
- Map coastal areas less than 10 m water depth (i.e., areas most likely to be affected by oil spills)
- Utilize opportunities to collect partial sonar data types (e.g., sidescan only);
- Re-map areas where inadequate seafloor data exists
- Utilize opportunities to leverage ship time, equipment, and mobilization expenses

Activity B: Verify/ground truth sonar data through the collection and analysis of video, physical samples, or other methodologies.

Strategy MAP3: HABITAT CLASSIFICATION

Integrate observations from sonar data and ground truthing to classify habitats and generate derivative maps and Geographic Information System (GIS) products.

Activity A: Apply the classification scheme of Greene et al. (1999) and link this classification scheme with NOAA's Coastal and Marine Ecological Classification Structure.

Activity B: Analyze data to generate derivatives of substrate data and geological features (e.g., seafloor morphology, slope, rugosity, stability/disturbance, tectonic features (faults) and submarine landslides).

Activity C: Integrate habitat characterization information (as available) with biological, chemical, and ocean processes information to further understanding of habitat use.

Strategy MAP4: MAPPING PRODUCTS

Report and share seafloor habitat characterization data in formats useful for resource managers and the public.

Activity A: Develop digital mapping products that include fully interpreted, classified and attributed geologic and habitat maps.

Activity B: Provide Federal Geographic Data Committee standard metadata for all maps and map products.

Activity C: Develop GIS products using ESRI software for export to open source GIS and Google Earth software, as well as other formats useful for public use and outreach.

Activity D: Make mapping data available for integration and use in multiple applications, such as:

- Marine spatial planning
- Fisheries management
- Living marine resource management
- Assessing climate change and sea level change impacts
- Improving earthquake and tsunami hazard assessments
- Forecasting storm inundation and coastal erosion
- Siting of offshore infrastructure (e.g., aquaculture, renewable energy facilities)

Links to Other Action Plans: Collaborative and Coordinated Management, Marine Debris, Regional Ocean Planning, Habitat Protection

Key Partners: NOAA (National Ocean Service and NMFS), U.S. Geological Service, USFWS, Washington Departments of Fish and Wildlife, Ecology, and Natural Resources, Makah, Quileute, and Hoh tribes, Quinault Indian Nation, Olympic Coast Intergovernmental Policy Council, Northwest Indian Fisheries Commission, Washington State Seafloor Mapping Consortium, West Coast Governors' Agreement on Ocean Health Seafloor Mapping Action Coordination Team, Washington Coast Sustainable Salmon Partnership, other NGOs, universities, international entities, U.S. Navy

B2. Physical and Chemical Oceanography Action Plan

Desired Outcome: Improved understanding of overall water quality in the sanctuary

Links to Goals:

Goal C - Investigate and enhance the understanding of ecosystem processes, and inform ecosystem-based management efforts, through scientific research, monitoring, and characterization.

Background:

Near shore oceanographic conditions within OCNMS are poorly characterized with respect to temporal and spatial dynamics and ecological processes associated with changing conditions. Coastal ocean conditions off the Olympic Coast of Washington have a high degree of variability, which complicates a thorough characterization of regional oceanographic processes and limits predictive abilities. This variability can span time scales from diel (day vs. night) through decadal (e.g., Pacific Decadal or El Niño Southern Oscillations) and spatial scales of micro- (1 to 10 km) and meso- (10's to 100's of km). Such variability can have profound implications for the sanctuary's living resources. For example, strong El Niño years bring increased sea surface temperature and decreased primary productivity within the sanctuary.

Physical and chemical oceanographic data are useful to federal, tribal, university and state-sponsored studies predicting harmful algal blooms, thereby helping assess potential threats to human health, shellfisheries, seabirds and marine mammals. These data are also used in the study of intertidal invertebrate and algae dynamics, in the ground truthing remote sensing data, in assisting with oil spill response and in improving our understanding of hypoxic conditions measured in near shore waters of Washington and Oregon. Additionally, expanded physical and chemical oceanographic monitoring programs are needed to address emerging concerns about ocean acidification.

OCNMS currently deploys (seasonally) anywhere from 10 to 13 monitoring buoys in the sanctuary's near shore environment to monitor water temperature, salinity, dissolved oxygen, currents and indicators of primary productivity. Additionally, OCNMS partners with and supports other agencies, organizations and academic institutions' efforts to conduct oceanographic monitoring in the sanctuary. OCNMS has supported University of Washington and Northwest Association of Networked Ocean Observing Systems (NANOOS) efforts to build and deploy a year-round, real-time oceanographic monitoring buoy and glider system off the coast of La Push and has frequently encouraged and supported efforts of researchers to conduct ocean acidification, harmful algal bloom, and oceanographic conditions research projects in the sanctuary. OCNMS also looks for opportunities to incorporate oceanographic monitoring, where appropriate and feasible, into sanctuary permit requirements.

However, much more oceanographic information is needed in order to 1) understand the effects of a changing climate on sanctuary ecosystems and the large-scale ocean processes affecting these ecosystems and 2) make informed sanctuary management decisions in response to a changing climate. Moreover, during the MPR process it became clear obtaining this oceanographic information is a priority for all statewide and regional ocean management entities and ocean researchers. The sanctuary is in a unique position to serve as both a laboratory and

classroom for conducting and sharing, respectively, oceanographic research. The aim of this action plan is to identify strategies OCNMS can undertake in order to foster regional oceanographic research efforts and build a stronger base of knowledge related oceanographic processes in the sanctuary.

Strategy OCEO1: COASTAL MOORING PROGRAM

Continue the OCNMS water quality monitoring program to monitor key physical and chemical oceanographic parameters in coastal waters. As feasible, expand this monitoring to include additional instrumentation (including acoustic monitoring), parameters, locations, year-round data collection, and real-time data transmission.

Activity A: Monitor coastal waters using seasonally-deployed (spring through fall), instrumented moorings.

- Continue use of established seasonal mooring locations.
- Collect data on temperature, salinity, dissolved oxygen, currents, chlorophyll.
- Calibrate instrumentation annually, or as necessary.
- Process data within one year and make available via a central, publically accessible web site.

Activity B: Consult with partners to determine research and resource management questions that can be addressed with existing or expanded water quality monitoring efforts.

Activity C: Secure funding for additions and improvements to the OCNMS coastal water quality monitoring program. Program improvements could include:

- Additional sensors or parameters
- Expanded spatial coverage
- Expanded seasonal coverage, potentially to year-round data collection
- Real-time data transmission

Activity D: Support efforts to expand regional oceanographic monitoring programs (e.g., NANOOS, NDBC, UW), share data, model oceanographic processes, and improve public accessibility of this information.

- Support the NANOOS coastal sensor array (2 buoys, 1 glider) at La Push.
- Participate as a partner in NANOOS meetings and conference calls.
- Promote NANOOS as a data resource for OCNMS partners and the public.
- Provide a link to NANOOS on the OCNMS website.

Strategy OCEO2: HYPOXIA

Monitor dissolved oxygen levels and ecological impacts of hypoxic conditions (low oxygen concentration) in coastal waters.

Activity A: Monitor, assess, and understand the spatial and temporal distribution of hypoxic conditions and their impacts on living organisms.

Activity B: Expand monitoring to include additional locations, year-round data collection, and/or real-time data transmission, such as will be available with the La Push NANOOS buoy.

Activity C: Promote collaborative efforts with the outer coast trustees and fishermen to collect field observations and conduct additional monitoring in response to identified hypoxic conditions.

Strategy OCEO3: OCEAN ACIDIFICATION

Investigate changing ocean chemistry, acoustics and other physio-chemical changes and impacts to living organisms associated with increasing carbon dioxide levels in the atmosphere.

Activity A: Collaborate in regional efforts to monitor and model carbonate system variables to improve understanding of the extent and severity of ocean acidification.

Activity B: Collaborate in research on the effects of ocean acidification on calcifying and non-calcifying organisms, including deep sea corals, plankton, intertidal invertebrates, and on trophic relationships between these organisms.

Strategy OCEO4: HARMFUL ALGAL BLOOMS

Collaborate in regional efforts to research and monitor harmful algal blooms (HABs).

Activity A: Work within the Olympic Region Harmful Algal Blooms (ORHAB) partnership and support efforts to monitor, detect, understand and predict HABs in the sanctuary region.

Activity B: Use the timing of known HAB events as opportunities to encourage and conduct research and monitoring to characterize the initiation, dynamics and extent of impacts to natural resources and humans.

Links to other Action Plans: Climate Change, Populations, Communities and Ecosystems, Collaborative and Coordinated Sanctuary Management, Water Quality Protection

Key Partners: ORHAB, ECOHAB-PNW, NOAA (NOS, NWFSC, PMEL, NDBC, NCCOS), NANOOS, NASA, Makah, Quileute and Hoh Tribes, Quinault Indian Nation, Washington Departments of Ecology, Health, Fish and Wildlife, and Natural Resources, U.S. EPA, IPC, West Coast Governors' Agreement on Ocean Health Research Action Coordination Team, University of Washington, Oregon State University/PISCO, Olympic National Park, other universities, international entities, and NGOs

B3. Populations, Communities and Ecosystems Action Plan

Desired Outcomes: 1) Improved understanding of health of and changes in sanctuary ecosystems; and 2) a more adaptive, ecosystem-based approach to research and management in the sanctuary.

Links to Goals:

Goal C - Investigate and enhance the understanding of ecosystem processes, and inform ecosystem-based management efforts, through scientific research, monitoring, and characterization.

Background:

It is of significant interest to OCNMS, its Advisory Council and the IPC that data collected in the sanctuary be used to support adaptive and ecosystem-based management frameworks. Utilizing an ecosystem-based approach to ocean management is also a priority for NMFS, the Coastal Treaty Tribes and the state of Washington. For OCNMS and others to implement ecosystem-based management in the sanctuary, information about biological and physical resources in the sanctuary must be collected across multiple scales.

This action plan focuses primarily on biological resources and understanding the interactions between organisms and the physical environment. The action plan details research and monitoring priorities on an expanding scale including individual taxa, functional groups, populations, communities, and ecosystems. The goal of this action plan is to develop the body of scientific knowledge about the sanctuary in such a way ecosystem-based management decisions can be more effectively developed and substantiated.

Strategy ECO1: WATER COLUMN COMMUNITIES

Conduct and collaborate in investigations of water column communities.

Activity A: Monitor and encourage others to monitor pelagic larval phases of species of commercial and ecological significance (e.g., Dungeness crab, razor clams, mussels, euphausiids, copepods).

- Improve characterization of locations in water column, seasonal abundance and distribution of pelagic life phases of key marine species.
- Monitor pelagic zooplankton and forage fish abundance during on-water seabird and marine mammal surveys.
- Extend to year-round monitoring, as feasible.

Strategy ECO2: INTERTIDAL

Conduct and collaborate in research on the distribution and abundance of intertidal organisms.

Activity A: Coordinate with Olympic National Park (ONP) to evaluate the utility of continued monitoring of sand and rocky intertidal sites on Makah and Quinault reservations following ONP protocols.

Activity B: Monitor rocky intertidal sites on Makah and Quinault reservations following the Multi-Agency Rocky Intertidal Network (MARINe) protocols.

- Incorporate data into the MARINe database.
- Report the findings of intertidal monitoring efforts on an annual basis.

Activity C: Expand intertidal monitoring efforts, as feasible, to assess indicator species and parameters for particular stressors (e.g., climate change, competition, functional group/trophic coverage).

Strategy ECO3: SUBTIDAL

Characterize the habitats and biota of the nearshore subtidal zone.

Activity A: Develop a Subtidal Monitoring Plan based on recommendations of Subtidal Workshop hosted by OCNMS in 2002.

Activity B: Based on the Subtidal Monitoring Plan, implement subtidal habitat characterization and monitoring projects.

Activity C: As indicator species and parameters for particular stressors (e.g., climate change, competition, functional group/trophic coverage) are identified, establish subtidal monitoring efforts.

Strategy ECO4: BENTHIC

Investigate the abundance and distribution of benthic organisms, both epifauna and infauna, from subtidal to deeper shelf habitats.

Activity A: Collect data on abundance and distribution of benthic organisms, including during conduct of seafloor mapping, coral and sponge surveys, and benthic recovery studies.

Activity B: Analyze and interpret data collected through video monitoring and other techniques and maintain a database for benthic organism distribution, abundance, and other quantifiable measures.

Activity C: Conduct surveys to identify distribution and abundance, characterize ecosystem values, and assess the condition of deep sea biogenic communities (e.g., corals and sponges).

Activity D: As required in the Settlement Agreement between OCNMS and operators of the PC-1 submarine telecommunications cables, conduct benthic habitat monitoring on the PC-1 cable routes to evaluate recovery of habitats following remediation of the cables conducted in 2005.

Strategy ECO5: FISH

Improve characterization of spatial and temporal distribution, abundance, and habitat use of fish.

Activity A: Collaborate with tribal, state, federal, and university researchers to assess the distribution, abundance, and productivity of forage fish populations, including documentation of intertidal areas used for spawning.

Activity B: Solicit the AC's assistance, through establishment of an AC working group, in developing recommendations for pilot project(s) to investigate the abundance and distribution of fish.

Activity C: Continue partnership with Reef Environmental Education Foundation (REEF) for monitoring subtidal sites for fish and macroinvertebrate trends.

Strategy ECO6: MARINE BIRDS

Improve characterization of spatial and temporal distribution, abundance, forage behavior and areas used by marine birds.

Activity A: Work with partners to evaluate past efforts for at-sea surveys and make recommendations for future surveys for temporal and spatial abundance and on-water distribution of marine birds.

- Key partners include WDFW, NMFS, UW, and USFWS.
- Evaluation should include survey methodology (e.g., distance sampling), area coverage, data management and analysis, and reporting.
- Data gaps and information needs should be identified. Potential information needs include:
 - ◆ Forage areas used throughout the year
 - ◆ Migration periods
 - ◆ Non-breeding seasons
 - ◆ Parallel monitoring of pelagic zooplankton and forage fish abundance during on-water seabird surveys
- Conduct a power analysis of existing data to determine the minimum level of effort necessary to meet survey objectives (e.g., every 3-5 years vs. annual).

Activity B: Conduct at-sea monitoring of marine bird species following recommendations developed through evaluation of past survey efforts.

Activity C: Provide in-field staff assistance to USFWS in monitoring abundance, productivity, and habitat use at coastal seabird colonies.

Activity D: Continue to participate in Coastal Observation and Seabird Survey Team (COASST) as a regional coordinator of volunteers.

Activity E: Collaborate in update of the Catalog of Washington Seabird Breeding Colonies for colonies adjacent to and within OCNMS.

Activity F: Work with partners to establish a small number of coastal viewing sites to produce colony maps and periodic counts of nesting seabirds at easily-viewed coastal colonies.

Strategy ECO7: MARINE MAMMALS

Improve characterization of spatial and temporal distribution, abundance, forage behavior and areas for marine mammals.

Activity A: Provide in-field staff assistance to support the state of Washington's annual sea otter census.

Activity B: Collaborate in studies designed to detect the influence of sea otters on the distribution/abundance of prey species and any resulting changes in kelp habitat.

Activity C: Monitor temporal and spatial abundance and distribution of marine mammals, including identification of foraging areas used throughout the year. Collaborate in assessing need for expanded efforts to assess migration and non-breeding time periods.

Activity D: Monitor underwater acoustic environment and, as feasible, responses of marine mammals to acoustic disturbance.

Strategy ECO8: STRANDING NETWORKS

Participate in the regional marine mammal incident response networks.

Activity A: Collaborate with other Northwest Marine Mammal Stranding Network (<http://www.nwr.noaa.gov/Marine-Mammals/Stranding-Information.cfm>) participants to share information and resources. Goals of the Network are to:

- Promote timely response and investigation of stranding events
- Minimize direct interactions between stranded marine mammals, humans and domestic animals
- Maximize collection of biological specimens for examination and other data
- Improve the detection of signs of human interactions that may have contributed to stranding events

Activity B: Participate in the regional sea otter stranding network.

Strategy ECO9: ECOSYSTEM PROCESSES

Collaborate in ongoing efforts by the NOAA Northwest Fisheries Science Center and others to develop and apply a comprehensive ecosystem model that identifies indicator species, trophic networks, and physical-biological coupling.

Activity A: Evaluate indicator species identified by and currently used by OCNMS and regional co-managers (i.e., routine monitoring, 2008 OCNMS Condition Report).

- Base this evaluation on an established or tested framework for selection of indicator species for ecosystem status assessment.
- Consult with co-managers and ecosystem model experts.
- Consider trophic networks and physical-biological coupling.
- Incorporate traditional ecosystem knowledge, as appropriate.
- Develop a formal report to summarize this evaluation.
- Include recommendations for a revised set of indicator or sentinel species for which monitoring can be conducted or encouraged by OCNMS.

Activity B: Based on the revised set of indicator species (developed in Activity A), evaluate OCNMS' research and monitoring priorities, and recommend changes, if appropriate.

Activity C: Use defined indicators to evaluate ecosystem status and trends, and include this information in the next OCNMS Condition Report and provide it to ecosystem modelers.

Activity D: Summarize the removal histories and biological metrics (length, weight, or age compositions) for indicator species.

Links to other Action Plans: Habitat Mapping and Classification, Physical and Chemical Oceanography, Data Management, Sharing and Reporting, Collaborative and Coordinated Sanctuary Management, Habitat Protection

Key Partners: NOAA (NMFS, NOS, PMEL, NWFSC), USFWS, ONP, USGS, USCG, MMS, U.S. Navy, OSU/PISCO, DFO, MARINE Washington Departments of Fish and Wildlife, Ecology, and Natural Resources, Olympic Coast Intergovernmental Policy Council, OCNMS Advisory Council, Makah, Quileute and Hoh tribes, Quinault Indian Nation, Northwest Marine Mammal Stranding Network, West Coast Governors' Agreement on Ocean Health Ecosystem Indicators Action Coordination Team, Washington State Ocean Caucus, Puget Sound Partnership, REEF, COASST, Grays Harbor and North Pacific Coast marine resources committees, NGOs, Juan de Fuca International Marine Conservation Initiative, universities and colleges, coastal communities, international entities

B4. Data Management, Sharing and Reporting Action Plan

Desired Outcome: Improved awareness of the status of OCNMS resources and the sanctuary's overall ecological health.

Links to Goals:

Goal C - Investigate and enhance the understanding of ecosystem processes, and inform ecosystem-based management efforts, through scientific research, monitoring, and characterization.

Background:

The importance of analyzing and sharing data collected by OCNMS in a timely manner has been emphasized throughout the MPR process. Because data management, sharing and reporting is a topic relevant to all research, assessment and monitoring strategies and activities, it was decided to consolidate a concise set of data management strategies into one action plan.

Processing, analyzing and reporting OCNMS data collection efforts in a timely manner, has been a real challenge for OCNMS staff in recent years, particularly given decreasing resources to support this work. Often times, OCNMS receives funding to conduct research projects, but not the funding to support data processing and analysis after the fact. OCNMS' ability to manage, share and report the data it collects directly affects its ability to support an ecosystem-based management framework and the ability of OCNMS partners to make informed management decisions. Thus, the goal of this action plan is to guide OCNMS in improving its data management, sharing and reporting efforts for the benefit of OCNMS and all its partners.

Strategy DAT1: DATA QUALITY CONTROL AND MANAGEMENT

Develop and promote data management procedures.

Activity A: Develop a data management plan outlining OCNMS' entire data management process. The data management plan should define quality control, data documentation, data collection, data processing, and data management (metadata) methods.

Activity B: Encourage, and when OCNMS has authority ensure, the use of federal guidelines for data reporting (e.g., as promoted by the Biological and Chemical Oceanography Data Management Office) for research in the sanctuary.

Strategy DAT2: DATA DISTRIBUTION

Provide easy and timely access to data collected or managed by OCNMS.

Activity A: For data collected and managed by OCNMS, ensure timely and wide distribution of data, as data management procedures allow.

- Focus on releasing data collected in the past.
- Make new data available in a timely manner (i.e., as it is processed).
- Provide annual summaries of OCNMS data products.

Activity B: Encourage access to data, data derivatives, and data summaries through widely-used and appropriate web-based data portals.

- Collaborate with partners who collect data in the sanctuary to identify common databases, data fields, etc. and to develop standardized databases to facilitate data retrieval, when feasible or practical
- Participate in West Coast Observing System efforts related to metadata development
- Upload data to the NOAA Coastal Data Development Center (NCDDC) web site for public access

Activity C: Provide links on the OCNMS web site to data portals that host OCNMS data and notify regional natural resource managers of these portals.

Activity D: Provide data managed by OCNMS to collaborators for their reports and summaries, and assist collaborators with the development of reporting products.

Strategy DAT3: ADAPTIVE MANAGEMENT

Periodically evaluate data collection efforts by OCNMS to ensure that data are useful to OCNMS and other marine resource managers and that data needs are clear to staff and other researchers.

Activity A: Solicit the AC's and IPC's assistance in developing recommendations for periodically assessing and updating OCNMS research activities and priorities based upon evolving scientific information and management needs, through the establishment of an AC working group or other available means.

Activity B: Continue to periodically hold workshops or other similar forums to engage researchers (academic and otherwise) in discussions of methodologies and research questions best suited to meet the needs of OCNMS and other regional marine resource managers.

Strategy DAT4: CONDITION REPORT

Publish a Condition Report on the sanctuary at a regular frequency, at a minimum prior to the next management plan review process.

Links to other Action Plans: Collaborative and Coordinated Sanctuary Management, Habitat Mapping and Classification, Physical and Chemical Oceanography, Populations, Communities and Ecosystems, Climate Change, Regional Ocean Planning

Key Partners: NOAA (NMFS, NOS), USFWS, USGS, ONP, Washington Departments of Fish and Wildlife, Ecology, and Natural Resources, IPC, Makah, Quileute and Hoh tribes, Quinault Indian Nation, NANOOS, USFWS, Washington State Seafloor Mapping Consortium, OCNMS Advisory Council, NGOs, universities and colleges

C. Improve Ocean Literacy

C1. K-12 Education Action Plan

C2. Higher Education Action Plan

C3. Visitor Services Action Plan

C4. Community Outreach Action Plan



Introduction

Enhancing the public's awareness and appreciation of natural and cultural resources is a cornerstone of OCNMS' mission, which follows directly from mandates of the NMSA. Over the next five to ten years, OCNMS, in partnership with the Coastal Treaty Tribes, non-tribal coastal communities, National Park Service, Seattle Aquarium, Feiro Marine Life Center, Ocean Shores Interpretive Center, E3 Washington, and others, proposes to continue and expand existing – and develop new – education and outreach programs around the concept of Ocean Literacy.

Ocean Literacy, broadly defined, is an enduring understanding of the ocean's influence on people and people's influence on the ocean in a manner encouraging lifelong attitudes of ocean resource stewardship and personal commitment. In addition to conveying information about the sanctuary's marine organisms, habitats and ecosystems, OCNMS' Ocean Literacy program will work collaboratively to convey information about:

- Tribal culture and traditions, as well as treaty making and implementation
- Climate change and ocean acidification
- Cultural uses and socioeconomic values of sanctuary resources
- Ocean management and policy frameworks, such as ecosystem-based management
- Ocean stewardship

Each action plan in this grouping addresses a different sector of the public served by OCNMS programs: K-12 students, post-secondary students, local communities and visitors (including the general public outside the sanctuary region).

C1. K-12 Education Action Plan

Desired Outcomes: 1) Improved understanding by teachers and students of Ocean Literacy principles and the ocean's importance; and 2) K-12 students in the sanctuary region are better prepared to enter careers that require an understanding of Ocean Literacy.

Links to Goals:

Goal D - Enhance Ocean Literacy, promote awareness of the sanctuary and foster a sense of ocean stewardship through outreach, education, and interpretation efforts.

Background:

Engaging K-12 students and teachers in experiential education programs focused on the Olympic Coast marine environment is key to improving Ocean Literacy and fostering a lifelong respect for and understanding of the Olympic Coast and ocean ecosystems in general. The outer coast of the Olympic Peninsula is a remote and economically depressed region and the K-12 schools in the area do not have access to the resources necessary to provide students with hands-on marine science education.

OCNMS is one of a very few organizations on the Olympic Peninsula with staff expertise in both marine science and environmental education and thus it is crucial that OCNMS maintain and build upon its K-12 Ocean Literacy programs. OCNMS' collaborative K-12 Ocean Literacy programs have been incredibly successful and OCNMS receives more requests for programs than can be accommodated. Local schools are depending upon OCNMS to provide marine science and education programs, and OCNMS has both a strong obligation and interest in providing local students with hands-on opportunities to learn about the sanctuary.

Strategy ED1: K-12 PARTNERSHIPS

Work in partnership with regional education organizations in order to leverage resources for K-12 Ocean Literacy programs.

Activity A: Collaborate with partners, including recipients of NOAA funding (e.g., B-WET grants), to maximize the effectiveness of NOAA resources and promote the NOAA Strategic Education Plan.

Activity B: Promote education opportunities that bring NOAA science and education resources to educators and students in the region. These opportunities include, but are not limited to: Teacher At Sea, Get to Know NOAA, various data visualization products, and distance learning.

Activity C: Work directly with classroom teachers to integrate OCNMS and other Ocean Literacy programs into existing school curricula.

Activity D: Promote the Ocean Literacy goals and strategies in the West Coast Governors' Agreement on Ocean Health (which include incorporating Ocean Literacy into Washington State Learning Goals Standards).

Strategy ED2: PLACE-BASED EDUCATION

Work collaboratively with rural schools and tribal communities adjacent to the sanctuary and within the sanctuary region to develop place-based education opportunities for K-12 students.

Activity A: Work with school districts, tribal partners, home-school organizations in local communities, non-profit and other education organizations to design and implement program curricula to 1) meet education standards, 2) fulfill needs identified by regional educators and, 3) emphasize place-based and hands-on learning.

Activity B: Work with local area high schools to develop senior culminating projects that involve students in OCNMS programs, and engage the Pacific Education Institute in training OCNMS staff to be student mentors.

Activity C: Collaborate with local schools to develop student citizen science projects in and adjacent to the sanctuary (e.g. beach clean-ups).

Activity D: Develop summer youth programs and/or curricula to support summer youth programs.

Strategy ED3: REGIONAL INITIATIVES

Participate actively in relevant regional education organizations and initiatives.

Activity A: To the greatest extent feasible, participate in meetings, conferences and projects of the Pacific Education Institute, E3 Washington, the Northwest Aquatic and Marine Educators, the Environmental Education Association of Washington and the Washington Science Teachers Association.

Activity B: Work to promote regional environmental education initiatives in the sanctuary region (e.g., “no child left inside”).

Strategy ED4: TECHNOLOGY

Employ current and emerging technologies in order to make Ocean Literacy information and curricula more accessible and provide students with a richer educational experience.

Activity A: Enhance OCNMS website to be a source of Ocean Literacy information such as NOAA-authored educational/curriculum materials and news articles on ocean issues.

Activity B: Develop the capacity for high-quality video conferencing to enhance collaboration with partners and deliver education programming to geographically remote audiences.

Activity C: Work cooperatively with other sanctuaries, the Office of National Marine Sanctuaries and the National Estuarine Research Reserves to bring into classrooms live, interactive educational programs that utilize telepresence.

Links to Other Action Plans: Collaborative and Coordinated Sanctuary Management, Climate Change, Marine Debris, Wildlife Disturbance, Higher Education

Key Partners: Makah, Quileute and Hoh Tribes and the Quinault Indian Nation, Olympic Coast Intergovernmental Policy Council, Seattle Aquarium, Olympic Park Institute, Olympic National Park, North Pacific Coast and Grays Harbor marine resources committees, Feiro Marine Life

Center, Port Townsend Marine Science Center, Port Angeles School District, Quillayute Valley School District, North Beach School District, Cape Flattery School District, Sequim School District, Quileute Tribal School, local home school organizations, University of Washington Olympic Natural Resources Center, West Coast Governors' Agreement on Ocean Health Ocean Awareness and Literacy Action Coordination Team, Washington State Ocean Caucus, Washington Sea Grant, North Olympic Skills Center, the Pacific Education Institute, Grays Harbor Historical Seaport Authority, Northwest Aquatic and Marine Educators, Environmental Education Association of Washington, Washington Science Teachers Association, Makah Cultural and Research Center, National Park Service Research Learning Centers, Office of National Marine Sanctuaries, other sanctuaries

C2. Higher Education Action Plan

Desired Outcomes: 1) OCNMS becomes a catalyst for higher education opportunities in marine fields; and 2) post-secondary students in the sanctuary region have greater access to career-building opportunities in ocean research, education, policy and management

Links to Goals:

Goal D - Enhance Ocean Literacy, promote awareness of the sanctuary and foster a sense of ocean stewardship through outreach, education, and interpretation efforts.

Background:

Coastal rural and American Indian communities face a paradoxical challenge: they depend increasingly on science-based natural resource management in order to sustain resources and economies, yet lack of educational funding, opportunities, expertise and conflicting social problems create overwhelming educational challenges. Opportunities to learn basic and applied science and job skills in these communities are limited, and pathways to careers and success are not evident. In addition, connections between vocational, college and graduate students, and working experts are poorly defined.

OCNMS is in a unique position to show leadership in the region in promoting career-building opportunities in marine sciences, education, management and policy. The aim of this action plan is to identify ways in which OCNMS can collaborate with universities, colleges and community colleges to improve higher educational opportunities for students and encourage students to pursue ocean and marine-related fields.

Strategy HED1: INTERNSHIP DEVELOPMENT

Coordinate internship activities between local colleges, universities, community colleges and OCNMS to create learning opportunities within the areas of sanctuary operations, research, education and management.

Activity A: Formalize an OCNMS internship coordinator staff role.

Activity B: Develop appropriate guidelines for academic elements of OCNMS internships.

Activity C: Establish an OCNMS summer internship program for undergraduates and Running Start students (<http://www.k12.wa.us/runningstart/default.aspx>) and advertise this program locally.

Strategy HED2: VOLUNTEER POSITIONS

Develop the necessary agreements and advertising instruments to recruit and utilize AmeriCorps and/or Student Conservation Association volunteer positions at OCNMS.

Strategy HED3: COLLEGE PARTNERSHIPS

Build partnerships with regional colleges, universities, foundations and other institutions in order to increase educational opportunities in ocean science, education, policy and management fields.

Activity A: Participate in local career days and job fairs.

Activity B: Develop opportunities with local colleges to provide OCNMS staff and other experts as lecturers, presenters and/or adjunct faculty.

Activity C: Develop continuing education programs on ocean issues and explore opportunities for developing consortia between local colleges, Coastal Treaty Tribes, agencies and non-profits.

Activity D: Develop opportunities for students to be involved in marine research – in person or via high-quality video conferencing with research vessels or stations.

Activity E: Provide continuing education opportunities for teachers to receive academic credit and gain experience in order to enhance their understanding of marine science content areas and methods for hands-on science education.

Activity F: Work collaboratively with foundations, local colleges and universities, tribal communities and other agencies to develop college scholarship funds for students from the Coastal Treaty Tribes who are interested in pursuing college degrees in marine policy, science, conservation, education and other related fields.

Links to Other Action Plans: Collaborative and Coordinated Sanctuary Management, Community Involvement in Sanctuary Management, Sanctuary Operations, Climate Change

Key Partners: Peninsula College, WWU Huxley Program on the Peninsula, Grays Harbor College, the University of Washington Olympic Natural Resources Center, North Olympic Skills Center, Olympic National Park, Olympic Park Institute, North Pacific Marine Resources Committee, Grays Harbor Marine Resources Committee, Makah, Quileute and Hoh Tribes and the Quinault Indian Nation, Olympic Coast Intergovernmental Policy Council, Seattle Aquarium, Olympic Park Institute, Feiro Marine Life Center, West Coast Governors' Agreement on Ocean Health Ocean Awareness and Literacy Action Coordination Team, Washington Sea Grant, Office of National Marine Sanctuaries, AmeriCorps, American Indian College Fund (and other foundations), Makah Cultural and Research Center, National Park Service Research Learning Centers, Office of National Marine Sanctuaries, Seattle Aquarium, other sanctuaries

C3. Visitor Services Action Plan

Desired Outcomes: 1) Improved awareness of OCNMS; 2) increased visitor awareness of ocean issues; and 3) an enriched and extended coastal travel experience.

Links to Goals:

Goal D - Enhance Ocean Literacy, promote awareness of the sanctuary and foster a sense of ocean stewardship through outreach, education, and interpretation efforts.

Goal G - Facilitate wise and sustainable use in the sanctuary to the extent that such uses are compatible with resource protection.

Background:

Improving the general public's awareness of OCNMS, providing planning assistance and information to Olympic Coast visitors, providing high-quality educational experiences to visitors, encouraging visitors to the sanctuary to become better ocean stewards, and working with local communities to encourage sustainable tourism in the sanctuary region are all important aspects of OCNMS' visitor services program.

OCNMS' current visitor services program is relatively small and the public scoping process made it clear, the public would like to see a more robust OCNMS visitor services program. In recent years, funding for OCNMS visitor services activities has been drastically reduced. Thus, the goal of this action plan is to outline a series of strategies to guide development of OCNMS' visitor services program as resources become available. The action plan focuses on both using new technology (social networking, podcasts, interactive website tools, etc.) to disseminate information about OCNMS to a wider audience and working with partners to leverage limited resources.

Strategy VISIT1: VISITOR EXPERIENCE

Actively collaborate with other agencies, tribal governments, tourism organizations and the private sector to provide services and products that contribute to high-quality educational experiences for visitors to the Olympic Peninsula.

Activity A: Develop education and outreach materials, in a variety of media, to attract visitors, orient them to the region's amenities, educate them on resources in the sanctuary and inspire a sense of stewardship for the environment.

Activity B: Participate in regional forums and planning processes that contribute to a strong tourism economy for the Olympic Peninsula.

Activity C: Offer technical assistance and training to partners and businesses that serve and educate visitors.

Activity D: Provide funding, training and support to cooperative interpretation programs with OCNMS partners.

Activity E: Expand efforts to develop interpretation programs on the Makah, Quileute, Hoh and Quinault Indian reservations as a way of developing program capacity, tourism enterprise, and training and job opportunities for tribal members.

Strategy VISIT2: LONG-RANGE INTERPRETIVE PLAN

Develop and implement a Long-Range Interpretive Plan for OCNMS.

Activity A: Actively involve partners and stakeholders in Long-Range Interpretive Plan development.

Activity B: Work collaboratively to identify opportunities to develop additional visitor centers, wayside exhibits, informational signs, kiosks and aquarium/museum exhibits in the sanctuary region.

Activity C: Work collaboratively to ensure the Long-Range Interpretive Plan reflects the region's specific needs as they relate to visitor service infrastructure development.

Activity D: Coordinate with other sanctuaries in the West Coast Region also developing interpretive plans.

Activity E: Include in the Long-Range Interpretive Plan specific strategies to enhance effectiveness of the Olympic Coast Discovery Center (OCDC). These strategies should identify ways to: recruit, train and retain volunteers; coordinate and collaborate with the Feiro Marine Life Center and Olympic National Park as they develop a larger and more expansive coastal visitor and education center in Port Angeles; maintain and update existing exhibits; attract new visitors; and increase development and enrichment activities for staff and volunteers.

Strategy VISIT3: NEW TECHNOLOGY

Utilize current and emerging technologies in order to educate and inform physical and virtual visitors to the Olympic Coast.

Activity A: Complete an update and overhaul of the OCNMS website.

Activity B: Integrate other appropriate technologies, as feasible, into the website including social networking resources, smartphone applications, podcasts, webcasts of video etc.

Activity C: Update facilities, hardware and software to accommodate telepresence so visitors to sanctuary and partner facilities can be linked to research vessels, other education centers etc.

Links to Other Action Plans: Climate Change, Marine Debris, Wildlife Disturbance, Maritime Heritage, Collaborative and Coordinated Sanctuary Management

Key Partners: Makah, Quileute and Hoh Tribes and the Quinault Indian Nation, Olympic Coast Intergovernmental Policy Council, Makah Cultural and Research Center, Olympic National Park, Feiro Marine Life Center, Port Townsend Marine Science Center, Port Angeles School District, Ocean Shores Interpretive Center, Grays Harbor Historical Seaport Authority, OCDC volunteers, the communities of Port Angeles, Sequim, Neah Bay, La Push, Forks, Hoh River, Taholah, Ocean Shores, Westport and Pacific Beach, Makah Cultural and Research Center, Aramark/Kalaloch Lodge, West Coast Governors' Agreement on Ocean Health Ocean Awareness and Literacy Action Coordination Team, National Park Service Research Learning Centers, Office of National Marine Sanctuaries, Seattle Aquarium, other sanctuaries

C4. Community Outreach Action Plan

Desired Outcomes: 1) Greater involvement of local communities in OCNMS programs and on-the-ground marine conservation efforts; and 2) a stronger connection between local communities and OCNMS.

Links to Goals:

Goal D - Enhance Ocean Literacy, promote awareness of the sanctuary and foster a sense of ocean stewardship through outreach, education, and interpretation efforts.

Goal H - Build, maintain, and enhance an operational capability and infrastructure.

Background:

Effective community outreach is critical to the success of all OCNMS programs; and the need to improve OCNMS' relationships with local communities on the Olympic Peninsula has repeatedly emerged as a high priority during the MPR process. The Community Involvement in Sanctuary Management action plan, presented earlier in the FMP, addresses ways in which OCNMS can facilitate more community involvement in OCNMS management and decision-making. The Community Outreach action plan focuses more on involving local citizens in specific OCNMS volunteer programs and improving OCNMS staff presence on the outer coast so that local communities develop a stronger connection with staff. While the Community Outreach action plan is housed within the "Improve Ocean Literacy" priority issue, the action plan has been written broadly so it supports action plans related to research, living resources conservation and other program areas.

Strategy OUT1: STEWARDSHIP AND CITIZEN SCIENCE

Actively support marine stewardship and citizen science volunteer programs.

Activity A: Provide training and staff support to OCNMS volunteers involved with the Coastal Observation and Seabird Survey Team, Washington CoastSavers, and other volunteer programs in the sanctuary.

Activity B: Support efforts of the North Pacific Coast and Grays Harbor marine resources committees to develop citizen science and marine stewardship efforts in the sanctuary.

Activity C: Use traditional media and new technologies to advertise opportunities for community members to volunteer on OCNMS education and research projects.

Strategy OUT2: STAFF PRESENCE ON OUTER COAST

Assess needs and opportunities to develop a stronger OCNMS staff presence on the outer coast of the Olympic Peninsula.

Activity A: Work with sanctuary partners who have existing facilities on the outer coast to explore office-sharing opportunities.

Activity B: Conduct feasibility and cost analyses of a "South Coast" satellite office in Grays Harbor County and a "West End" satellite office in Forks.

Activity C: Evaluate opportunities for "storefronts" and/or visitor information centers in coastal communities.

Strategy OUT3: COMMUNITY EVENTS

Maintain an OCNMS staff presence at community events and meetings in the sanctuary region.

Activity A: Develop an annual outreach plan including priorities for community events, staffing and volunteers, as well as priority themes and messages.

Activity B: Attend (as invited) events, festivals and meetings in tribal and non-tribal communities in the sanctuary region.

Activity C: Provide regular briefings to service clubs, local governments, chambers of commerce, tourism organizations, stakeholder groups and others on matters pertaining to the sanctuary.

Activity D: Furnish expert speakers for public lecture series, community meetings and other forums in order to provide up-to-date information on sanctuary research, education, policies and management activities.

Strategy OUT4: COMMUNITY-BASED EFFORTS

Actively support the efforts of the North Pacific and Grays Harbor marine resources committees, regional watershed councils, salmon recovery teams, the Puget Sound Partnership, other community-based NGOs, and local and state governments in areas of marine research, education, and policy coordination.

Activity A: Participate in relevant meetings of community-based organizations and initiatives in the sanctuary region.

Activity B: Jointly pursue opportunities for community-based marine education, stewardship and research programs.

Activity C: Use the OCNMS website, e-mail listserv and other media to communicate the efforts of community-based organizations working on ocean issues in the sanctuary region.

Links to Other Action Plans: Community Involvement in Sanctuary Management, Maritime Heritage, Populations, Communities and Ecosystems, Climate Change, Marine Debris, Regional Ocean Planning, Collaborative and Coordinated Sanctuary Management

Key Partners: COASST, Washington CoastSavers, Washington Clean Coast Alliance, Makah, Quileute and Hoh Tribes and the Quinalt Indian Nation, Olympic Coast Intergovernmental Policy Council, Makah Cultural and Research Center, Feiro Marine Life Center, Port Townsend Marine Science Center, Olympic National Park, Grays Harbor and North Pacific Coast marine resources committees, Grays Harbor Historical Seaport Authority, National Coast Trail Association, Puget Sound Partnership, West Coast Governors' Agreement on Ocean Health Ocean Awareness and Literacy Action Coordination Team, Washington State Ocean Caucus, Washington Sea Grant, Clallam, Jefferson and Grays Harbor counties, state of Washington, local organizations such as Rotary and Lions Clubs, Surfrider Foundation chapters, local kayaking groups and others

D. Conserve Natural Resources in the Sanctuary

D1. Spills Prevention, Preparedness, Response and Restoration Action Plan

D2. Climate Change Action Plan

D3. Marine Debris Action Plan

D4. Wildlife Disturbance Action Plan

D5. Water Quality Protection Action Plan

D6. Habitat Protection Action Plan

D7. Regional Ocean Planning Action Plan



Introduction

The primary mandate of the Office of National Marine Sanctuaries is to protect sanctuary resources. Therefore, it is OCNMS' responsibility to reduce threats to sanctuary resource sustainability and condition. OCNMS also has a responsibility to facilitate compatible uses in the sanctuary in a manner that 1) is consistent with its treaty trust responsibilities, 2) promotes healthy and resilient natural resources, and 3) allows human uses to continue in a sustainable way. The seven action plans presented here highlight the primary resource conservation concerns that emerged from the MPR scoping process and the Living Resources Conservation working group that was formed as part of the MPR process. In many cases, the action plans indicate further assessment of potential impacts to resources in the sanctuary is needed in order to determine if there is a need for additional management measures.

D1. Spills Prevention, Preparedness, Response and Restoration Action Plan

Desired Outcomes: 1) Increased protection of marine, cultural, and shoreline resources from the impacts of an oil or hazardous materials spill; and 2) improved preparedness and coordination for responding to spills affecting marine resources within OCNMS.

Links to Goals:

Goal A - Build and strengthen OCNMS' partnerships with the Coastal Treaty Tribes and the Olympic Coast Intergovernmental Policy Council, and honor the sanctuary's treaty trust responsibility.

Goal B - Promote collaborative and coordinated management and stewardship of resources in the sanctuary.

Goal E - Maintain the sanctuary's natural biological diversity and protect, and where appropriate, restore and enhance sanctuary ecosystems.

Goal G - Facilitate wise and sustainable use in the sanctuary to the extent that such uses are compatible with resource protection.

Background:

The potential release of oil or other hazardous material from a marine accident is widely seen as the greatest threat to sanctuary resources and qualities. Prevention of spills is therefore one of the sanctuary's highest priorities. As a steward of these vitally important natural resources, OCNMS must continue to collaborate with other agencies and user groups to reduce the potential for oil spills and improve contingency planning for spill response.

Preventing, preparing for, and responding to hazardous spills continue to be high priorities for OCNMS. Additionally, better support for the damage assessment and restoration process is also a high priority. During the MPR process a spills working group was formed to bring together area experts to discuss OCNMS' role in regional spills prevention, preparedness, response and restoration efforts. The strategies and activities below reflect the recommendations of this working group.

Strategy SPILL1: ATBA MANAGEMENT, COMPLIANCE AND MONITORING

Sustain or improve the maritime industry's compliance with the Area to be Avoided (ATBA).

Activity A: Work with the USCG to prepare a proposal to the International Maritime Organization Subcommittee on Safety to Navigation to implement legislation requiring that voluntary "restrictions apply to all vessels required to prepare a response plan pursuant to Section 311(j) of the Federal Water Pollution Control Act (33 U.S.C. 1321(j)) (other than fishing or research vessels while engaged in fishing or research within the area to be avoided)" (Section 704, Coast Guard Authorization Act for Fiscal Years 2010 and 2011).

Activity B: Monitor voluntary compliance with the ATBA by conducting monthly processing of radar data from the jointly operated Canada/U. S. Cooperative Vessel Traffic Service (CVTS), augmented with Marine Exchange of Puget Sound Automated Identification System (AIS) data. Analyze vessel traffic patterns, track and identify the type and status of vessels that travel within OCNMS and the ATBA. Archive data to be able to identify trends in activity.

Activity C: Improve the OCNMS vessel monitoring program by developing the capability to view, analyze and archive vessel data within the entire sanctuary using AIS data.

Activity D: Conduct directed outreach to non-compliant vessels. Send letters jointly signed by the OCNMS Superintendent and U.S. Coast Guard Captain of the Port requesting compliance with the ATBA.

Activity E: Promote and facilitate reporting of ATBA compliance statistics and analysis to vessel traffic and oil spill prevention interests. This includes providing compliance data to Washington Department of Ecology (WDE) for inclusion within their annual Vessel Entry and Transit (VEAT) Report.

Activity F: Make ATBA compliance information available to regional marine spatial planning efforts and to the public.

Strategy SPILL2: REGIONAL VESSEL MANAGEMENT FORUMS

Work within regional vessel management forums to analyze and reduce risks and hazards.

Activity A: Encourage and collaborate in review and development of Standards of Care (SOC) identifying accepted best marine practices for engaging in coastal towing operations off the Olympic Coast. Actively participate in local public meetings and comment on the USCG's proposed towing vessel inspection regulations with the goal of encouraging the earliest implementation of appropriate final rules.

Activity B: After SOCs are developed, utilize ATBA monitoring information to advise the USCG and industry of apparent non-compliance with developed SOCs.

Activity C: Encourage the USCG, in collaboration with the U.S. Army Corps of Engineers (USACE) vessel traffic risk assessment, to analyze vessel traffic patterns and risks, particularly in the vicinity of Duntze Rock, Tatoosh Island, and Duncan Rock, and to determine whether additional protective measures (e.g., additional aids to navigation or new routing schemes) are required for safer navigation.

Strategy SPILL3: REGIONAL PLANNING AND TRAINING EXERCISES

Promote improved spill preparedness and response through OCNMS participation in training exercises and regional oil spill planning activities.

Activity A: Engage in regional efforts to promote, plan and conduct comprehensive drills and exercises.

- Promote regular testing and coordination of multiple response assets, equipment deployment, wildlife recovery and treatment equipment, emergency response tug located at Neah Bay, USCG emergency towing resources, communication systems, and natural resource damage assessment resources in these drills and exercises.
- Integrate OCNMS assets, including staff and vessels, into regional emergency response drills, exercises, and area contingency planning.

Activity B: Develop training/exercises, in conjunction with key partners, that target specific issues and concerns relevant to OCNMS and partners to improve planning and overall readiness.

- Training and exercise topics could include roles and responsibilities of various Incident Command System positions; dispersant consultation process; waste management tradeoffs; shoreline cleanup assessment technology training; shoreline treatment tactics; cleanup endpoints for different shoreline types; natural resource damage assessment; liaison function with key stakeholders; lessons learned from recent spills and exercises

Activity C: Collaborate in planning and conduct, if feasible, an exercise to test debris removal from remote shoreline locations.

- Test and evaluate issues and methods useful for pre-cleaning beaches and removing oily waste materials during response operations.
- If successful, promote regular exercise of safe and effective methods.
- Partner on debris removal projects with USCG and outer Olympic Coast land owners (Olympic National Park, Washington Maritime National Wildlife Refuge Complex, Coastal Treaty Tribes).

Activity D: Participate in technical workgroups and task forces of the Regional Response Team (RRT) and Northwest Area Committee (NWAC).

- Support integration of OCNMS priorities, data, and equipment into the Northwest Area Contingency Plan.
- Key workgroups and task forces include Volunteers; Response Science and Technology; Geographical Response Plans; Wildlife; and Communications and Outreach (separate activities for key NWAC workgroups are provided below).

Activity E: Assist in the review, development and improvement of Geographic Response Plans (GRPs) of the NWAC focusing on initial resource protection.

- Potential areas for GRP improvement include protection of cultural resources and threatened and endangered species, equipment appropriate for the operating environment, and additional shoreline protection strategies.

Activity F: Participate in the Response Science and Technology workgroup of the NWAC to develop a Shoreline Operational Guide.

- The Shoreline Operational Guide will address treatment tactics and cleanup endpoints for affected shorelines, proposed monitoring and other requirements for sensitive resources or habitats, and waste management guidelines.
- Promote integration of this Guide and its development into the Area Committee process.

Activity G: Participate in the Response Science and Technology workgroup of the NWAC to develop a dispersant use matrix that summarizes spatial and temporal data related to natural resources in the water column that could potentially be impacted by dispersed oil.

- Provide data held by OCNMS.
- Facilitate assembly and incorporation of data from NMFS.

Activity H: Support NWAC efforts to promote a strong non-dedicated vessel program including use of local resources, including fishing vessels regularly based in Neah Bay, La Push, and the Grays Harbor area.

Activity I: Participate in the Places of Refuge workgroup of the NWAC in the evaluation of areas adjacent to OCNMS.

Activity J: Support development of a digital environmental sensitivity index database and maps of Washington's outer Olympic Coast.

Activity K: Participate in US/Canada transboundary spill response planning through the Pacific States/British Columbia Oil Spill Task Force.

Strategy SPILL4: OUTER COAST TRUSTEES WORKING GROUP

Promote improved regional preparedness for spill response through coordination of an ad hoc Outer Coast Trustees working group (state of Washington, Coastal Treaty Tribes, local governments, National Park Service, U.S. Fish and Wildlife Service, Parks Canada) as a forum to share information and training opportunities.

Activity A: Maintain a current contact list for natural and cultural resource trustees, natural resource managers, and spill response leads from agencies and organizations on the outer coast of Washington.

- Include multiple means of communication (office and cell phone numbers, emails, agency emergency contact numbers, pagers) on contact list.
- Coordinate with RRT to regularly update the Northwest Area Contingency Plan.

Activity B: Identify opportunities for joint training and information sharing related to regional preparedness for spill response, and promote regional participation through the Outer Coast Trustees.

Activity C: Identify emergency response plans developed by co-trustees and collaborate with co-trustees to minimize inconsistencies and maximize the effectiveness of these plans.

Strategy SPILL5: OCNMS ORGANIZATIONAL RESPONSE PLAN

Develop policies, tools and procedures for OCNMS staff and resource mobilization, OCNMS integration into an Incident Command Structure, and effective consultation on emergency response actions.

Activity A: Develop an OCNMS Organizational Response Plan.

- Ensure consistency between the OCNMS Organizational Response Plan and Northwest Area Contingency Plan (NWACP).
- Integrate OCNMS information, policy and procedures into the NWACP, as appropriate.
- Identify OCNMS staff training requirements and needs for emergency response, and maintain appropriate training levels.
- As part of the plan, consider an outreach policy that explains how OCNMS will liaison with key stakeholders, the public, elected officials and co-trustees within their shared boundaries during spill responses.
- Develop a clear process or decision tool to identify steps for dispersant, in-situ burn, or shoreline chemical use decision-making by OCNMS to support consultation with co-trustees, the FOSC, and the RRT consistent with the NWACP.

- Identify training opportunities for OCNMS volunteers to improve their ability to participate in spill response.

Activity B: Develop a database that includes natural and cultural resource information useful for shoreline protection countermeasures, as well as evaluation of potential resource impacts from spilled petroleum products and associated response activities.

- Assemble the most current and detailed data available for the region.
- Utilize effective technologies to access, display and analyze resource information.
- Collaborate with regional resource managers, co-trustees, response organizations and the RRT to share data, tools, and products.
- Regularly complete updates and improvements to these data and tools.

Activity C: Work with the Office of National Marine Sanctuaries and NOAA Office of Response and Restoration to regularly update and improve SHIELDS (Sanctuary Hazardous Incident Emergency Logistics Database System).

Strategy SPILL6: DAMAGE SURVEY AND ASSESSMENT PROTOCOLS

Collaborate in regional efforts to develop plans, protocols, capacity and baseline data to support natural resource damage assessment (NRDA) efforts.

Activity A: Collaborate with co-trustees of resources in the sanctuary to develop an Outer Coast NRDA Response Plan that includes:

- Notification requirements
- Prioritized objectives
- Supplies and equipment for ephemeral data collection
- Standardized protocols for ephemeral data collection
- Identification of beach access points
- Property access permissions
- Cultural resource considerations and points of contact
- Lists of response resources (vessels, aircraft, personnel) that could be hired for NRDA purposes (vs. spill response clean-up efforts)
- Data quality objectives
- Training recommendations and requirements

Activity B: Collaborate with co-trustees to improve capabilities for NRDA work.

- Integrate NRDA components into local and regional response exercises.
- Seek funding to support participation in NRDA planning and training opportunities.
- Review and revise response plans, as appropriate, following incidents that include NRDA efforts.
- Inventory, purchase, place, and maintain ephemeral data collection equipment on the outer coast.

Activity C: Collaborate with co-trustees to identify natural and cultural resources most vulnerable to oil spills and prioritize baseline data collection for species and services useful for NRDA.

- Outline needed data and studies.

- Assemble existing data into a database for baseline information on natural and cultural resources.
- Determine who can conduct additional studies and sampling.
- Seek funding to support baseline data collection.

Activity D: Participate in any restoration projects, should they occur, within sanctuary boundaries or directly affecting the sanctuary through phases of planning, implementation, and monitoring. Coordinate with other trustees with responsibilities for affected resources and provide data and input to support decision-making.

Links to other Action Plans: Collaborative and Coordinated Sanctuary Management, Marine Debris, Wildlife Disturbance, Sanctuary Operations, Regional Ocean Planning

Key Partners: USACE Seattle District; Puget Sound Harbor Safety Committee; Canadian Coast Guard Marine Communications and Traffic Services, Tofino; Marine Exchange of Puget Sound; Makah Office of Marine Affairs; Makah, Quileute and Hoh Tribes and Quinault Indian Nation; American Waterways Operators; U.S. Navy (for movement of reactor core by barge); Lower Columbia Region Harbor Safety Committee; United States Coast Guard Thirteenth District Commander; Sectors Puget Sound and Columbia River; Canadian Coast Guard Marine Communications and Traffic Services Tofino; Marine Exchange of Puget Sound; Washington Department of Ecology; Washington Department of Fish and Wildlife; Washington Department of Natural Resources, Washington Department of Archaeology and Historic Preservation; Washington State Parks and Recreation Commission; Washington Resource Damage Assessment Committee; marine resource committees (MRCs); other natural resource trustees; on-scene spill response organizations; NOAA Office of Response and Restoration; NOAA Restoration Center; Department of Interior NRDA staff; Canadian Coast Guard; Canadian First Nations; Transport Canada, Olympic National Park; Washington Maritime National Wildlife Refuge Complex/U.S. Fish and Wildlife Service; U.S. Coast Guard; Clallam, Jefferson, and Grays Harbor counties; Parks Canada; NMFS; Northwest Area Committee and Regional Response Team members; OCNMS volunteers; academic institutions

D2. Climate Change Action Plan

Desired Outcomes: 1) OCNMS is a sentinel site in the Pacific Northwest for climate change monitoring; 2) OCNMS is a go-to source for climate change information on Washington’s outer coast marine ecosystems; and 3) ONMS understands and is prepared for likely climate change impacts in the sanctuary region.

Links to Goals:

Goal C - Investigate and enhance the understanding of ecosystem processes, and inform ecosystem-based management efforts, through scientific research, monitoring, and characterization.

Goal E - Maintain the sanctuary’s natural biological diversity and protect, and where appropriate, restore and enhance sanctuary ecosystems.

Goal G - Facilitate wise and sustainable use the sanctuary to the extent that such uses are compatible with resource protection.

Goal H- Build, maintain, and enhance an operational capability and infrastructure.

Background:

The public repeatedly raised concerns about climate change and its potential effects on organisms and ecosystems within the sanctuary during the MPR scoping process. Additionally, the Olympic Coast Intergovernmental Policy Council (IPC) and the OCNMS Advisory Council (AC) identified climate change as a high priority to be addressed in the revised management plan.

Climate change is an ecosystem management issue cutting across all disciplines and will be addressed by all of OCNMS’ program areas over the next decade. Indeed, references to climate change can be found in strategies and activities throughout this management plan. Because climate change is expected to be such an important issue for the sanctuary, it was important to highlight the issue in its own action plan. Other action plans reference ways in which individual OCNMS programs will address aspects of the climate change topic, but this action plan is focused on how ONMS will coordinate its efforts across program areas in order to address climate change in a holistic and interdisciplinary way. This action plan also promotes OCNMS as a sentinel site for ocean acidification and climate change research. Sentinel sites are locations in the marine environment that support sustained observations of changes in the status of the marine environment. They allow investigators to track the status of key indicators of ecosystem integrity, serve as a means to provide early warning to resource managers, and offer opportunities for protocol testing. They address NOAA activities in areas of mandated responsibility and help address questions about regional issues such as habitat degradation and invasive species impacts.

Strategy CLIM1: CLIMATE-SMART SANCTUARY PROGRAM

Participate in the Office of National Marine Sanctuaries Climate-Smart Sanctuaries program in order to become certified as a climate-smart sanctuary.

Activity A: Conduct an audit of OCNMS’ carbon footprint and determine what changes are needed to ensure OCNMS meets the minimum green operating standards outlined in the Climate-Smart Sanctuary guidelines.

Activity B: Develop a Climate Change Site Scenario for OCNMS synthesizing the best available information on climate change impacts to present a picture of what the sanctuary might look like in 50 to 100 years.

Activity C: Work with the AC and IPC to review (and revise if necessary) this Climate Change Action Plan based upon the findings of the Climate Change Site Scenario.

Activity D: Brief the AC and IPC on OCNMS' Climate-Smart Sanctuary certification process, and ensure information compiled for Climate Smart Sanctuary certification is widely distributed to OCNMS partners and the public.

Strategy CLIM2: SANCTUARY AS SENTINEL SITE

Work to establish OCNMS as a sentinel site for long-term climate change research and monitoring in the Pacific Northwest.

Activity A: Propose to NOAA leadership that OCNMS be identified as a sentinel site for climate change research and monitoring.

Activity B: Work with the AC to establish a climate change working group to help 1) develop a climate change research prospectus describing specific climate change research priorities for the sanctuary, and 2) identify marine chemical, physical, and biological indicators of climate change that OCNMS and partners should consider monitoring.

Activity C: Provide relevant scientific and technical information to the Washington Department of Ecology to support the State's central climate change information clearinghouse and utilize this clearinghouse to support OCNMS research and planning efforts.

Strategy CLIM3: RESILIENT ECOSYSTEMS

Work with natural resource managers and local communities on the Olympic Peninsula to improve the resiliency of ecosystems in the face of climate change impacts.

Activity A: Work with the AC to establish a climate change working group to provide recommendations to ONMS, and to collaborate with tribal, federal, state and local governments on potential joint management responses to climate change impacts.

Activity B: Participate in the state of Washington's integrated climate change response strategy as well as in other regional efforts to develop and understand climate change impacts to natural and cultural resources.

Activity C: Host workshops and provide training for OCNMS staff and local communities on the outer coast on planning, mitigating for, and managing climate change impacts.

Strategy CLIM4: COMMUNICATING CLIMATE CHANGE

Communicate information about climate change and its potential effects on the sanctuary and Washington's outer coast to OCNMS partners and the public.

Activity A: Ensure information and data collected by OCNMS on climate change and its effects on the sanctuary are readily available to other resource managers and interested parties.

Activity B: Provide local communities and the public with information about potential climate change impacts on the Olympic Coast and local, tribal, state and regional efforts to plan for climate change.

Activity C: Work with tribal communities to develop public outreach materials that convey tribal perspectives on climate change and its potential effects on tribal communities.

Activity D: Promote education and outreach elements in climate change research projects that occur within OCNMS.

Activity E: Develop a Climate Literacy education and outreach plan and incorporate it into OCNMS' Ocean Literacy Action Plan.

Links to Other Action Plans: Collaborative and Coordinated Sanctuary Management, Physical and Chemical Oceanography, K-12 Education, Higher Education, Visitor Services, Data Management, Sharing, and Reporting

Key Partners: Hoh, Makah, and Quileute tribes and Quinault Indian Nation, Washington State Ocean Caucus, UW Climate Impacts Group, West Coast Governors' Agreement on Ocean Health Climate Change Action Coordination Team, NOAA/PMEL, OCNMS Advisory Council, West Coast Regional Sanctuaries, Monterey Bay Research Institute, Grays Harbor and North Pacific Coast marine resources committees, Washington Sea Grant, Port Townsend Marine Science Center, UW Friday Harbor Labs, U.S. Fish and Wildlife Service, Olympic National Park, NOAA Ocean Services, and non-governmental organizations, AC, NOAA (ONMS, NMFS, PMEL), NGOs, IPC, Washington Department of Ecology

D3. Marine Debris Action Plan

Desired Outcomes: 1) Increased identification of the types and locations of abandoned submerged and floating marine debris; and 2) reduced environmental and aesthetic impacts of debris on coastal beaches.

Links to Goals:

Goal E - Maintain the sanctuary's natural biological diversity and protect, and where appropriate, restore and enhance Sanctuary ecosystems.

Background:

Manufactured materials disposed of in the ocean are known as marine debris; these debris are unsightly on our beaches, harmful to wildlife, and can reduce fishery profits. Removing marine debris from the ocean and beaches, and working with partners to reduce the production and disposal of materials that frequently become marine debris, are both important to protecting the health of the sanctuary and the wildlife that inhabit it. This action plan outlines the strategies and activities by which OCNMS will continue and expand its efforts to reduce marine debris in and prevent it from entering the sanctuary.

OCNMS formally defines marine debris, in accordance with the NOAA Office of Response and Restoration Marine Debris Program's definition, as "any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment." Marine debris can be submerged or floating in the ocean; it can also be beached. Submerged marine debris includes sunken, derelict vessels. Marine debris removal and reduction, in addition to being a high priority for OCNMS, is also a high priority for the state of Washington, the Coastal Treaty Tribes, non-governmental organizations such as Surfrider and a wide range of other organizations and agencies. Affecting ocean and beach ecosystems all over the world, marine debris is a global ocean epidemic. Thus, in supporting local marine debris efforts, OCNMS is also helping to promote nation and worldwide awareness of the marine debris problem.

Strategy MD1: SUBMERGED OR FLOATING DEBRIS

Identify, locate, and remove lost or abandoned submerged or floating marine debris.

Activity A: Promote use by tribal and non-tribal fishers of the Washington Department of Fish and Wildlife (WDFW) derelict fishing gear hotline, Northwest Straits Marine Conservation Initiative derelict fishing gear reporting system, or other systems established for reporting locations of lost fishing gear, sunken vessels, and other forms of submerged and floating marine debris.

Activity B: Support programs focusing on Washington's outer coast to locate abandoned submerged and floating marine debris, develop safe and minimal impact removal techniques, and remove known marine debris.

Activity C: Support local efforts to reduce generation of sea-based marine debris through improvements in opportunities for solid waste and marine debris disposal and recycling programs.

Activity D: Record observations of abandoned submerged and floating marine debris made during OCNMS research and monitoring programs. Report relevant observations to WDFW, Northwest Straits Marine Conservation Initiative and/or other appropriate reporting systems.

Activity E: Maintain an OCNMS database and geographic information system (GIS) products for marine debris identified by OCNMS and others. Collaborate in efforts to prioritize removal of submerged and floating marine debris.

Activity F: Collaborate with the U.S. Department of Defense to mitigate military use of expendable materials that become marine debris.

Strategy MD2: BEACH DEBRIS

Mitigate impacts of marine debris on coastal beaches.

Activity A: Participate as an active partner in the Washington Clean Coast Alliance (WCCA). Engage coastal communities and volunteers in beach cleanups, including expansion of efforts to include multiple volunteer beach cleanup efforts on shores adjacent to the sanctuary throughout the year.

Activity B: Conduct outreach to increase public understanding of the nature and scope of environmental impacts of marine debris, and encourage individual efforts to reduce sources of marine debris.

Activity C: Collaborate with Olympic National Park and the Washington Maritime National Wildlife Refuge Complex to develop beach cleanup initiatives focused on refuge island shores and remote coastal areas of the park.

Activity D: Promote inventory of marine debris from Washington's outer coast beaches. Use marine debris data in public outreach efforts and to support regional efforts to reduce sea- and land-based sources of marine debris.

Activity E: Support programs in coastal communities to identify potential sources of land-based marine debris, and improve garbage management, recycling opportunities and other programs with potential to reduce beach debris.

Activity F: When feasible, collaborate with the U.S. Department of Defense to use military manpower and equipment to support beach cleanups and other marine debris removal efforts in the sanctuary.

Links to Other Action Plans: Collaborative and Coordinated Sanctuary Management, Community Outreach, Community Involvement in Sanctuary Management, Habitat Protection, Spills

Key Partners: Hoh, Makah, and Quileute tribes and Quinault Indian Nation, coastal communities, Washington Clean Coast Alliance, NOAA Marine Debris Program, West Coast Governors' Agreement on Ocean Health Marine Debris Action Coordination Team, Washington state, Olympic National Park, Washington Maritime National Wildlife Refuge Complex, U.S. Department of Defense, North Pacific Coast and Grays Harbor marine resources committees, Northwest Straits Marine Conservation Initiative, non-governmental organizations, and regional port authorities

D4. Wildlife Disturbance Action Plan

Desired Outcomes: 1) Minimized disturbance to wildlife in the sanctuary; and 2) improved protection for wildlife potentially impacted by human activities.

Links to Goals:

Goal E - Maintain the sanctuary's natural biological diversity and protect, and where appropriate, restore and enhance sanctuary ecosystems.

Background:

During the MPR public scoping process, numerous comments identified protection of wildlife, including minimization of wildlife disturbance from human activities, as an important topic for sanctuary management. The outer coast of Washington, particularly the northern portion, is recognized for its unique and abundant wildlife, relatively undeveloped condition, and productive ecosystem through state and federal designations – Washington Seashore Conservation Area, Olympic National Park's coastal strip, Washington Maritime National Wildlife Refuge Complex, and Olympic Coast National Marine Sanctuary. These extraordinary natural values were acknowledged and protected as early as 1907 when seabird colonies on the coast's islands were first granted federal conservation protection under a seabird reserve system by President Theodore Roosevelt.

The phrase 'wildlife disturbance' encompasses acoustic, physical and visual disturbances caused by human activities that can have physical and behavioral impacts on wildlife above, below and on the water surface. Overt responses of fish and wildlife species to disturbance include flushing birds from their nesting roosts, flushing of marine mammals from haul out areas, or even death. Sources of wildlife disturbance in OCNMS could include low-flying aircraft, motorized personal watercraft, fireworks, close approach to wildlife aggregation areas (either humans on foot or in a vessel) and other excessive anthropogenic noises that could originate from shipping, military exercises, or seismic exploration. Research has documented variability in disturbance distances and responses based on differing activities and vessel types, as well as on the species affected. In marine areas, these data have supported protective regulations to establish approach limits, speed restrictions and buffer zones around sensitive wildlife assemblages and habitats. Wildlife disturbance also can be minimized through outreach both to expand citizen familiarity with issues and to encourage appropriate behavior around wildlife.

The focus of this action plan is on working collaboratively to improve outreach, education and enforcement efforts related to wildlife disturbance, as there are existing regulations (OCNMS, USFWS, NMFS) addressing wildlife disturbance concerns and impacts. However, awareness and enforcement of these regulations is inadequate and greater efforts need to be made to improve:

- Sanctuary users' understanding of appropriate and mandated wildlife etiquette
- Voluntary compliance with wildlife disturbance regulations so impacts to wildlife are avoided
- Enforcement of wildlife disturbance regulations so future impacts to wildlife are reduced

Strategy WD1: OUTREACH ON WILDLIFE DISTURBANCE

Promote public understanding of wildlife disturbance issues through education and outreach programs.

Activity A: Collaborate with other wildlife management agencies in the region to develop wildlife viewing guidelines addressing shore-based and vessel activities. Produce and distribute those outreach products that address wildlife viewing guidelines.

Activity B: Collaborate on outreach efforts targeting specific user groups in order to improve public understanding of wildlife disturbance and the impacts of human behavior on wildlife. Promote best practices, guidelines and regulations that benefit wildlife, reduce disturbance, and enhance human enjoyment of natural resources.

- Model programs include NOAA’s Ocean Etiquette and Watchable Wildlife.
- User groups include charter fishing and wildlife viewing operators, kayakers and surfers.
- During outreach efforts, identify legitimate uses of the airspace within the OCNMS wildlife disturbance mitigation (overflight restriction) zone.

Activity C: Collaborate in training regional interpreters, rangers, enforcement staff and volunteers on wildlife disturbance issues.

Activity D: Improve OCNMS web site content related to visitor appreciation of wildlife and wildlife disturbance caused by human activities.

Activity E: Maintain the OCNMS incident database to record times, locations, and other information for reported wildlife disturbance events.

- Incident database entries will include reported overflight violations, as well as permitted and exempted low altitude flights.
- Include marine mammal ship strikes in the database.
- Incident database information will be shared with regional enforcement officers, permitting staff and concerned management entities to reinforce wildlife disturbance concerns.

Strategy WD2: OVERFLIGHT RESTRICTION ZONE

Support and improve recognition of and compliance with the existing OCNMS wildlife disturbance mitigation (overflight restriction) zone.

Activity A: Improve compliance with the OCNMS wildlife disturbance mitigation (overflight restriction) zone through collaboration with Aircraft Owners and Pilots Association (AOPA) and Washington Pilots Association (WPA) to improve outreach products for and communication with local pilots.

Activity B: Develop outreach products and orientation materials on the OCNMS wildlife disturbance mitigation (overflight restriction) zone and associated wildlife disturbance issues useful for regional enforcement officers. Organize and conduct regular training sessions for regional enforcement officers.

Activity C: Support efforts to have the OCNMS wildlife disturbance mitigation (overflight restriction) zone depicted on Federal Aviation Administration (FAA) aeronautical charts.

Strategy WD3: MARINE MAMMAL DISTURBANCE

Assess the potential for and occurrence of marine mammal disturbance and injury from human activities.

Activity A: Participate and encourage activities to characterize the acoustic environment and potential acoustic impacts on marine mammals in the sanctuary including:

- Supporting long-term acoustic monitoring to establish background sounds levels and changes over time
- Collaborating with researchers and other agencies to identify potential emerging issues related to sources of underwater sound that could impact the sanctuary environment
- Considering how proposed activities in and around sanctuary waters might generate underwater sound that could impact marine mammals

Activity B: Identify degree of risk posed to marine mammals from ship strikes in the sanctuary by:

- Coordinating with the Northwest Marine Mammal Stranding Network to identify potential increased incidences of ship strikes that may have occurred in the sanctuary
- Supporting efforts to examine overlap areas of high marine mammal density and shipping lanes
- Assessing acoustic impact mitigation strategies used by other sanctuaries and NOAA agencies and considering such strategies in OCNMS

Activity C: Work with the fishery co-managers and fishing organizations to identify existing conflicts between marine mammals and other activities in the sanctuary including:

- Marine mammal entanglement in fishing and other gear occurring in sanctuary waters
- New emerging conflicts such as those between long-line fishing operations and depredating sperm whales (i.e., whales that are taking or trying to take fish from fishing gear)

Links to other Action Plans: Sanctuary Operations, Habitat Protection, Populations, Communities and Ecosystems, Visitor Services, Community Outreach, Collaborative and Coordinated Sanctuary Management, Physical and Chemical Oceanography

Key Partners: Hoh, Makah, and Quileute tribes and Quinault Indian Nation, Olympic National Park, U.S. Fish and Wildlife Service, Washington State Parks and Recreation Commission, Washington Department of Fish and Wildlife, COASST, Washington Clean Coast Alliance; Grays Harbor and North Pacific Coast marine resource committees, Surfrider, NMFS, Westport Charterboat Association, regional port authorities and marina facilities, Northwest Marine Mammal Stranding Network, U.S. Coast Guard, U.S. Navy, Aircraft Owners and Pilots Association (AOPA), Washington Pilots Association (WPA), regional airports, shipping industry, coastal communities

D5. Water Quality Protection Action Plan

Desired Outcome: High water quality to ensure protection of natural resources in the sanctuary

Links to Goals:

Goal E - Maintain the sanctuary's natural biological diversity and protect, and where appropriate, restore and enhance sanctuary ecosystems.

Background:

ONMS strives to maintain and improve water quality in the sanctuary. Water quality protection is critical to ensuring the health of marine organisms and habitats from the bottom to the top of the food chain. Given increasing concerns about ocean acidification, harmful algal blooms and hypoxic events, it is crucial that OCNMS do its utmost to identify, mitigate, reduce and/or remove, where possible, known causes of water quality degradation in the sanctuary.

Strategy WQP1: VESSEL DISCHARGES

Reduce, through regulatory changes, voluntary and outreach measures, or marina facilities improvements, the degradation of water quality caused by vessel wastewater and sewage discharges.

Activity A: Work with the shipping industry and others to assess potential impacts of wastewater discharges from large vessels (300 gross tons or greater) and identify measures to prevent or mitigate those impacts.

Activity B: During the management plan review process, publish a rulemaking proposing to modify OCNMS regulations to prohibit all discharges from cruise ships into sanctuary waters, except those necessary for vessel operations (e.g., clean vessel engine cooling water, clean vessel generator cooling water, clean bilge water, engine exhaust, and anchor wash).

Activity C: Encourage regional port authorities, and assist in their efforts, to improve availability and use of sewage pump-out facilities for vessels.

Activity D: Work collaboratively with coastal communities to develop and implement a water quality education and outreach program to promote best practices regarding vessel discharges from marine sanitation devices, or those vessels lacking marine sanitary devices.

Activity E: In year five of management plan implementation review the progress made on activities WQP1 A-D, and evaluate if additional actions are warranted.

Strategy WQP2: CONTAMINANTS

Support efforts to monitor contaminant levels, understand potential impacts of contaminants, and reduce, eliminate, or mitigate impacts of contaminants to natural resources in the sanctuary.

Activity A: Support local, state, tribal and federal efforts to identify, characterize, and mitigate sources of contaminants within or entering waters of the sanctuary and accumulating in biota and habitats.

Activity B: Support closure and remediation of the Warmhouse Dump (on Makah Tribe's Reservation) to minimize contaminant release to marine waters.

Links to other Action Plans: Physical and Chemical Oceanography, Collaborative and Coordinated Sanctuary Management

Key Partners: U.S. Environmental Protection Agency, Washington Department of Ecology, Hoh, Makah, and Quileute tribes and Quinault Indian Nation, local governments, coastal communities, outer coast Marine Resources Committees, Olympic National Park, Washington Maritime National Wildlife Refuge Complex, West Coast Governors' Agreement on Ocean Health Polluted Runoff Action Coordination Team, U.S. Department of Defense, non-governmental organizations, regional port authorities, cruise ship industry, shipping industry, commercial fishing interests

D6. Habitat Protection Action Plan

Desired Outcomes: Human-caused degradation of marine habitats is minimized and mitigated, particularly for those habitats 1) demonstrating high value to ecosystem functioning and productivity; and 2) are most vulnerable to human disturbance.

Links to Goals:

Goal E - Maintain the sanctuary's natural biological diversity and protect, and where appropriate, restore and enhance sanctuary ecosystems.

Background:

The phrase 'habitat protection' is used here to reference actions taken to prevent, mitigate, or eliminate degradation of marine habitats in the sanctuary. A fundamental premise of habitat protection actions is that healthy habitats support healthy marine populations and communities, including exploited fishery resources. Habitat protection actions must be supported by research and monitoring efforts that improve our understanding of functions and values of marine habitats, document how, when and where habitat degradation occurs, and evaluate the effectiveness of management responses. In addition, habitat protection actions need to be reinforced through outreach, both to expand citizen familiarity with issues and to encourage actions that individuals and organizations can take to minimize habitat impacts.

This action plan focuses heavily on collaborative work to 1) understand potential habitat impacts in the sanctuary, 2) identify habitats of special concern critical to ecosystem functioning in the sanctuary, and 3) monitor for and prevent invasive species introductions.

Strategy HP1: THREAT ASSESSMENT AND MITIGATION

Assess existing and potential natural and human-caused threats to physical and biogenic marine habitats (e.g., deep sea corals and sponge, kelp and other macroalgae), and collaboratively develop appropriate management measures to protect and conserve physical and biological habitats.

Activity A: Identify, in consultation with co-management authorities, existing and potential impacts and threats to, as well as relative vulnerability of, physical and biogenic marine habitats in the sanctuary. Recommend and/or implement monitoring to assess relative habitat vulnerabilities to, and impacts and threats from natural disturbances and human activities, including cumulative impacts.

Activity B: Recommend, or implement collaboratively with co-managers, management measures minimizing and mitigating human-caused impacts to physical and biogenic marine habitats.

Activity C: Monitor the recovery rates of habitats, associated biological communities, and habitat-forming biogenic structures following disturbance by human activities.

Strategy HP2: HABITATS OF SPECIAL IMPORTANCE

Develop criteria to identify marine habitats of special importance. Collaborate with co-managers to identify and implement management measures necessary for protection of habitats of special importance.

Activity A: Develop criteria, in collaboration with natural resource co-managers, for habitat types of special importance to ecosystem function or managed species and identify the locations of such habitats.

Activity B: Develop and implement, in collaboration with natural resource co-managers, potential management strategies for protection of habitats of special ecosystem value.

Activity C: Participate in Pacific Fishery Management Council processes, including identification and review of essential fish habitat (EFH) and habitat areas of particular concern (HAPC) through OCNMS representation on the EFH Review Committee.

Activity D: Collaboratively develop and evaluate recommendations for HAPC site and EFH conservation areas.

Activity E: Assist the National Park Service with designation and management of intertidal reserve areas as identified in the ONP 2008 General Management Plan.

Strategy HP3: INVASIVE SPECIES

Reduce the potential for introduction of invasive species in the sanctuary region, monitor distributions of known invasive species, and support programs to mitigate impacts of invasive species to natural and cultural resources.

Activity A: Through OCNMS monitoring, stewardship and outreach programs, support the work of Washington State Department of Fish and Wildlife and other agencies to prevent introduction of invasive species.

Activity B: Engage in regional efforts to monitor for the presence and distribution of invasive species, including volunteer monitoring, where appropriate.

Activity C: Support regional efforts to develop a response protocol(s) for non-native invasive species and to reduce ecological and economic impacts of invasive species.

Links to Other Action Plans: Water Quality Protection, Populations, Communities and Ecosystems, Habitat Mapping and Classification, Collaborative and Coordinated Sanctuary Management

Key Partners: ONP, USFWS, USGS, NOAA (NMFS, NOS), Washington Departments of Fish and Wildlife, Ecology, and Natural Resources, Washington Invasive Species Council, Hoh, Makah, and Quileute tribes and Quinault Indian Nation, IPC, North Pacific Coast and Grays Harbor marine resources committees, NGOs, universities and colleges, coastal communities, Pacific Fishery Management Council, academic organizations, Department of Fisheries and Oceans Canada, local governments, and coastal communities

D7. Regional Ocean Planning Action Plan

Desired Outcome: Improved integration of best available science into OCNMS decision making.

Links to Goals:

Goal E - Maintain the sanctuary's natural biological diversity and protect, and where appropriate, restore and enhance Sanctuary ecosystems.

Goal G - Facilitate wise and sustainable use in the sanctuary to the extent that such uses are compatible with resource protection.

Background:

Throughout the MPR process, the issue of human development in the sanctuary – and how to facilitate human activities in the sanctuary compatible with the primary OCNMS objective of resource protection – has repeatedly arisen. The ocean is a busy place; there are many activities occurring in sanctuary waters and many activities that may be proposed in the near future. It is a complex task to facilitate human use of the sanctuary while maintaining adequate protection for resources. Each human use and its potential associated impacts need to be analyzed and understood; likewise, the cumulative impacts of all human uses need to be considered. Moreover, ONMS needs to understand potential conflicts between human uses. Thus, in order to make sound decisions about human use development in the sanctuary, ONMS cannot consider each human use in isolation.

ONMS also needs to consider human uses in the sanctuary within the context of regional human use patterns and development. Currently, there are significant regional and national ocean planning efforts being made to address human use development in the ocean and balance development of ocean resources with the protection of these resources; these efforts are commonly described as “marine spatial planning.” The National Ocean Council describes coastal and marine spatial planning (CMSP) as:

“...a comprehensive, adaptive, integrated, ecosystem-based, and transparent spatial planning process, based on sound science, for analyzing current and anticipated uses of ocean, coastal and Great Lakes areas. CMSP identifies areas most suitable for various types of classes of activities in order to reduce conflicts among uses, reduce environmental impacts, facilitate compatible uses, and preserve critical ecosystem services to meet economic, environmental, security and social objectives. In practical terms, CMSP provides a public policy process for society to better determine how the ocean, coasts, and Great lakes are sustainably used and protected now and for future generations.” Executive Order 13547, Stewardship of the Ocean, Our Coasts, and the Great Lakes

ONMS decisions about human use planning and permitting in the sanctuary should be informed by regional ocean planning efforts. And, conversely, those making ocean planning decisions about human uses on a regional scale will include OCNMS and its role in promoting marine conservation and ocean stewardship in their decision-making process. This action plan explains how ONMS will integrate itself into regional and other ocean planning efforts in order both to

make and promote sound decisions about compatible human use development in the sanctuary and the northwest region.

Strategy ROP1: REGIONAL OCEAN PLANNING

Investigate how recent initiatives in marine spatial planning can improve sanctuary management by participating in regional ocean planning processes.

Activity A: Work with the IPC and AC to develop a plan to integrate sanctuary efforts into regional ocean planning processes.

Activity B: Make existing OCNMS spatial data available to existing marine spatial tools, such as the Multipurpose Marine Cadastre.

Activity C: Identify, prioritize and collect spatial data on marine uses and resources that contribute to regional ocean planning processes and improve ONMS decision-making.

Activity D: Support the state of Washington's efforts to develop a statewide Marine Spatial Plan, as well as other regional and federal ocean planning efforts that may emerge in the future.

Activity E: Participate in planning processes and site evaluations for proposed development projects in or immediately adjacent to OCNMS and utilize existing (or collaborate in collecting new) natural and cultural resource information to avoid, minimize, and mitigate user conflicts and impacts to habitats and natural and cultural resources.

Links to Other Action Plans: Collaborative and Coordinated Sanctuary Management, Community Involvement in Sanctuary Management, Habitat Mapping and Classification, Habitat Protection, Wildlife Disturbance, Sanctuary Operations

Key Partners: Hoh, Makah, and Quileute tribes and Quinault Indian Nation, Department of Interior (National Parks, U.S. Fish and Wildlife Service), NMFS, Washington State Departments of Fish and Wildlife, Natural Resources, and Ecology, Washington State Ocean Caucus, West Coast Governors' Agreement on Ocean Health Renewable Ocean Energy Action Coordination Team, West Coast CMSP Regional Planning Body, local governments, coastal communities and non-governmental organizations

E. Understand the Sanctuary's Cultural, Historical and Socioeconomic Significance

E1. Maritime Heritage Action Plan

E2. Socioeconomic Values of Resources in the Sanctuary Action Plan



Introduction

Characterizing, protecting, and enhancing public awareness of the sanctuary's maritime heritage (including living cultures, cultural resources, and local and customary knowledge) is an important role of OCNMS – and a role mandated by Section 110 of the National Historic Preservation Act. Additionally, facilitating compatible and sustainable human uses of sanctuary resources is also an important role of OCNMS. In many cases, OCNMS does not have a strong understanding of the cultural, historical and socioeconomic significance of its resources. Thus, over the next five to ten years, OCNMS needs to work collaboratively with tribal and non-tribal communities, as well as with experts in archeology, anthropology, history, social sciences and economics to build this understanding and communicate maritime heritage messages effectively to the public.

E1. Maritime Heritage Action Plan

Desired Outcomes: 1) Improved understanding of the cultural and historic resources in the sanctuary region; and 2) Improved communication between OCNMS, the Washington State Historic Preservation Office, the Makah Tribal Historic Preservation Office, and the Quileute, Hoh and Quinault cultural resource management representatives.

Links to Goals:

Goal F - Enhance understanding and appreciation of the Olympic Coast's maritime heritage (living cultures, traditions, and cultural resources).

Background:

The National Marine Sanctuaries Act (NMSA) mandates sanctuaries “enhance public awareness, understanding, appreciation, and wise and sustainable use of the marine environment, and the natural, historical, cultural and archeological resources of the National Marine Sanctuary System (NMSA, Section 301(b)(4)).” The NMSA also mandates sanctuaries comply with the federal archeological program, of which the National Historic Preservation Act is the primary tenant. It is important OCNMS continue to characterize and understand the cultural and historical resources in the sanctuary, particularly in light of the unique American Indian cultural context within which the sanctuary resides. While OCNMS' maritime heritage program is small in size, it can play a significant role in understanding and communicating the outer coast's rich cultural heritage to the public. The aim of this action plan is to define OCNMS' unique role in working collaboratively with tribal and non-tribal communities on the outer coast to:

- Continue and develop efforts to understand the region's rich cultural heritage
- Improve the public's understanding of the significance of the region's maritime heritage
- Incorporate local and customary knowledge (knowledge gained by experience and collected by tribal and non-tribal individuals and communities) into sanctuary management processes
- Gain an improved understanding of the past in order to make better ocean management decisions and policies today

One reason OCNMS' maritime heritage program is especially important to develop is the sanctuary area is also the usual and accustomed areas of four Coastal Treaty Tribes. In this way, OCNMS is unique within the national marine sanctuary system; and the interconnectedness between the American Indians of the Olympic Peninsula and the ocean resources that are now a part of the sanctuary presents OCNMS with a unique opportunity and responsibility to work with the Coastal Treaty Tribes on maritime heritage projects and to communicate to the public the significance of tribal cultures. The non-tribal fishing communities adjacent to the sanctuary also possess a rich cultural heritage that OCNMS has a role in exploring and communicating. In addition to the cultural heritage of the region, a multitude of physical cultural resources exist in the sanctuary. Heavily-used historical and contemporary trade routes run through OCNMS and there are hundreds of shipwrecks supposed to have occurred in the sanctuary, only a handful of which have been verified, mapped and assessed.

This action plan identifies several specific ways in which OCNMS can more fully develop its maritime heritage program, improve its understanding of this heritage, and improve the way it communicates information about maritime and cultural heritage to the public.

Strategy MH1: CULTURAL RESOURCE CONSERVATION

Work collaboratively to locate, inventory, assess, interpret and protect cultural resources in the sanctuary, and develop further the cultural resource components of OCNMS' permitting and compliance program.

Activity A: Identify priorities for future cultural resource surveys in the sanctuary and assess the resources needed to complete those surveys and implement OCNMS' maritime heritage program.

Activity B: Work with partners to develop uniform guidelines/protocols for cultural resource data collection in the sanctuary.

Activity C: In consultation with the Coastal Treaty Tribes, the state of Washington Historic Preservation Office, the state of Washington Department of Historic Preservation and Archeology, Olympic National Park and others develop a programmatic agreement describing the way in which OCNMS' routine activities will comply with Section 106 of the National Historic Preservation Act.

Activity D: Pursue research funding and partnerships with academic institutions and tribal communities to support the study and analysis of existing cultural resource collections (e.g., at the Makah Cultural and Research Center and other tribal centers) in order to test hypotheses and answer questions about past and future changing ecological conditions on the Olympic Peninsula.

Strategy MH2: LOCAL AND CUSTOMARY KNOWLEDGE

Work with tribal and non-tribal partners to explore ways to gather, share and apply (when appropriate) traditional ecological knowledge, local and customary knowledge, and information obtained from cultural resource analyses.

Activity A: In collaboration with the Coastal Treaty Tribes, develop a program to survey and map "traditional cultural properties" in marine areas of interest to each tribe. This would include working with individual tribes to develop survey protocols to address the nature of properties surveyed, survey methodology, the sensitivity of survey data, disclosure and non-disclosure limitations, disposition of the data, and products derived from the data.

Activity B: Work with the Coastal Treaty Tribes, non-tribal communities and other partners to host scholarly and educational events that bring together natural science, social science and tribal knowledge experts to discuss pressing sanctuary management issues and ways in which traditional ecological knowledge could help to resolve those issues.

Activity C: Collect, analyze and share (as agreed) historical accounts and oral histories from historic (tribal and non-tribal) user groups of resources in the sanctuary, including community members, fishermen, divers, and others, in order to improve understanding of the role that maritime heritage played in the sanctuary's past and collect information relevant to current/future resource management in OCNMS. Ensure the information collected from

local communities as part of historical and cultural research projects is shared with these communities in a timely manner once projects are completed.

Strategy MH3: PUBLIC UNDERSTANDING OF TREATY RIGHTS

Work collaboratively with the Coastal Treaty Tribes to improve the public's understanding of treaty rights and how traditional lifeways form a vital connection between the past, the present and the future, with a focus on marine areas.

Activity A: Work with the Coastal Treaty Tribes to create protocols for developing, reviewing and communicating information about treaty rights and tribal cultures to sanctuary visitors, volunteers, staff, partners and local communities.

Activity B: Maintain ongoing communications with Coastal Treaty Tribes about opportunities to collaborate on events such as community festivals (Makah Days, Quileute Days, Chief Taholah Days, etc.), special events like Tribal Journeys and other commemorations or significant celebrations within tribal communities.

Activity C: Work collaboratively with the Coastal Treaty Tribes, Olympic National Park and other partners in the development of an OCNMS Long-Range Interpretive Plan that emphasizes appropriate messages and content relating to treaty rights, traditional and contemporary tribal communities, cultures and cultural values.

- Identify opportunities for projects, facilities and program development with each Coastal Treaty Tribe (e.g., maps with American Indian place names, wayside exhibits on each of the tribes, new visitor centers, publications) to be located or distributed on tribal reservations and other locations.
- Identify opportunities for interpreting traditional culture and cultural values at the Olympic Coast Discovery Center.
- Continue to incorporate information about the Coastal Treaty Tribes into the standard training for sanctuary volunteers (including AC members).

Links to Other Action Plans: Collaborative and Coordinated Sanctuary Management, Community Outreach, K-12 Education, Higher Education, Visitor Services

Key Partners: Makah, Quileute and Hoh Tribes and the Quinault Indian Nation, Olympic Coast Intergovernmental Policy Council, Olympic National Park, Olympic Park Institute, OCNMS Advisory Council, Washington State Historic Preservation Office, Washington Department of Archeology and Historic Preservation, Makah Cultural and Research Center, Advisory Council on Historic Preservation, Puget Sound Maritime Historical Society, Washington State Historical Society, Washington Trust for Historic Preservation, Museum of History and Industry, commercial and sport fishermen, divers, local residents, historians and history organizations, Puget Sound Maritime Historical Society, Museum of History and Industry, Grays Harbor Historical Seaport Authority and Westport Maritime Museum

E2. Socioeconomic Values of Resources in the Sanctuary Action Plan

Desired Outcome: Improved ecological, social, and economic resilience for the Olympic Peninsula.

Links to Goals:

Goal G - Facilitate wise and sustainable use in the sanctuary to the extent that such uses are compatible with resource protection.

Background:

Socioeconomic valuation of sanctuary resources is critical to sanctuary management. Social science data are used to examine the human dimension of marine resource management; to understand consumptive and non-consumptive human use patterns; to assess economic impacts of proposed activities; and to understand the attitudes, perception and beliefs of resource users. Each of these factors is not only directly relevant to the National Marine Sanctuaries Act (NMSA) and laws such as the National Environmental Policy Act (NEPA), but is also critical to devising policies and management strategies resulting in ecological, social, and economic resilience. Currently, very little socioeconomic or human use information exists for OCNMS. Thus, at this time OCNMS is not able to analyze socioeconomic effects of the sanctuary and sanctuary management as comprehensively as is needed, nor is it able to pursue an ecosystem-based management (EBM) framework. EBM, to be effective, requires integrating both natural and social science data into ecosystem management decisions.

With improved information about the socioeconomic values of resources in the sanctuary, an improved understanding of what human uses are occurring in the sanctuary, and an improved understanding of what human uses might be proposed in the sanctuary, OCNMS will be better equipped to make sound sanctuary management decisions. Moreover, ecosystem-based management frameworks require management agencies to consider humans and human uses as part of ecosystems. To develop an effective ecosystem-based management framework, OCNMS management needs to develop a better understanding of socioeconomics and human uses in the sanctuary. Thus, this action plan is focused on socioeconomic and human use research and assessment and is intended to complement the Habitat Mapping and Classification Action Plan, Physical and Chemical Oceanography Action Plan, Populations, Communities and Ecosystems Action Plan, and Data Management, Sharing and Reporting Action Plan.

Strategy SV1: EXISTING SOCIOECONOMIC INFORMATION

Foster analysis and dissemination of existing socioeconomic data about Olympic Coast marine resources and human use patterns, including consumptive, non-consumptive and passive human use patterns.

Activity A: Identify key socioeconomic players in the sanctuary region and begin targeted outreach effort to communicate OCNMS goals, and its role as a facilitator, in regional socioeconomic characterization.

Activity B: Further develop the existing annotated bibliography of references relevant to socioeconomic valuation of marine resources on the Olympic Peninsula, and make this annotated bibliography widely available (post it on OCNMS website).

Activity C: Review and summarize information on West-Coast wide efforts to collect data on human use patterns in the marine and coastal environment.

Activity D: Make existing socioeconomic data widely available in user-friendly formats (such as GIS layers).

Strategy SV2: NEW SOCIOECONOMIC INFORMATION

Develop partnerships in order to collect, assemble, and analyze new information about human uses/activities occurring in the sanctuary and their socioeconomic values.

Activity A: Submit a formal request to the Coastal Treaty Tribes expressing OCNMS' interest in partnering to assess and apply information on human use patterns and socioeconomic values.

Activity B: Work with the AC to form a working group to make recommendations on developing a common understanding of the human dimension of marine spatial planning and management in the OCNMS, and prioritizing socioeconomic data needs.

Activity C: Encourage the working group to initiate a small, joint (partnership driven) human use mapping project in order to develop an initial (general) socioeconomic characterization of the sanctuary region. This should be done using as many known resources as possible to minimize cost, time, and to build on or create new partnerships in the region. The socioeconomic characterization should address consumptive, non-consumptive, and passive use.

Activity D: Develop a joint proposal for a more extensive socioeconomic study or expanded (more detailed) human use mapping project and pursue funding for this proposal. Look for opportunities to leverage capacity and share costs, e.g., through the West Coast Governor's agreement, the Sea Grant Program, and the state of Washington.

Links to Other Action Plans: Regional Ocean Planning, Populations, Communities and Ecosystems, Data Management, Sharing and Reporting, Collaborative and Coordinated Sanctuary Management, Community Involvement in Sanctuary Management, Community Outreach

Key Partners: Makah, Quileute, Hoh Tribes and Quinault Indian Nation, state of Washington, Olympic Coast Intergovernmental Policy Council, NMFS/NWFSC, Ecotrust and other NGOs, outer coast Marine Resource Committees, Olympic National Park, county Economic Development Councils and the Olympic Peninsula Tourism Commission

5.3 PERFORMANCE MEASURES

Performance evaluation is an integral component of ONMS efforts to improve sanctuary management. The performance measures proposed here are designed to serve three purposes: 1) to better understand OCNMS' ability to meet its objectives; 2) to track OCNMS' success in addressing the issues identified in this management plan; and 3) to identify tangible examples of how OCNMS is contributing to both the performance targets developed for the Office of National Marine Sanctuaries and to achieving the mission of the NMSA.

With implementation of the revised OCNMS management plan, OCNMS staff will monitor these performance measures over time, collecting data on progress towards their achievement. Results will be compiled for the AC, IPC, and other interested parties on an annual basis (see Sanctuary Operations Action Plan, Strategy OPS10). Accomplishments, as well as any inability to achieve outcomes will be reported, including potential strategies for mitigating shortfalls. This internal review represents one of the primary benefits of the performance evaluation process: the ability to provide feedback about why particular actions are or are not meeting stated targets and how they can be altered to do so. This process, where appropriate will mesh with other programmatic evaluation tools, such as the OCNMS Condition Report.

Eight performance measures (and associated outcomes) are listed below. Under each outcome and performance measure, a list of the relevant priority issues addressed is provided (see section 4.5). OCNMS may opt to modify or augment these performance measures in the future.

In some cases, it is difficult to measure the achievement of the priority issues (e.g., Improve Ocean Literacy, Achieve Effective Collaborative and Coordinated Sanctuary Management). In these cases, the performance measures provided are serving as proxies for difficult to measure outcomes.

OUTCOME 1: ONMS is recognized by its partners and constituents as an organization effectively seeking and considering information and opinions from external sources in its management and decision making.

Performance Measure 1: Maintain undiminished or improve ratings of OCNMS' effectiveness as evaluated by key partners and constituents through a brief annual survey (e.g., using a web survey tool) designed to assess their involvement in sanctuary management processes and the perceived effectiveness of this involvement in sanctuary management processes over the past year. This survey should use the same survey questions each year so that results can be compared over time.

Relevant Priority Management Need (s): *Achieve Effective Collaborative and Coordinated Management*

OUTCOME 2: Increased involvement of communities on the Olympic Peninsula in sanctuary management issues and ocean conservation.

Performance Measure 2: Demonstrate an increase in 1) individual public attendance at OCNMS-hosted public meetings and events (e.g., open houses, Advisory Council meetings); and 2) volunteer hours in OCNMS-led education, stewardship and

research efforts (e.g., Discovery Center, COASST, intertidal monitoring). This measure will be evaluated on an annual basis.

Relevant Priority Management Need(s): *Achieve Effective Collaborative and Coordinated Management, Improve Ocean Literacy*

OUTCOME 3: Increase the area of sanctuary seafloor where efforts to map, groundtruth, characterize or analyze habitats have been completed.

Performance Measure 3: Map, groundtruth, characterize, and/or analyze 300 square nautical miles of sanctuary seafloor each year.

Relevant Priority Management Need(s): *Conduct Collaborative Research, Assessments and Monitoring to Inform Ecosystem-Based Management*

OUTCOME 4: ONMS will support collaborative and coordinated management through timely sharing of data collected by OCNMS.

Performance Measure 4: On an annual basis, track the progress made analyzing and distributing each data set that OCNMS collects. For each data set, report on 1) the date(s) the data were collected; 2) the expected annual and ultimate end product(s); 3) data sharing methods; 4) the time taken to analyze the data; 5) the time to disseminate the data; and 6) if necessary, when OCNMS anticipates completing a final analysis, report and dissemination.

Relevant Priority Management Need(s): *Conduct Collaborative Research, Assessments and Monitoring to Inform Ecosystem-Based Management*

OUTCOME 5: Determine the effectiveness of sanctuary Ocean Literacy programs whose audiences include sanctuary users, students, teachers, volunteers and partner organizations.

Performance Measure 5: Track progress made during each year toward improving the quality of Ocean Literacy programs and their impacts on participants in improving their understanding of ocean processes and resources and enhancing their commitment to act as stewards.

Relevant Priority Management Need(s): *Improve Ocean Literacy, Achieve Effective Collaborative and Coordinated Management*

OUTCOME 6: Communicate the importance of the sanctuary and its unique resources, and the unique role of NOAA and Olympic Coast National Marine Sanctuary as a marine resource manager using a wide variety of media and methods to reach broad audiences.

Performance Measure 6: Track effort and outputs of outreach programs, using tools appropriate for the media, communication methods and audiences.

Relevant Priority Management Need(s): *Achieve Effective Collaborative and Coordinated Sanctuary Management, Improve Ocean Literacy*

OUTCOME 7: ONMS is prepared for an oil or hazardous spill in or near the sanctuary.

Performance Measure 7: On an annual basis, 1) summarize and evaluate OCNMS participation in regional response planning efforts and spill drills; and 2) confirm that all OCNMS staff that have completed their assigned oil spill response training plan on an annual basis.

Relevant Priority Management Need(s): *Conserve Natural Resources in the Sanctuary*

OUTCOME 8: The condition of water quality, habitat and living resources in the sanctuary is maintained or improved.

Performance Measure 8: Every five years, evaluate if the condition of sanctuary resources has been maintained or improved, as assessed through an OCNMS Condition Report.

Relevant Priority Management Need(s): *Conserve Natural Resources in the Sanctuary*

5.4 COST ESTIMATES AND TIMELINES

Cost estimates for each strategy were developed to provide a general sense of the scope and scale of the work being proposed in the FMP and the resources necessary to accomplish this work (Table 4). These estimates are *not* proposed budgets. Estimates were developed based upon a series of assumptions that included a fixed cost of labor, and fixed estimates for travel time, supplies, printing, and other costs. These estimates do not account for inflation, staff merit pay increases, increases in cost of living, variable fuel and utility costs, etc., nor do these estimates differentiate between funds from the OCNMS base budget versus other funding sources (e.g., external grants, partnership with other agencies).

Table 4 Cost estimates associated with the action plan strategies (in thousands of dollars).

Strategies	Year 1	Year 2	Year 3	Year 4	Year 5
CCM1 External Evaluation	\$8	\$37	\$4	\$0	\$0
CCM2 Coastal Treaty Tribes	\$55	\$55	\$55	\$55	\$55
CCM3 Olympic Coast Intergovernmental Policy Council	\$165	\$165	\$165	\$165	\$165
CCM4 State of Washington	\$9	\$9	\$9	\$9	\$9
CCM5 Department of Interior	\$8	\$8	\$8	\$8	\$8
CCM6 US Coast Guard	\$9	\$9	\$9	\$9	\$14
CCM7 US Navy	\$16	\$9	\$9	\$9	\$9
CCM8 NMFS	\$24	\$24	\$24	\$24	\$24
CCM9 Office of National Marine Sanctuaries	\$107	\$107	\$107	\$107	\$107
CCM10 Canadian Government	\$8	\$8	\$8	\$8	\$8
COM1 Advisory Council	\$51	\$51	\$51	\$51	\$51
COM2 Marine Resources Committees	\$13	\$13	\$13	\$13	\$13
COM3 Non-Governmental Organizations	\$17	\$17	\$17	\$17	\$17
OPS1 Vessel Infrastructure and Operations	\$148	\$306	\$306	\$306	\$306
OPS2 Facilities	\$211	\$165	\$165	\$165	\$165
OPS3 Annual Planning	\$40	\$40	\$40	\$40	\$40
OPS4 Safety Operations	\$12	\$12	\$12	\$12	\$12
OPS5 Staffing	\$104	\$104	\$104	\$104	\$104
OPS6 Volunteer Program	\$92	\$92	\$92	\$92	\$92
OPS7 Permitting and Consultations	\$48	\$30	\$30	\$30	\$30
OPS8 Voluntary Compliance	\$32	\$16	\$16	\$16	\$16
OPS9 Enforcement and Incident Response	\$18	\$25	\$18	\$18	\$18
OPS10 Management Plan Implementation Reporting	\$40	\$40	\$40	\$40	\$40
MAP1 Regional Coordination	\$11	\$11	\$11	\$11	\$11
MAP2 Seafloor Habitat Mapping	\$37	\$218	\$218	\$218	\$218

Table 4 (continued) Cost estimates associated with the action plan strategies (in thousands of dollars).

Strategies	Year 1	Year 2	Year 3	Year 4	Year 5
MAP3 Habitat Classification	\$42	\$67	\$67	\$67	\$67
MAP4 Mapping Products	\$30	\$30	\$56	\$56	\$56
OCEO1 Coastal Mooring Program	\$286	\$286	\$286	\$286	\$286
OCEO2 Hypoxia	\$31	\$31	\$31	\$31	\$31
OCEO3 Ocean Acidification	\$21	\$21	\$21	\$21	\$21
OCEO4 Harmful Algal Blooms	\$17	\$17	\$17	\$17	\$17
ECO1 Water Column Communities	\$0	\$41	\$41	\$41	\$41
ECO2 Intertidal	\$14	\$28	\$28	\$28	\$28
ECO3 Subtidal	\$10	\$70	\$70	\$70	\$70
ECO4 Benthic	\$337	\$34	\$337	\$34	\$337
ECO5 Fish	\$10	\$10	\$10	\$10	\$10
ECO6 Marine Birds	\$50	\$78	\$137	\$82	\$82
ECO7 Marine Mammals	\$13	\$110	\$225	\$110	\$90
ECO8 Stranding Networks	\$17	\$17	\$17	\$17	\$17
ECO9 Ecosystem Processes	\$23	\$1	\$71	\$0	\$0
DAT1 Data Quality Control and Management	\$7	\$2	\$2	\$2	\$2
DAT2 Data Distribution	\$33	\$33	\$33	\$33	\$33
DAT3 Adaptive Management	\$0	\$13	\$3	\$3	\$3
DAT4 Condition Report	\$0	\$0	\$0	\$0	\$36
ED1 K-12 Partnerships	\$52	\$52	\$52	\$52	\$52
ED2 Place-Based Education	\$118	\$118	\$118	\$118	\$118
ED3 Regional Initiatives	\$19	\$19	\$19	\$19	\$19
ED4 Technology	\$52	\$52	\$52	\$52	\$52
HED1 Internship Development	\$58	\$58	\$58	\$58	\$58
HED2 Volunteer Positions	\$7	\$7	\$7	\$7	\$7
HED3 College Partnerships	\$59	\$59	\$59	\$59	\$59
VISIT1 Visitor Experience	\$186	\$186	\$186	\$186	\$186
VISIT2 Long-Range Interpretive Plan	\$34	\$34	\$34	\$34	\$34
VISIT 3 New Technology	\$294	\$294	\$294	\$294	\$294
OUT1 Stewardship and Citizen Science	\$154	\$154	\$154	\$154	\$154
OUT2 Staff Presence on Outer Coast	\$27	\$27	\$27	\$27	\$27
OUT3 Community Events	\$74	\$74	\$74	\$74	\$74
OUT4 Community-Based Efforts	\$43	\$43	\$43	\$43	\$43

Table 4 (continued) Cost estimates associated with the action plan strategies (in thousands of dollars).

Strategies	Year 1	Year 2	Year 3	Year 4	Year 5
SPILL1 ATBA Management, Compliance and Monitoring	\$11	\$20	\$72	\$36	\$36
SPILL2 Regional Vessel Management Forums	\$12	\$4	\$4	\$0	\$0
SPILL3 Regional Planning and Training Exercises	\$39	\$26	\$21	\$20	\$26
SPILL4 Outer Coast Trustees Working Group	\$5	\$5	\$5	\$5	\$5
SPILL5 OCNMS Organizational Response Plan	\$3	\$2	\$2	\$2	\$2
SPILL6 Damage Survey and Assessment Protocols	\$5	\$9	\$20	\$5	\$5
CLIM1 Climate-Smart Sanctuary Program	\$75	\$75	\$75	\$75	\$75
CLIM2 Sanctuary as Sentinel Site	\$36	\$36	\$36	\$36	\$36
CLIM3 Resilient Ecosystems	\$73	\$73	\$73	\$73	\$73
CLIM4 Communicating Climate Change	\$101	\$101	\$101	\$101	\$101
MD1 Submerged or Floating Debris	\$8	\$8	\$8	\$8	\$8
MD2 Beach Debris	\$27	\$27	\$27	\$27	\$27
WD1 Outreach on Wildlife Disturbance	\$27	\$27	\$27	\$27	\$27
WD2 Overflight Restriction Zone	\$12	\$0	\$0	\$0	\$0
WD3 Marine Mammal Disturbance	\$0	\$0	\$12	\$7	\$0
WQP1 Vessel Discharges	\$6	\$16	\$0	\$0	\$0
WQP2 Contaminants	\$3	\$2	\$2	\$2	\$2
HP1 Threat Assessment and Mitigation	\$40	\$0	\$411	\$16	\$108
HP2 Habitats of Special Importance	\$37	\$25	\$34	\$25	\$34
HP3 Invasive Species	\$11	\$13	\$11	\$11	\$11
ROP1 Regional Ocean Planning	\$87	\$95	\$98	\$98	\$98
MH1 Cultural Resource Conservation	\$92	\$92	\$92	\$92	\$92
MH2 Local and Customary Knowledge	\$90	\$90	\$90	\$90	\$90
MH3 Public Understanding of Treaty Rights	\$28	\$28	\$28	\$28	\$28
SV1 Existing Socioeconomic Information	\$0	\$39	\$0	\$0	\$0
SV2 New Socioeconomic Information	\$0	\$13	\$21	\$57	\$0
TOTAL	\$4,228	\$4,462	\$5,431	\$4,452	\$4,819

5.5 IMPLEMENTATION TABLE

The action plans in the FMP comprise a body of work that, to fully implement, would require resources well beyond what is currently available –and expected to be available – to ONMS. Cost estimates developed by OCNMS staff for each action plan indicate OCNMS would need an annual base budget ranging between \$4.2 and \$5.4 million (and a staff of approximately 40 people) in order to accomplish all of the work in the action plans. OCNMS currently operates with an annual budget of around \$1.5 million, not including in-kind support from other NOAA offices or grants from NOAA or other agencies and organizations. OCNMS staff is the equivalent of 16 full-time staff (including federal employees and contracted support services). The amount of in-kind support and grant funding OCNMS receives each year varies greatly. All of the strategies in the action plans are important in helping OCNMS meet its goals and objectives. However, given funding limitations, it was necessary to prioritize the strategies to show which are most likely to be implemented under various budget scenarios. In this way, OCNMS hopes to implement the management plan in as transparent a manner as possible.

OCNMS staff worked with the OCNMS Advisory Council, the Olympic Coast Intergovernmental Policy Council and ONMS leadership in order to develop the implementation table that follows (Table 5), showing which strategies will be high, medium and low priorities for ONMS to complete under three different hypothetical budget scenarios:

- OCNMS remains level funded
- OCNMS receives a moderate increase in base funding
- OCNMS receives a significant increase in base funding

A considerable number of OCNMS projects are grant-funded. It is difficult to predict what grant funding will be available and how much of it ONMS will receive on an annual basis. Grant funds are typically geared toward one specific activity (and cannot be put toward other activities). ONMS will use the implementation table to guide staff efforts, but acknowledge that successful acquisition of grant funding for particular projects might also influence how ONMS allocates its staff resources year to year.

5.5.1 Explanation of Implementation Table

Strategy Status

The status of the strategy indicates the amount of work completed on the strategy at the time of MPR. Certain strategies and activities have been partially or wholly implemented prior to or during the MPR process. Many of these represent ongoing initiatives that will continue. Other strategies are new as part of the updated management plan and have not been worked on at all.

Funding Scenarios 1, 2 and 3

Implementation at various budget scenarios indicates the priority of a strategy or action plan and subsequent level of effort based on resources available. As stated previously, full implementation of the management plan exceeds the resources available to OCNMS, therefore requiring some prioritization of the strategies. As more resources become available (i.e., the budget grows), a greater level of implementation is possible. This table outlines to what extent implementation could occur with OCNMS' existing resources and how increases in resources would affect the amount of implementation possible for each strategy.

Table 5 OCNMS Management Plan Implementation Table

Table Legend						
Strategy Status:	Implementation Ranking:	Necessary Partnership Coordination:	Primary Funding Sources:			
<ul style="list-style-type: none"> ● – Existing w/o significant modification ▶ – Existing w/ significant modification ○ – New or future (Not yet implemented.) 	<ul style="list-style-type: none"> H – High M – Medium L – Low 	<ul style="list-style-type: none"> ● – Not possible w/o partners ▶ – Significant reliance on partners ○ – Little reliance on partners 	<ul style="list-style-type: none"> ● – External (e.g. Grants) ▶ – Internal and External ● – Internal (increased budget) ○ – Internal (base budget) 			
Action Plans	Strategy Status	Level Funding: Scenario 1	Moderate Increase: Scenario 2	Substantial Increase: Scenario 3	Partnership Coordination	Internal/external Funding Sources
Collaborative and Coordinated Sanctuary Management						
CCM1 External Evaluation	○	L	L	M	●	●
CCM2 Coastal Treaty Tribes	●	H	H	H	●	○
CCM3 Olympic Coast IPC	●	H	H	H	●	○
CCM4 Washington State	▶	H	H	H	●	○
CCM5 Department of Interior	●	H	H	H	●	○
CCM6 US Coast Guard	●	H	H	H	●	○
CCM7 US Navy	○	H	H	H	●	○
CCM8 NMFS	▶	M	H	H	●	○
CCM9 Office of National Marine Sanctuaries	●	H	H	H	●	○
CCM10 Canadian Government	▶	L	M	M	●	▶
Community Involvement in Sanctuary Management						
COM1 Advisory Council	●	H	H	H	●	○
COM2 Marine Resource Committees	▶	M	M	M	●	○
COM3 Non-government Organizations	▶	H	H	H	●	●
Sanctuary Operations						
OPS1 Vessel Infrastructure and Operations	●	H	H	H	○	○
OPS2 Facilities	●	H	H	H	○	○
OPS3 Annual Planning	●	H	H	H	○	○
OPS4 Safe Operations	●	H	H	H	○	○
OPS5 Staffing	●	H	H	H	○	○
OPS6 Volunteer Program	●	M	H	H	●	●
OPS7 Permitting and Consultation	▶	H	H	H	○	○
OPS8 Voluntary Compliance	●	M	M	M	○	●

Table 5 (continued) OCNMS Management Plan Implementation Table

Action Plans	Strategy Status	Level Funding: Scenario 1	Moderate Increase: Scenario 2	Substantial Increase: Scenario 3	Partnership Coordination	Internal/external Funding Sources
Sanctuary Operations (continued)						
OPS9 Enforcement and Incident Response	▶	L	L	H	●	▶
OPS10 Implementation Reporting	○	H	H	H	○	○
Habitat Mapping and Classification						
MAP1 Regional Coordination	●	H	H	H	●	○
MAP2 Seafloor Habitat Mapping	●	H	H	H	▶	▶
MAP3 Habitat Classification	●	H	H	H	○	▶
MAP4 Mapping Products	○	H	H	H	●	▶
Physical and Chemical Oceanography						
OCEO1 Coastal Mooring Program	●	H	H	H	●	○
OCEO2 Hypoxia	●	M	H	H	●	○
OCEO3 Ocean Acidification	▶	H	H	H	●	●
OCEO4 Harmful Algal Blooms	●	M	M	H	●	●
Populations, Communities and Ecosystems						
ECO1 Water Column Communities	○	L	M	H	●	▶
ECO2 Intertidal	●	M	H	H	●	○
ECO3 Subtidal	○	L	M	H	●	▶
ECO4 Benthic	●	M	H	H	●	●
ECO5 Fish	○	L	L	M	●	▶
ECO6 Marine Birds	▶	M	H	H	●	▶
ECO7 Marine Mammals	▶	M	M	H	●	▶
ECO8 Stranding Network	●	L	L	M	●	▶
ECO9 Ecosystem Processes	○	M	M	H	●	▶
Data Management, Sharing and Reporting						
DATA1 Data Quality Control and Management	▶	H	H	H	○	○
DATA2 Data Distribution	●	H	H	H	○	○
DATA3 Adaptive Management	▶	L	M	H	●	○
DATA4 Condition Report	●	M	H	H	▶	○
K-12 Education						
ED1 K-12 Partnerships	○	H	H	H	●	▶

Table 5 (continued) OCNMS Management Plan Implementation Table

Action Plans	Strategy Status	Level Funding: Scenario 1	Moderate Increase: Scenario 2	Substantial Increase: Scenario 3	Partnership Coordination	Internal/external Funding Sources
K-12 Education (continued)						
ED2 Place-Based Education	▶	M	M	H	●	▶
ED3 Regional Initiatives	●	L	L	M	●	○
ED4 Using Technology	○	L	L	M	▶	●
Higher Education						
HED1 Internship Development	○	L	L	M	▶	●
HED2 Volunteer Positions	○	L	L	M	●	●
HED3 College Partnerships	○	L	L	L	●	●
Visitor Services						
VISIT1 Visitor Experience	●	L	M	H	●	●
VISIT2 Long-Range Interpretive Plan	○	M	M	M	●	●
VISIT 3 New Technology	○	L	L	L	▶	●
Community Outreach						
OUT1 Stewardship and Citizen Science	▶	L	M	M	●	▶
OUT2 Staff Presence on Outer Coast	○	L	L	M	▶	●
OUT3 Community Events	▶	M	M	M	●	○
OUT4 Community-Based Efforts	○	L	M	H	●	▶
Spills Prevention, Preparedness, Response and Restoration						
SPILL1 ATBA Management, Compliance and Monitoring	▶	H	H	H	●	●
SPILL2 Regional Vessel Management Forums	○	L	M	H	●	●
SPILL3 Regional Planning and Training Exercises	▶	H	H	H	●	▶
SPILL4 Outer Coast Trustees Working Group	●	M	M	M	●	○
SPILL5 OCNMS Organizational Response Plan	○	H	H	H	○	●
SPILL6 Damage Survey and Assessment Protocols	○	H	H	H	●	▶
Climate Change						
CLIM1 Climate Smart Sanctuary Program	○	L	L	M	▶	●
CLIM2 Sanctuary as Sentinel Site	○	M	H	H	●	●
CLIM3 Resilient Ecosystems	○	L	L	M	●	●
CLIM4 Communicating Climate Change	○	L	L	H	▶	●

Table 5 (continued) OCNMS Management Plan Implementation Table

Action Plans	Strategy Status	Level Funding: Scenario 1	Moderate Increase: Scenario 2	Substantial Increase: Scenario 3	Partnership Coordination	Internal/external Funding Sources
Marine Debris						
MD1 Assessment and Removal	▶	H	H	H	●	▶
MD2 Mitigating Impacts	▶	H	H	H	●	▶
Wildlife Disturbance						
WD1 Outreach on Wildlife Disturbance	▶	L	L	M	●	○
WD2 Overflight Restriction Zone	▶	L	L	L	●	○
WD3 Marine Mammal Disturbance	○	M	M	M	●	○
Water Quality						
WQP1 Vessel Discharges	○	H	H	H	●	▶
WQP2 Contaminants	▶	L	L	L	●	▶
Habitat Protection						
HP1 Threat Assessment and Mitigation	○	M	H	H	●	▶
HP2 Habitats of Special Importance	▶	H	H	H	●	▶
HP3 Invasive Species	▶	M	H	H	●	▶
Regional Ocean Planning						
ROP1 Regional Ocean Planning	○	L	M	H	●	▶
Maritime Heritage						
MH1 Cultural Resource Conservation	○	L	L	M	●	▶
MH2 Local and Customary Knowledge	○	L	L	M	●	○
MH3 Public Understanding of Treaty Rights	○	L	L	L	●	○
Socioeconomic Values of Sanctuary Resources						
SV1 Existing Socioeconomic Information	○	L	L	L	●	○
SV2 New Socioeconomic Information	○	L	L	L	●	●

Table Legend			
Strategy Status: ● – Existing w/o significant modification ▶ – Existing w/ significant modification ○ – New or future (Not yet implemented.)	Implementation Ranking: H – High M – Medium L – Low	Necessary Partnership Coordination: ● – Not possible w/o partners ▶ – Significant reliance on partners ○ – Little reliance on partners	Primary Funding Sources: ● – External (e.g. Grants) ▶ – Internal and External ○ – Internal (increased budget) ○ – Internal (base budget)

Partnership Coordination

Implementation of most of the strategies in the FMP will require some input or coordination from partners, particularly the Coastal Treaty Tribes, other government agencies, research institutions, and NGOs. The table outlines the level of involvement expected from partners to achieve full implementation of each strategy. Many action plans and strategies are completely dependent on involvement from other agencies or dependent on research conducted by an outside institution.

Internal/External Funding Sources

Funding for implementation of many strategies will require a mix of internal ONMS/OCNMS funds as well as funding from external sources such as grants, or in-kind work from partner agencies. The table highlights the probable source of funding as either primarily internal (either at base or increased level), external or a mix of both. The table notes where it is anticipated the current OCNMS base budget would be sufficient to fund a strategy. The table also notes where a significant increase to OCNMS' base budget would be required to fund a strategy.