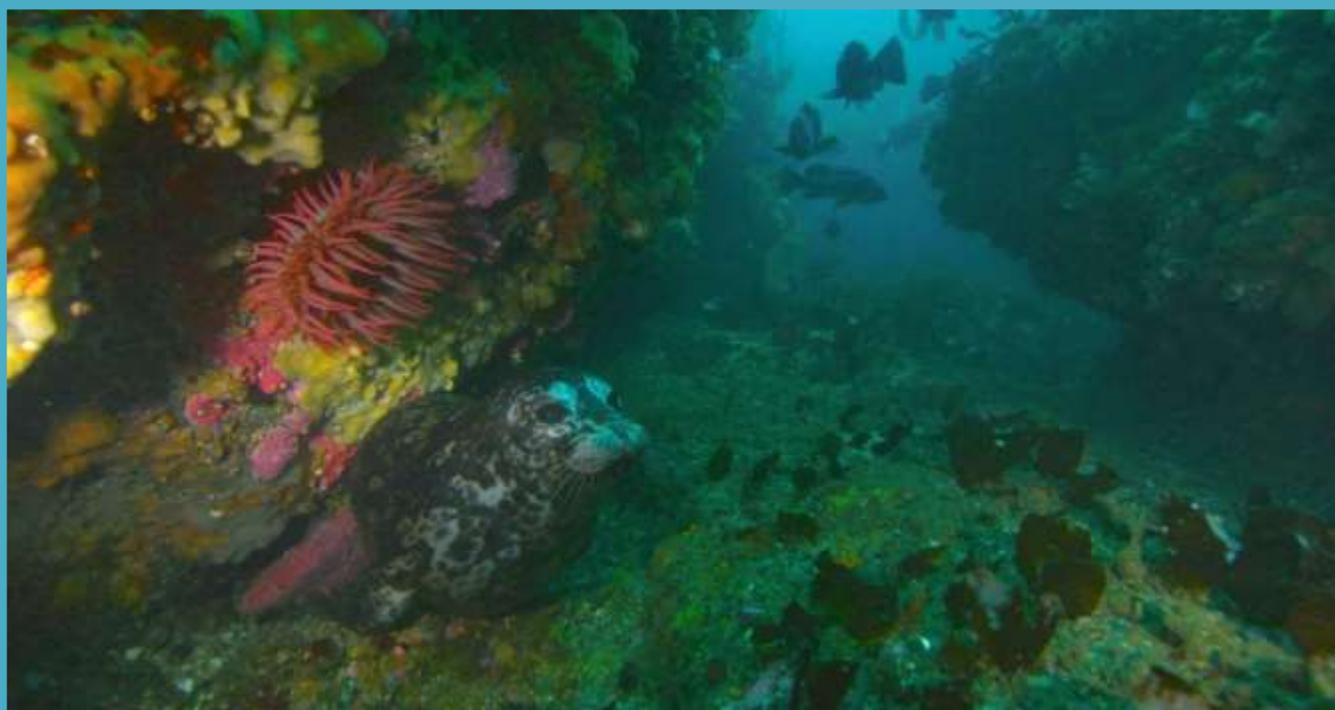


Olympic Coast National Marine Sanctuary

2016 Management Plan Implementation Report: Year Five



October 2016

Cover Photo: This Pacific harbor seal was featured in the recently produced video *Discover the Olympic Coast*. This 30 minute video introduces the viewer to the rugged richness and beauty of the Olympic Coast. It is an underwater tour led by a unique and friendly harbor seal which in real life engaged with the cinematographer Florian Graner for many incredible hours truly leading him to fabulous places around Tatoosh Island off Cape Flattery. The video is designed for children ages six through ten and is equally enticing to any adult with interest in the natural world of the stunning Olympic Coast. <http://www.sealife-productions.com/buy-dvds-blurays/discover-the-olympic-coast> (photo credit: Florian Graner, Sealife Productions).

I. Introduction

This document is the fifth annual report on implementation of Olympic Coast National Marine Sanctuary's 2011 management plan. The four previous annual reports can be found at <http://olympiccoast.noaa.gov/management/management101.html#effectiveness>. Annual management plan implementation reports are based on the federal government's fiscal year (FY). This report covers FY 2016, the period from October 1, 2015 through September 30, 2016. In 2008 Olympic Coast National Marine Sanctuary (OCNMS or sanctuary) began work to update the original 1994 management plan. The [OCNMS Final Management Plan and Environmental Assessment](#) was approved in September 2011 and related regulations were finalized on November 1, 2011 ([76 FR 67348](#)), becoming effective on December 1, 2011. Starting in FY 2011, OCNMS began basing its Annual Operating Plan on the action plans in the revised management plan and began implementation of the non-regulatory parts of the management plan prior to its final approval. FY 2011 was classified as "Year Zero" of the management plan implementation. FY 2016 is the fifth official year of implementation or "Year Five" under the revised management plan.

Management Plan Background

Three years of planning, consultation, and writing went into the development of the sanctuary's 2011 management plan and revised regulations. This work included public scoping sessions initiated in 2008; issue prioritization and development of action plans with the close involvement of the OCNMS Advisory Council (AC) and the Olympic Coast Intergovernmental Policy Council (IPC); compliance with the National Environmental Policy Act that required the development of draft and final environmental assessment documents; consideration of public comments; numerous consultations with other agencies and the Coastal Treaty Tribes; and a federal rulemaking process requiring the publication of proposed and final rules (regulations). The results are a comprehensive Final Management Plan and a revised set of sanctuary regulations published in November 2011.

The 2011 OCNMS Final Management Plan and Environmental Assessment contains information about the sanctuary's environment and resources, priority management issues, and the programs and actions proposed to address them. The management plan includes 20 action plans to guide sanctuary management in the years ahead. The action plans are grouped under these priority issues:

- Achieve effective collaborative and coordinated management
- Conduct collaborative research, assessments and monitoring to inform ecosystem-based management
- Improve ocean literacy
- Conserve natural resources in the sanctuary
- Understand the sanctuary's cultural, historical and socioeconomic significance

Each action plan contains strategies that identify a specific subject area and related activities. A sixth priority issue, treaty trust responsibility, is a stand-alone chapter in the Final Management Plan. The management plan also identifies eight outcomes with associated performance measures, which are the focus of this report.

II. Implementation Highlights

FY 2016 is “Year Five” for implementation of OCNMS’ management plan. Significant accomplishments, organized by management priority issues, are summarized below, while the table entitled “Implementation by Action Plan” summarizes progress made on all action plans and strategies.

FULFILL TREATY TRUST RESPONSIBILITY

Olympic Coast National Marine Sanctuary Leads Tribal Consultation Webinar

On November 18, 2015 as part of efforts by NOAA to share experiences on tribal consultation, staff from Olympic Coast National Marine Sanctuary presented how they implemented the NOAA government-to-government consultation policy by using a practical example illustrating informal dialogue leading to formal consultation. Forty NOAA staff participated in the webinar.

The sanctuary is located within the usual and accustomed fishing areas of four federally recognized tribes: the Hoh, Makah and Quileute tribes, and the Quinault Indian Nation (coastal treaty tribes). OCNMS and the Office of National Marine Sanctuaries (ONMS) staff communicate and consult with the coastal treaty tribes. These communications and consultations predate the sanctuary’s designation in 1994 as well as the current NOAA Tribal Consultation Policy. OCNMS presenters discussed how ONMS initiated a dialogue in 2012 with the coastal treaty tribes for a potential rulemaking that would revise and consolidate program-wide and site-specific regulations. Starting with the proposed rulemaking, speakers outlined the steps that ultimately resulted in a government-to-government meeting with the Makah Tribe in January 2015 and the establishment of a permit consultation policy specific to the Makah Tribe.

ACHIEVE EFFECTIVE AND COORDINATED MANAGEMENT

IPC Holds Annual Meeting with ONMS Director

The annual meeting of the Olympic Coast Intergovernmental Policy Council (IPC) was held in October 2015 in Taholah, Washington. NOAA was represented by the Olympic Coast National Marine Sanctuary (OCNMS) superintendent, the acting director of the Office of National Marine Sanctuaries (ONMS), the director of the West Coast Regional Office, staff from the sanctuary and the Office of Coastal Management (OCM). The focus of the meeting was to present the 2015 annual report and to discuss ongoing projects. Staff from OCNMS, OCM, and the Northwest Indian Fisheries Commission (NWIFC) presented on the 2016 objectives for the IPC Habitat Framework. This high priority project is now moving from the data collection phase to the active development of the Coastal and Marine Ecological Classification Standard habitat classification and map production; therefore, the technical team from OCNMS, OCM, and NWIFC is determining individual tasks and responsibilities, establishing periodic products for review by the Advisory Council and the Intergovernmental Policy Council, and determining a probable status report deadline.

Sanctuary Consults with U.S. Navy and National Marine Fisheries Service

Sanctuary staff has been consulting with U.S. Navy on activities related to the Northwest Test and Training Range, which includes and extend beyond sanctuary waters. National Marine Fisheries Service is also considering authorization of impacts of those activities under the Marine Mammal Protection Act. The two agencies provided a joint Sanctuary Resource Statement to Olympic Coast National Marine Sanctuary, a document that narrows the scope of analysis to activities and potential impacts to sanctuary waters and associated resources. In response, the Sanctuary Superintendent has provided recommendations to the Navy and National Marine Fisheries Service for measures to reduce injury to marine mammals and improve information available for future assessment through reporting and monitoring. The sanctuary's rationale included consideration for or avoidance of portions of sanctuary waters where impacts to marine mammals are potentially greater. The U.S. Navy provided a formal response to the sanctuary recommendations.

EPA Consults with Sanctuary on Offshore Seafood Processing

The Environmental Protection Agency (EPA) consulted with Olympic Coast National Marine Sanctuary (OCNMS) on a proposal to issue a general wastewater discharge permit to offshore seafood processors in federal waters off the Washington and Oregon coasts, which includes sanctuary waters. As directed by section 304(d) of the National Marine Sanctuary Act, the sanctuary superintendent recommended the EPA select one of several alternatives meant to address concerns about the potential impacts of this activity to water quality in the sanctuary, including the potential to exacerbate the generation of harmful algal blooms and hypoxic conditions. The EPA is reviewing the alternatives and will formally reply to the sanctuary with their

CONDUCT COLLABORATIVE RESEARCH, ASSESSMENTS AND MONITORING TO INFORM ECOSYSTEM-BASED MANAGEMENT

Sanctuary and Intergovernmental Policy Council Work Toward a Common Understanding of Coastal Habitats

In the past year significant progress was made in the development of a Habitat Framework for the Olympic Coast and adjacent areas. The IPC presented the Habitat Framework concept to ONMS Acting Director and West Coast Regional Director at the annual IPC meeting in October 2015, seeking broader NOAA support for completing the project. The IPC selected NOAA's Coastal and Marine Habitat Classification Standard (CMECS) as the basis of the framework and has received support from a number of NOAA line offices. The IPC's efforts are compatible with NOAA's goal to bring marine and coastal habitat data into a common classification scheme. It is also consistent with OCNMS's Habitat Protection Action Plan, which seeks to develop criteria to identify marine habitats of special importance. OCNMS staff, National Marine Fisheries (NMFS) staff, Olympic Coast Intergovernmental Policy Council (IPC) members' staff and subject matter experts worked together as a Habitat Framework Technical Team. The work of these subject matter experts resulted in data for two (seafloor geomorphology and sediments) of the four components of the CMECS classification. NatureServe was contracted to combine these two data layers into CMECS Ecological Marine Units (EMUs), a geophysical expression of the seafloor's structure and overlying sediments. EMUs are the first products that will test the

function and applicability of broad-scale ecosystem mapping programs within the Habitat Framework concept. The final EMU product includes the sanctuary and outer coast of Washington state.

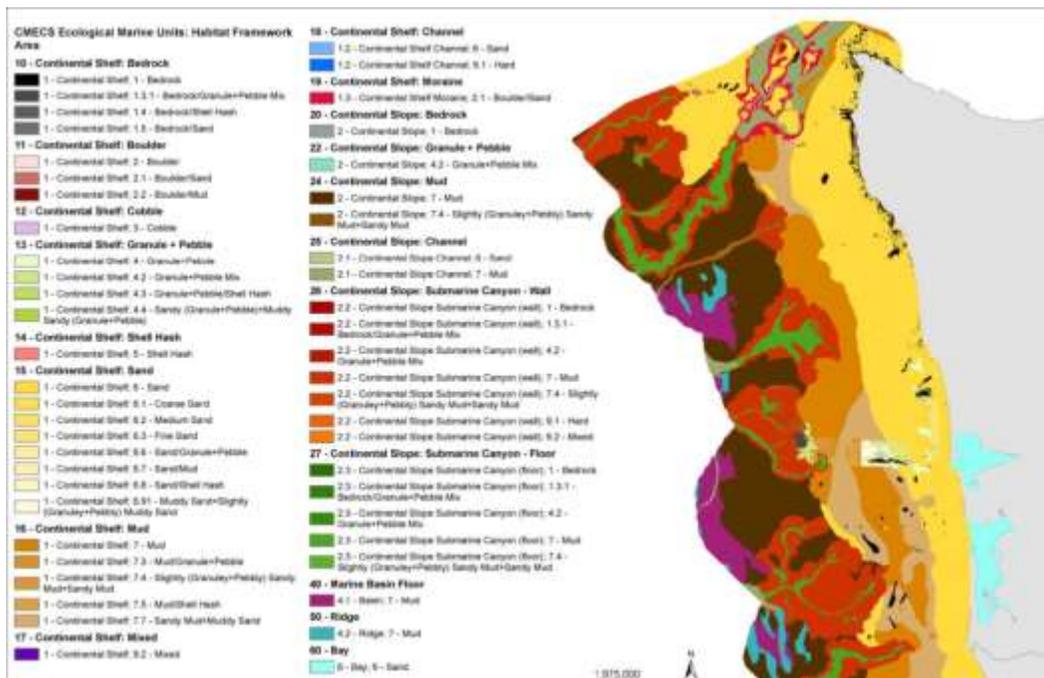


Figure 1: Draft Habitat Framework representation of Ecological Marine Units (EMU)

NOAA Ship *Rainier* Documents Dramatic Seascapes and Methane Plumes in Quinault Canyon

A team of experts from the College of Charleston, University of Washington and Oregon State University contributed to a NOAA-led, multi-disciplinary survey of Quinault Canyon in Olympic Coast National Marine Sanctuary in May 2016. The survey gathered swath bathymetry, acoustic backscatter and water column data to help inform ocean management. Surveys revealed rocky outcrops along the canyon rim and a remarkable number of methane plumes throughout the water column. The *Rainier* survey sets the stage for future ground truthing surveys by Remotely Operated Vehicles (ROVs) that will further investigate the release of methane at different depths and the presence of biogenic habitats on the previously unmapped ridges of the Quinault Canyon.

E/V *Nautilus* Provides First Images of WWII Shipwreck and Quinault Canyon Rim

Ocean Exploration Trust’s Exploration Vessel (E/V) *Nautilus* conducted the Cascadia Margin cruise June 1-19, 2016, with a focus on exploration of maritime heritage resources, methane seeps, and seafloor habitats along the Pacific Coast between Victoria, British Columbia and San Francisco, California. A sonar target



Figure 2: SS Coast Trader anchor capstan

about 30 miles west of Cape Flattery proved to be the wreck of SS *Coast Trader*, a freighter carrying newsprint that was struck by a torpedo from the Japanese submarine I-26 in June 1942. While the *Coast Trader* sank in less than an hour, the crew took to lifeboats in extreme weather and were rescued by a fishing boat crew. All except one survived. Remotely Operated Vehicles from the *Nautilus* provided the first images of the shipwreck, which was sitting upright on the seabed, substantially intact with the torpedo impact area clearly discernable.



Figure 3: Exploration of the Quinault Canyon

Another dive with the *Nautilus*'s ROV explored the sanctuary seafloor along the rim of the Quinault Canyon. The mission was to ground truth recently collected sonar mapping data, to explore various substrates and habitats identified in sonar data, and provide the first video and images of the geology and marine life from this highly productive area. In both dives, sanctuary staff participated as Scientists Ashore to provide guidance to vessel operations and direct immediate mission priorities for sampling, photography, and documentation.

NOAA Team Studies OCNMS Nearshore Habitat Survey

The Northwest Fisheries Science Center dive team devoted a week of effort in collaboration with National Marine Sanctuaries West Coast Region staff to complete subtidal dive surveys near kelp beds of Olympic Coast National Marine Sanctuary. This is the second consecutive surveying nearshore habitats within the sanctuary. In 2016, divers focused on adaptation and implementation of PISCO (Partnership for Interdisciplinary Studies of Coastal Oceans) methods that have been established for long-term monitoring of similar habitats and specifically the marine protected areas network off the California coast. Steve Lonhart, Monterey Bay National Marine Sanctuary, joined the dive crew and assisted with planning and implementation, providing his expertise gained from years of PISCO monitoring off California. Sanctuary staff assisted with planning and logistics and supported dive operations with the R/V *Tatoosh*.



Figure 4: NWFSC dive team surveying in OCNMS

Establishing an Ocean Acidification Sentinel Site for the Olympic Coast

Olympic Coast National Marine Sanctuary staff hosted partners and collaborators from many local and regional organizations and agencies, and representatives of three Coastal Treaty tribes, during a workshop at the Olympic Natural Resources Center in Forks, Washington. The workshop brought together resource managers, educators and leading experts on ocean acidification, an oceanographic phenomenon affecting the Olympic Coast that has serious implications for coastal communities, resource users and resource management entities. Four

expert panels kicked off the meeting and shared the concept of sentinel sites, existing science assets and activities that could help address ocean acidification, and education and outreach initiatives aimed at increasing public awareness before the group launched into targeted discussions. Breakout discussions focused on habitat and species' vulnerability to ocean acidification; key functions, components and applications of a sentinel site; and an ocean acidification awareness campaign for specific audiences. The highly engaging workshop format led to productive, interactive and informative discussions among participants that ultimately resulted in the group's self-declaration of an Olympic Coast Sentinel Site for Ocean Acidification. OCNMS staff will lead follow-on efforts from the workshop and will summarize and collate the workshop outputs before getting to work on early action items identified by the group for implementation in fiscal year 2017.

IMPROVE OCEAN LITERACY

Connecting Indigenous Students across the Pacific Ocean

Through NOAA's Pacific Northwest Bay Watershed and Training Program (B-WET), Suquamish Tribe, partnering with Olympic Coast National Marine Sanctuary, established Ecosystem Pen Pals, an environmental and cultural exchange program. Ecosystem Pen Pals assembled indigenous high school students from across the Pacific Rim living near National Marine Sanctuaries—from the Hawaiian Islands, American Samoa, and the western coast of Washington state—in a series of year-long meaningful watershed educational experiences and pen pal activities focusing on food sovereignty and the global issues of climate change and ocean acidification.

Students studied and documented their own natural ecosystem, producing field guides, videos and posters. They exchanged letters and corresponded through social media throughout the year, sharing ideas and information about their local ecosystems, while reinforcing writing and communication skills. Students and their families also put together "ecosystem suitcases" filled with natural and cultural artifacts that they gifted to their partner schools.

On Earth Day, students came together at a virtual and in-person "Indigenous Youth Summit on Climate Change and Ocean Change", hosted by Suquamish Tribe, OCNMS and EarthEcho International. The summit was a celebration of our blue planet and concentrated on the urgency for solution-based conversations and actions. Students from each school provided short presentations on ocean and climate change and the impacts facing their cultural and natural resources. Ecosystem Pen Pals helps promote awareness and understanding of how changes in the marine environment are affecting indigenous ecosystems, culture, economy, and traditional ways of life, and explore ways communities can take action to protect these precious resources for future generations.

Including Ecosystem Pen Pals, OCNMS continues to offer place-based education through Ocean Science and NOW (North Olympic Watershed) Science K-12 programs reaching more than 2,000 youth annually.

Students Dive into Science, Technology, Engineering and Math with Remotely Operated Vehicles

Olympic Coast National Marine Sanctuary (OCNMS) brought Remotely Operated Vehicle (ROV) education to over 100 Olympic Peninsula students through after school clubs, field trips and special events. Partnering with Feiro Marine Life Center, the afterschool underwater robotics club provided ROV education throughout the academic school year, culminating in the Kitsap Underwater Robotics Competition, where club participants placed first and fifth out of the 26 competing teams. Additional ROV education took place with coastal communities including participation in the Presidential initiative *My Brother's Keeper*, as well as student involvement through class field trips, 4-H activities and summer camps. ROV education was enhanced with the opportunity to connect remotely to the EV *Nautilus* through ship-to-shore communications as the *Nautilus* explored the rim of Quinault Canyon in sanctuary and cruised along the Cascadia margin off the west coast. Hands on experiential ROV education encourages our next generation of ocean explorers to consider education opportunities in science, technology, engineering and math.

Summer Camps Connect the Next Generation of Marine Educators, Managers and Scientists to Olympic Coast

In 2016, Olympic Coast National Marine Sanctuary (OCNMS) supported place-based summer programming reaching over 180 youth around Olympic Peninsula. OCNMS partnered with three Coastal Treaty Tribes on summer youth programming, including Hoh Tribe Hoh River Adventure Camp, Quileute Tribe Summer School with Northwest Indian College and Makah Tribe Hidasubac Youth Camp, providing opportunities for youth to explore their culture, ocean and watershed health, climate change, and marine technology. In addition to tribal summer programs, OCNMS partnered with Feiro Marine Life Center to conduct six Junior Oceanographer and Marine Tech camps in Port Angeles. These annual summer camps bring inquiry-based hands-on marine science education to local and regional youth.

New England Aquarium Features Olympic Coast in New Exhibit

The Cold Marine Gallery–Olympic Coast exhibit at New England Aquarium opened in April 2016, highlighting Olympic Coast National Marine Sanctuary. In addition to Olympic Coast, the exhibit also provides interpretive content about sister sanctuary Stellwagen Bank National Marine Sanctuary located at the mouth of Massachusetts Bay. New England Aquarium is one of the premier visitor attractions in Boston, with over 1.3 million visitors a year, and a major public education resource. Information about the exhibit and Olympic Coast National Marine Sanctuary is also featured on New England Aquarium website at <http://www.neaq.org/exhibit/olympic-coast-exhibit/>.



Figure 5: Installation of permanent OCNMS exhibit at Boston's New England Aquarium

Training the trainers for Ocean Literacy and Olympic Coast outreach

Olympic Coast National Marine Sanctuary (OCNMS) staff provided training to formal and informal educators as well as volunteers and docents in the Pacific Northwest region and beyond. From the shores of American Samoa and Hawaii to partners in Port Angeles and Ocean Shores, more than 120 formal and informal educators have a greater understanding of ocean literacy, marine debris, field investigations, and the importance of marine protected areas and Olympic Coast. Formal education trainings for sanctuary programs like Ecosystem Pen Pals and Ocean Science, provided support to regional teachers and increased their confidence in teaching marine science education aligned to Next Generation Science Standards. Informal education trainings supported NatureBridge Olympic educators in marine science, ocean acidification and marine debris, as well as provided volunteer docents at Feiro Marine Life Center and Ocean Shores Interpretive Center with talking points and NOAA resources. Overall, these partners have the potential to reach thousands of students and visitors each year with sanctuary-related messages.

CONSERVE NATURAL RESOURCES IN THE SANCTUARY

Analyzing Vessel Losses with Sanctuary

In the 1990's when Olympic Coast National Marine Sanctuary was going through its designation process, one of the largest concerns expressed by the public was the risk of oil spills. Regulations were put in place when the sanctuary was designated prohibiting not only discharges into the sanctuary, but also abandoning any structure on the seafloor. This regulation puts OCNMS in a position unique from other agencies that regulate oil spills, e.g., U. S. Coast Guard (USCG) and Washington State Department of Ecology (ECY). While the USCG and ECY respond aggressively to oil spills, once the risk to the environment from oil spills has been mitigated they do not have the authority to require the salvage of the vessel, which would prevent damage to the environment by the debris. As a first step in dealing with this management challenge, sanctuary staff has reviewed vessel incidents where vessels have been lost by sinking, grounding or capsizing.

In 2015-2016 OCNMS reviewed its Incident Database, developed better-defined criteria for tracking incidents, updated data on vessel loss based on additional research, and conducted quality assurance and control (QA/QC) on the data. We also reached out to the 13th Coast Guard District and Washington Department of Ecology Spills Program to identify additional incidents. Additional efforts were made to collect more detailed



Figure 6: Map showing the location of 43 vessels, sunk, grounded or capsized in OCNMS since the 1994 designation.

information, where it existed, for causes of the incidents. Information on lost vessels was analyzed to see if there were identifiable trends in the incidents that might inform policy recommendations. The main analysis looks at the two types of vessels (fishing and private vessels) where losses are most common. These incidents involve 22 fishing vessels and 19 private vessels.

Sanctuary Investigates Report of Ocean Dumping

The Office of National Marine Sanctuaries authorized the investigation of reported ocean dumping in the vicinity of Cape Flattery in both the Makah Tribe's usual and accustomed fishing area and within the sanctuary's boundaries. In 2013, a Makah fisherman pulled up several crushed cars in his trawl net. A survey utilizing side-scan sonar and a Remotely Operated Vehicle (ROV) was conducted to locate and document the reported debris. The sanctuary and the Makah Tribe observed the survey, which successfully located and documented additional debris. Currently, NOAA is examining the information collected and determining a course of action.

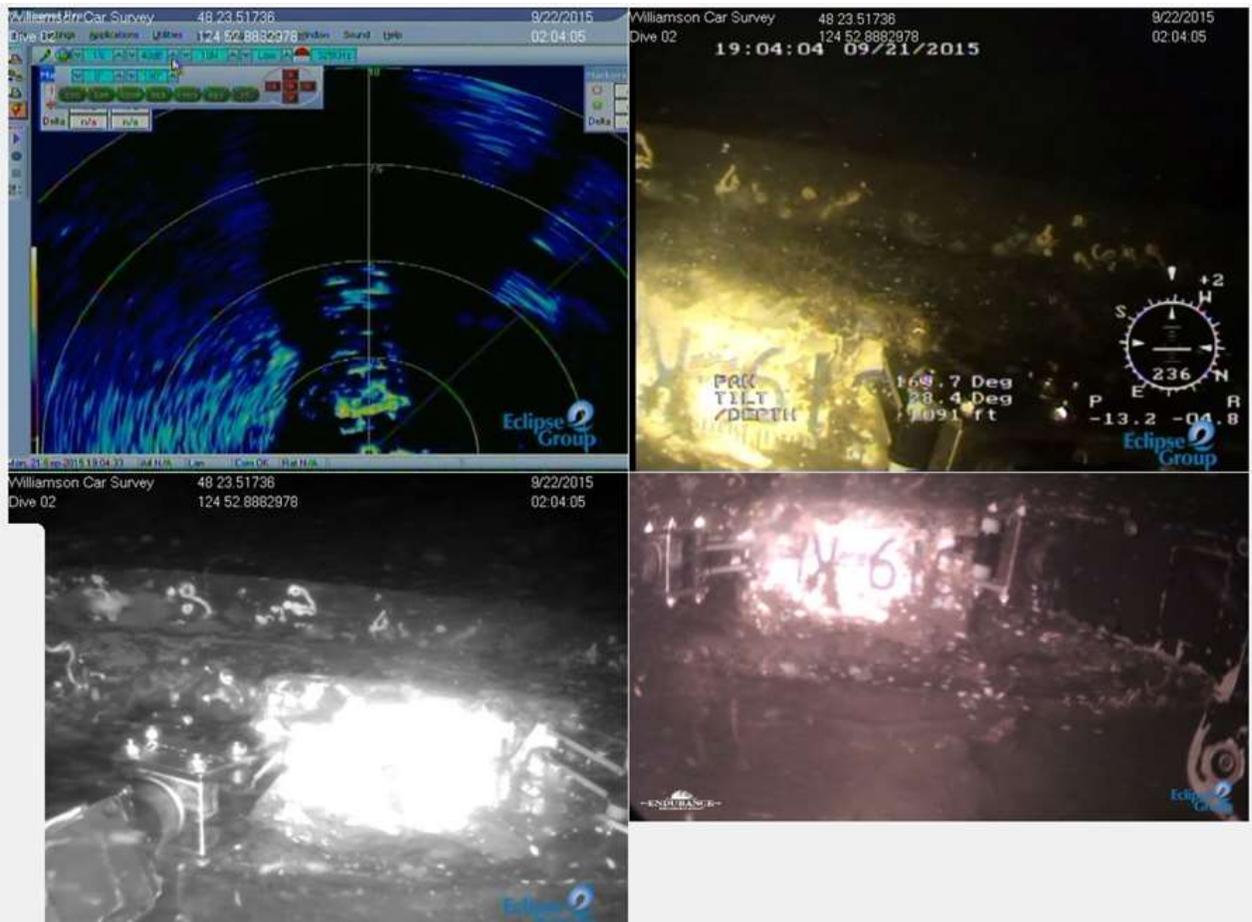


Figure 7: Imagery from NOAA contracted ROV marine debris survey in OCNMS

UNDERSTANDING THE SANCTUARY'S CULTURAL, HISTORICAL AND SOCIOECONOMIC SIGNIFICANCE

Maritime Heritage Resource Management Plan Drafted

Olympic Coast National Marine Sanctuary drafted a Maritime Heritage Resources Management Plan (MHRMP or plan) to support the sanctuary's compliance with the National Historic Preservation Act (NHPA). The plan details how OCNMS observes its federally mandated responsibilities regarding maritime heritage resource management by collaborating with partner agencies and tribes. While the primary focus of the plan is OCNMS' responsibility under the National Historic Preservation Act (NHPA), other aspects of sanctuary maritime heritage efforts are discussed. In addition to its NHPA responsibilities, OCNMS has a role in enhancing community and national understanding of the unique and rich cultures that give this area its special character. The plan advances strategies articulated in the sanctuary's 2011 maritime heritage action plan. The document also lays out the groundwork for a NHPA Section 106 programmatic agreement between OCNMS and the Washington State Department of Archeology and Historic Preservation.

Socioeconomic Importance of Olympic Coast Recreation Activities

In 2013-14, a study was conducted on the outdoor recreation activities of Washington households on the outer coast of Washington. The primary focus was on the entire outer coast of Washington to support the State's Marine Spatial Planning Initiative and on Olympic Coast National Marine Sanctuary to support its 2011 socioeconomic action plan. Socioeconomic profiles were created for the entire study area and for OCNMS. For OCNMS, socioeconomic profiles were created for sanctuary waters, sanctuary waters with a two kilometer buffer along the coast, and a small section of the Port Angeles waterfront around the sanctuary office and visitor center.

The survey was conducted using a probability based online survey. A representative sample of Washington households resulted in 5,079 responses over two waves of surveys. The results are published in four volumes that include a socioeconomic profile; economic impacts and contributions of users, recreational use and satisfaction with their experiences, and technical appendices. They will be available at <http://sanctuaries.noaa.gov/science/socioeconomic/> by the end of 2016.

FY 2016 Challenges

The overall ONMS budget has remained level funded for a number of years while fixed costs have continued to rise. This has resulted in progressively less 'discretionary' funding for OCNMS programs. OCNMS was able to temporarily overcome this in FY16 due to labor savings from the retirement of a staff member, and a gap before the position could be filled. However, this also resulted in a staffing short fall with remaining staff taking on additional duties.

The R/V *Tatoosh*, which is beyond its scheduled service life, suffered the loss of one of two of its engines. This resulted in a delay of the recovery of OCNMS' seasonal moorings.

III. Performance Measures

Performance evaluation is an integral component of the Office of National Marine Sanctuaries (ONMS) efforts to improve sanctuary management. Performance measures identified in the 2011 OCNMS management plan 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 the 2011 management plan; and 3) to identify tangible examples of how OCNMS is contributing to both the performance targets developed for the ONMS and achievement of the purposes of the National Marine Sanctuaries Act.

As the 2011 management plan is implemented, OCNMS staff will monitor these performance measures over time and collect data on progress towards their achievement. One management plan strategy, OPS 10, addresses management plan implementation reporting and includes activities that call for:

- Reporting on implementation of the management plan on an annual basis, particularly on performance measure achievement
- Annual reporting on OCNMS' response to emerging issues
- Annual documentation of clarifications, enhancements or recommended changes to existing strategies and activities

Eight outcomes and associated performance measures identified in the 2011 OCNMS management plan are listed below, and a status summary table is provided to address progress during FY 2016.

OUTCOME 1: OCNMS is recognized by its partners and constituents as an organization that effectively seeks and considers 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.

Management Plan Year	Survey activity
FY 2011 – year zero	no activity
FY 2012 – year one	survey completed
FY 2013 – year two	no activity
FY 2014 – year three	no activity
FY 2015 – year four	no activity
FY 2016 – year five	no activity

Status: In FY 2012 the University of Michigan School of Natural Resources and Environment and the Office of National Marine Sanctuaries supported a team of four graduates in an external

assessment of its institutional relationships. The external assessment addressed both Strategy CCM1: External Evaluation and Performance Measure 1. The 18-month assessment included interviews and a survey of key individuals within OCNMS' institutional network. The report is available for download at <http://www.snre.umich.edu/ecomgt/pubs/projects.htm>.

OCNMS staff considered the utility of developing a web survey tool for this effectiveness evaluation and the value of conducting annual surveys with a limited sample size, and concluded that resources are not available to conduct this on an annual basis. While the importance of this stated outcome has not changed, OCNMS currently is not able to report on this performance measure. In FY 2016 OCNMS held discussions with the University of Washington School of Marine and Environmental Affairs about a student project that would potentially repeat a similar study and evaluation in FY 2018.

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, intertidal monitoring). This measure will be evaluated on an annual basis.

Management Plan Year	Public Attendance	AC & Volunteer Hours
FY 2011 – year zero	28	17,603
FY 2012 – year one	31	20,934
FY 2013 – year two	38	18,958
FY 2014 – year three	63	22,085
FY 2015 – year four	43	22,603
FY 2016 – year five	48	21,211

Status: Year Five showed a small decrease in overall volunteer hours and an increase in public attendance at hosted events.

- 1) In FY 2016 OCNMS hosted a total of six Advisory Council meetings with 48 individuals from the public participating in one or more meetings. Meeting locations were Lacey, La Push, Port Angeles, Neah Bay, Forks and Seattle. Advisory Council members and individuals participating in Advisory Council working groups contributed an estimated cumulative total of 2,948 hours in support of OCNMS in FY 2016. Estimated hours include the efforts of Ocean Acidification Sentinel Site working groups, the Ocean Acidification Sentinel Site workshop, and the Charter Renewal Subcommittee (compared to two working groups and two subcommittees from the previous year). Advisory Council resolutions and recommendations are posted at: http://olympiccoast.noaa.gov/involved/sac/sac_actions.html.

In FY16 a joint Intergovernmental Policy Council and Sanctuary Advisory Council meeting was conducted in January 2016 in Taholah.

In FY16 a National Sanctuary Advisory Council Chairs Summit took place in Annapolis, MD on January 12-14, 2016 and was attended by the OCNMS Advisory Council Chair.

2) Volunteers contributed 18,263 hours towards OCNMS programs for Education and Outreach, Research, Resource Protection and Citizen Science. The estimated dollar value of OCNMS volunteer activity is \$ 430,276.28 (calculated at \$23.56/hour according to the Independent's Sector value of a volunteer hour https://www.independentsector.org/volunteer_time). Volunteer hours for each program and the estimated value of volunteer activity are:

- Olympic Coast Discovery Center/Education and Community Outreach – 942 hours. Estimated value of \$ 22,193.52
- COASST (dead seabird surveys) and NOAA Marine Debris shoreline monitoring – 2,488 hours. Estimated value \$ 58,617.28
- R/V *Tatoosh* Field Operations and Research –101 hours. Estimated value \$2,379.56
- Washington and International Coastal Cleanups – 14,664 hours. Estimated value \$345,483.84
- OCNMS Clerical Assistance –68 hours. Estimated value \$1,602.08

Outcome 2 was also supported by active OCNMS participation as an ex-officio representative on an outer coast marine resources committee, including attendance and presentations at meetings, planning sessions, and community forums. A primary goal of these marine resources committees is to engage local citizens in marine stewardship, education and science efforts.

OUTCOME 3: Increase the area of sanctuary seafloor where efforts to map, ground-truth, characterize, and/or analyze habitats have been completed.

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

Management Plan Year	Mapping nm ²	Ground truthing nm ²	Characterization nm ²
FY 2011 – year zero	130	86.4	128
FY 2012 – year one	16.1	331.5	86.4
FY 2013 – year two	3.9	5.2	162.4
FY 2014 – year three	3*	0	230.0
FY 2015 – year four	10	0	900.8
FY 2016 – year five	246.2	10	2,407

Status:

NOAA Ship *Rainier* mapped 246.2 nm² along the southwestern edge of OCNMS in spring 2016, capturing seafloor bathymetry, backscatter, and water column data along the shelf and flank of Quinault Canyon. Those data are being processed and will be available on the OCNMS web site in spring 2017. In addition, the E/V *Nautilus* ground truthed a narrow swath of high reflectance sonar with ROV video which is not processed yet. The R/V *Tatoosh* ground truthed 35 sites within Giants Graveyard, a 10 nm² area mapped in 2015, which is yet to be classified. Through

completion of Phase 1 of the Habitat Framework, 2,407 nm² of the sanctuary seafloor sediment and geomorphology was classified in CMECS – NOAA’s Coastal and Marine Ecological Classification Standard. In addition, the outer coast of Washington, Oregon, and Northern California were classified in CMECS.

OUTCOME 4: OCNMS 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.

Management Plan Year	Data set collected	Prior year not yet disseminated	Disseminated
FY 2011 – year zero	3 Seafloor Mapping 1 Deep Sea Coral 4 Wildlife Research 1 Coastal Habitats 1 Oceanography	pre FY11 datasets are not covered in this table	FY11 datasets have been disseminated except 1 Deep Sea Coral
FY 2012 – year one	2 Seafloor Mapping 4 Wildlife Research 1 Coastal Habitats 2 Oceanography	1 Deep Sea Coral-FY11	FY12 datasets have been disseminated, except 1 Seafloor Mapping
FY 2013 – year two	3 Seafloor Mapping 1 Wildlife Research 2 Coastal Habitats 1 Oceanography	1 Deep Sea Coral-FY11 1 Seafloor Mapping-FY12	FY13 processing is in process
FY 2014 – year three	3 Seafloor Mapping* 1 Wildlife Research 2 Coastal Habitats 1 Oceanography	1 Seafloor Mapping–FY13	FY 11 Deep Sea Coral disseminated. FY14 data processing is in progress. All seafloor mapping is with OSU Seafloor Atlas Project
FY 2015 – year four	2 Seafloor Mapping 2 Wildlife Research 2 Coastal Habitats 4 Oceanographic	None, all FY11-14 data have been disseminated	FY15 field data processing is in progress. Seafloor Atlas is complete and prepared for web.
FY 2016 – year five	4 Seafloor Mapping 1 Wildlife Research 4 Coastal Habitats 1 Oceanographic	All FY15 data have been disseminated	To be determined

Status of 2016 Data: In 2016 OCNMS collected data or performed field support services in support of habitat mapping, physical, and chemical oceanography, and populations, communities and ecosystems action plans.

Performance Measure 4 Reporting 2016	Data Collection Dates	Product	Data Sharing Places	Time to Analyze Data	Time to Disseminate Data	Final analysis, report and dissemination
MAP2 Mapping	April-May	NOAA Ship <i>Rainier</i> Survey	OCNMS webpage	30 days	60 days	Planned January 2017
MAP3 Ground truth	June	E/V <i>Nautilus</i> ground truth	OCNMS web	TBD	TBD	TBD
MAP3 Ground truth	July	R/V <i>Tatoosh</i> ground truth	OCNMS web	30 days	90 days	Planned January 2017
MAP4 Seafloor Report	July-Aug	Habitat Framework	OCNMS web CMECS web @IOCM NMFS web	60 days	120 days	TBD
OCE01 Oceanographic Mooring Data	May – Oct.	Data from 10 seasonal moorings	OCNMS webpage	30 days	30 days	Planned January 2017
ECO6 Marine Birds	June 18	Pelagic Bird Survey	OCNMS web page	10 days	60 days	July 2016
OCE03 OA	July 11-12 Aug 9-11	Kelp Forest Surveys	OCNMS web	Not an OCNMS task	Not an OCNMS task	Not an OCNMS task
ECO3 OA	June 1-2	PMEL Water Sample Collection	Not an OCNMS task	Not an OCNMS task	Not an OCNMS task	Not an OCNMS task
ECO2 Intertidal Monitoring	June 6-7	Intertidal Monitoring Makah & Quinault Reservations	MARINE database and OCNMS web	Not an OCNMS task	Not an OCNMS task	Not an OCNMS task
ECO3 Subtidal	Aug 8-12	Subtidal Dive Surveys	OCNMS web	Not an OCNMS task	Not an OCNMS task	Not an OCNMS task

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.

Management Plan Year	Professional Development (# workshops) # teachers	K-12 (# programs) # students	Interns supported	AmeriCorps supported
FY 2011 – year zero	(3) 79	(3) 2,526	2	
FY 2012 – year one	(2) 40	(4) 2,361	1	
FY 2013 – year two	(3) 61	(5) 1,705	3	
FY 2014 – year three	(4) 55	(8) 1,400+	3	
FY 2015 – year four	(6) 97	(12) 1,900+	4	1
FY 2016 – year five	(8) 132	(14) 2,000 +	3	1

Status: OCNMS staff supported a total of eight professional development workshops and trainings, reaching 132 teachers, in partnership with regional education organizations including Pacific Education Institute, Feiro Marine Life Center, NatureBridge Olympic, Suquamish Tribe

and BWET. Additionally, the first full year of Pacific Northwest Ocean Guardian School Program was completed with four Washington Schools.

OCNMS staff provided hands-on, place-based education to over 2,000 K-12 students including:

- Supported NOW Science Program providing watershed experiential education activities to over 1,000 4th and 5th grade students, in partnership with Feiro Marine Life Center;
- Led Ocean Science Trash Free Seas! Program activities, including classroom activities, field trips to Feiro Marine Life Center, Seattle Aquarium, and beach field investigations, for over 350 3rd, 4th and 5th grade Olympic Coast students;
- Conducted a five-day rafting and overnight Hoh Watershed Adventure Camp, in partnership with Hoh Tribe, for 35 Hoh Tribal members;
- Provided hands on activities for 35 Makah Tribal youth at Hidasubac Summer Youth Program;
- Provided hands on activities for 20 Quileute Tribal School youth in partnership with the Northwest Indian College as part of Quileute Tribal School summer program
- Supported six week-long summer camps in partnership with Feiro Marine Life Center, including Junior Oceanographer (ages 5-12) and Marine Tech (ages 13-15) camps for 72 students.

OCNMS staff mentored three Hollings Scholars from NOAA's Office of Education (OED). In addition, OCNMS hosted their second Washington Service Corps AmeriCorps member who served nine months with Olympic Coast National Marine Sanctuary supporting education, outreach and stewardship programs.

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.

Management Plan Year	Website visits	Facebook fans	Twitter	OCDC visits	Outreach events
FY 2011 – year zero	194,308	356		7,015	7
FY 2012 – year one	140,175	700		7,491	7
FY 2013 – year two	181,011	1,058		5,390	7
FY 2014 – year three	234,418	2,473		5,400	11
FY 2015 – year four	292,383	6,803	301	5,479	17
FY 2016 – year five	356,099	11,358	602	6,020	18

Status: OCNMS staff expands community awareness of the sanctuary, sanctuary resources, volunteer programs and other community involvement activities using multiple communication techniques.

OCNMS media and social networking tools:

- Website – statistics for the sanctuary website show an increase from 292,383 in FY 2015 to 356,099 in FY16 according to reports from the National Ocean Service. This

represents a 21.8% percent increase in web visitation.

- Facebook – the NOAA OCNMS Facebook page was created in September 2010. A milestone of 10,000 fans was reached in April 2016. The page increased its fans from 6,803 fans in 2015 to 11,358 in 2016.
- Twitter – the NOAA OCNMS Twitter page was created in July 2014. There were 601 followers in 2016, twice as many as last year.
- Google Ocean, NOAA Media Library and YouTube accounts contain OCNMS-provided resources.
- OCNMS staff provided media information (interviews, releases and advisories) for review and distribution for emerging issues, critical events, research and education activities and other newsworthy developments.

OCNMS outreach tools:

- Olympic Coast Discovery Center – OCDC served 6,020 visitors in 2016. The center was open daily Memorial Day weekend through Labor Day weekend, and weekends through October 10. It was also open at other times by appointment.
- Festivals and Events – OCNMS staff participated in 18 outreach events, including:
 - Get Into Your Sanctuary events
 - Discover the Olympic Coast film and presentation by Florian Graner attended by more than 70 people,
 - Discover the Olympic Coast film and youth activity at Port Angeles Library attended by 6 youth and their families;
 - Ruby Beach Nature Photography Workshop in partnership with Olympic National Park attended by approximately 30 participants;
 - Neah Bay Tidepool and Nature Photography Workshop for Youth attended by 15 participants from Makah Youth Program and Clallam County 4H Club;
 - 500 Sustainable Seafood and Olympic Culinary Loop placemats distributed to Olympic Peninsula restaurants;
 - Dungeness Crab & Seafood Festival (10,000 visitors);
 - Seattle Aquarium Family Discover Science Weekend (5,000 visitors);
 - Celebrate STEM! Career Fair (300 youth);
 - Beachcombers Fun Fair (1000 visitors);
 - Franklin Elementary Science Night (500 youth and family members);
 - University of Washington Environmental Career Fair (400 students);
 - Ocean and River Festival;
 - Dungeness River Festival (3,000 visitors);
 - Grays Harbor Shorebird Festival (1000 visitors);
 - Junior Ranger Day (300 visitors);
 - Port Angeles Waterfront Day (OCDC);
 - Feiro Marine Life Center’s 35th Anniversary Event;
 - Makah Days (10,000 visitors).
- Provided speakers at 8 community events, including:
 - NOAA Nancy Foster Scholar Jessica Hale presented “Washington Sea Otters: A Success Story”;
 - NOAA Fisheries Seattle Branch Chief of Protected Resources Division Lynne

- Barre presented “Orcas in Olympic Coast”;
- Reading of the bilingual children’s book The Extraordinary Voyage of Kamome: A Tsunami Boat Comes Home with co-authors Lori Dengler, an Emeritus Professor of Geology at Humboldt State University, and Amya Miller, a special adviser to the city of Rikuzentakta, as well as illustrator Arcata artist Amy Uyeki;
- Washington State Archaeologist, Rob Whitlam, presentation on archaeological maritime history in Washington State, and the role it played in the development of the state;
- OCNMS overview presentation by Education Specialist Nicole Harris at Ocean Shores Interpretive Center;
- OCNMS and Washington Coast Cleanup presentation by Education and Volunteer Stewardship Coordinator, Becca Lewis, for Klahhane Hiking Club members;
- “A Historical and Maritime Overview of OCNMS” presentation by Deputy Superintendent George Galasso at Keyport Naval Museum;
- “What’s going on with Olympic Coast National Marine Sanctuary-2016 Programs” by Deputy Superintendent George Galasso at Olympic Natural Resources Center.
- Over 1,400 volunteers celebrated Earth Day this year by turning out for the annual Washington Coast Cleanup organized by Washington CoastSavers. Volunteers hauled away more than 23 tons of plastic water bottles, household trash, lost fishing gear and other marine debris from Washington’s outer coast. OCNMS staff assisted with overall event coordination and organized the registration station and coordinated volunteers working on the Makah tribal reservation and Shi Shi Beach.
- OCNMS staff assisted with coordination of the International Coastal Cleanup and led registration on Makah tribal reservation and Shi Shi Beach. This was the fourth year that CoastSavers collaborated in this international shoreline cleanup sponsored by Ocean Conservancy, which is held in late September. On September 24, 2016, 433 volunteers removed approximately 7 tons of debris from Olympic Coast and Strait of Juan de Fuca beaches.

OUTCOME 7: OCNMS 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.

Management Plan Year	Regional planning	Drills	Training
FY 2011 – year zero	RRT/NWACP scoping meeting RRT technology working group	0	Completed by some, not all staff
FY 2012 – year one	NW Area Committee summit WDE contingency rule committee	0	Completed by some, not all staff
FY 2013 – year two	Comments on Ecology’s Contingency Rule; NW Area Committee summit; Shoreline Cleanup Assessment	0	Completed by some, not all staff

	Team task force; PS/BC Oil Spill Task Force summit.		
FY 2014 – year three	NW Area Committee summit; Shoreline Cleanup Assessment Team task force; Environmental Sensitivity Index mapping effort.	0	Completed for all key staff
FY 2015 – year four	NW Area Committee summit; Best Available Protection from Oil Spills workshop	0	Completed by some, not all staff
FY 2016 – year five	NW Area Committee summit	0	Completed for all staff

Status: No relevant, regional drills were identified for staff participation in FY2016. Staff attended the NWACP Summit. Staff updated the OCNMS Incident Response Plan (IRP) with new FY 2016 training plan, contact information and staffing recommendations. Conducted staff training on the IRP as part of an OCNMS-specific Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) class.

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.

Management Plan Year	Evaluation
FY 2011 – year zero	no activity
FY 2012 – year one	no activity
FY 2013 – year two	no activity
FY 2014 – year three	no activity
FY 2015 – year four	no activity
FY 2016 – year five	no activity

Status: While an evaluation of resource condition through a Condition Report has not been completed since 2008, ongoing monitoring and research programs implemented by OCNMS and others generate data to evaluate resource condition. OCNMS has continued its coastal mooring program, water sampling for harmful algal blooms and ocean acidification parameters, mapping and characterization of seafloor habitats, and monitoring of living resources to support future condition analysis.

IV: Year Five Management Plan Implementation Status by Action Plan/Strategy

Whereas the outcomes and performance measures provide assessment of progress on specific and, in some cases, quantifiable aspects of Olympic Coast National Marine Sanctuary accomplishments, many strategies identified in the management plan are not addressed by performance measures. The table below presents an assessment of progress made in Year Five (FY 2016) on OCNMS management plan strategies and activities.

Table Explanation

Action Plans/Strategies – The titles and numbering scheme relate to the structure of the 2011 Olympic Coast National Marine Sanctuary Final Management Plan and Environmental Assessment.

MP Priorities – Level Funding: Scenario 1 – Implementation ratings were assigned as “high” (H), “medium” (M) and “low” (L) to indicate expected progress. These ratings are taken from the Final Management Plan Implementation Table. This table was created by taking combined input from both OCNMS staff and the Advisory Council. The table included three different funding scenarios (level funding, moderate increase and substantial increase). The implementation rankings shown below represent the “level funding” scenario.

FY16AOP Status – The FY16 AOP Status column shows the annual progress for the reporting year’s Annual Operating Plan (AOP) activities. The symbols used to describe the implementation status are: Not initiated or planned (○); Initiated and 1-25% completed (◉); Initiated and 26-50%; completed (◐); Initiated and 51-75% completed (◑); or Completed (●).

In several cases an additional explanation of the meaning of these scores may be needed.

Example 1: In the case that an activity was not specifically mentioned in the AOP, it would be given a score of “Not initiated or planned (○)” even if work did occur. However, that work would be summarized under status.

Example 2: Many strategies could be considered ongoing and will never be completed. There are many examples in the Collaborative and Coordinated Management Action Plan. Many of the strategies have to do with partnerships, which we hope will be ongoing. Using as an example strategy “CCM3 Olympic Coast Intergovernmental Policy Council”, the status of “Completed (●)” refers to the completion of activities planned for FY 2016 and not the completion of the overall strategy, which will be ongoing.

Status – A brief summary of the activities that took place in the reporting period.

Implementation by Action Plan Table

Action Plans/Strategies	MP Priorities - Level Funding: Scenario 1	FY16 AOP Status	Table Legend	
			Implementation Ranking: H – High M – Medium L – Low	Reporting Status for FY 2016 Activities: ○ – Not initiated or planned ◐ – Initiated 1-25% ◑ – Initiated 26-50% ◒ – Initiated 51-75% ◓ – Completed
			Status	
A1. Collaborative and Coordinated Sanctuary Management Action Plan				
CCM1 External Evaluation	L	●	Conducted outreach to academic institutions looking for opportunities to evaluate OCNMS's related to collaborative and coordinated management.	
CCM2 Coastal Treaty Tribes	H	◑	Consulted with Coastal Treaty Tribes on the OCNMS permit consultation process and the development of a Maritime Heritage Resource Management Plan. Conducted education programs in partnership with Coastal Treaty Tribes.	
CCM3 Olympic Coast Intergovernmental Policy Council	H	◐	OCNMS continued to support the IPC Olympic Coast Habitat Framework initiative. Supported the agenda development and facilitation of the annual joint meeting of the IPA and AC. OCNMS invited the IPC to participate on the Research Coordinator interview committee.	
CCM4 Washington State	H	◑	OCNMS worked with Washington State and other partners to coordinate the NOAA Ship Rainier survey of the Quinault Canyon. Continued to support Washington Marine Spatial Planning efforts.	
CCM5 Department of Interior	H	◑	Leadership from Olympic National Park, Washington Maritime National Wildlife Refuge Complex and OCNMS met to discuss topics of mutual interest including programs and initiatives on climate change, upcoming special events such as the 100th anniversary of USFWS, and other major projects for the area. OCNMS and ONP staff coordinated on a number of projects including marine debris, ocean literacy and public outreach. OCNMS support provided training and on the water orientation for a number of ONP staff. Worked with ONP and USFWS on resource protection and permitting issues.	
CCM6 US Coast Guard	H	●	Conducted the annual meeting and briefed the new Commander of 13 th District. Reported on the implementation of the NOAA-USCG MOA. Discussed strategic priorities including vessel traffic monitoring, operational protocols, investigations of incidents within OCNMS, enforcement patrols/reporting, and USCG participation on OCNMS Advisory Council.	
CCM7 US Navy	H	◑	OCNMS completed a NMSA section 304(d) consultation with the US Navy and NMFS Office of Protected Resources on Northwest Testing and Training (NWTT) activities and related NMFS permits. OCNMS conducted outreach to the USN community by offering a presentation at the Naval Undersea Museum.	
CCM8 NMFS	M	◑	No NMFS/ONMS annual meeting occurred in FY16, communicated with NMFS staff on individual projects as well as NMFS representation on Advisory Council. Significant collaborative work on Makah whaling 304(d) consultation, evaluation of NWFSC research projects and impacts on sanctuary resources, development of IPC Habitat Framework, NWFSC subtidal surveys, and ocean acidification sentinel site workshop.	
CCM9 Office of National Marine Sanctuaries	H	●	Superintendent attended Capitol Hills Ocean Week in Washington D.C, participated in national Leadership Team meeting with a focus on the development of a ONMS Strategic Plan, attended West Coast Regional Leadership Team meeting. Staff attended regional meetings for research, resource protection and education coordinators and completed regional initiative on tourism. Advisory Council Chair attended national Advisory Council Chairs summit and participated in quarterly Chairs conference calls on key topics including enforcement, ONMS strategic plan, and tourism.	

Action Plans/Strategies	MP Priorities - Level Funding: Scenario 1	FY16 AOP Status	Table Legend	
			Implementation Ranking: H – High M – Medium L – Low	Reporting Status for FY 2016 Activities: ○ – Not initiated or planned ◐ – Initiated 1-25% ◑ – Initiated 26-50% ◒ – Initiated 51-75% ● – Completed
			Status	
CCM10 Canadian Government	L	●	Participated in Commission For Environmental Cooperation (CEC) meetings and conference calls to develop three transboundary projects on climate change, with Pacific NW focus on conducting a rapid assessment of vulnerability to climate change. Worked with CEC organizers to scope out PNW workshop which will be held December 2016.	
A2. Community Involvement in Sanctuary Management Action Plan				
COM1 Advisory Council	H	●	Six AC meetings conducted, all open to public participation (Lacey, La Push, Port Angeles, Neah Bay, Forks, and Seattle); recruitment of new AC members, AC 2016 Work Plan implementation, including work by the Ocean Acidification Sentinel Site Working Group and SAC Charter Renewal Subcommittee; AC Chair participated in National Chairs Summit January 2016 in Annapolis, MD. Advisory council members and working groups contributed 2,948 hours.	
COM2 Marine Resource Committees	M	◑	Attended Outer Coast Marine Resources Committee annual summit. OCNMS worked with the MPC MRC on a number of community-based education, stewardship and research programs. Worked with NPC MRC to finalize the food web curriculum complementing Florian Graner's Discover Olympic Coast video. Distributed video with MRC provided flash drives to 12-15 coastal schools; Worked with MRC to secure teacher funding to support Remotely Operated Vehicle clubs and curriculum within the NPCMRC area (Neah Bay, Forks, QTS, Hoh, Queets Clearwater).	
COM3 Non-government Organizations	H	●	Provided ongoing support to Washington CoastSavers events and strategic development. Actively recruited volunteers, led registration (Neah Bay) for Washington Coast Cleanup and International Coastal Cleanup events; OCNMS Washington Service Corps AmeriCorps supported Washington CoastSavers fundraising activities; Participated in Washington Clean Coast Alliance regular conference calls and annual strategic planning meeting; Supported first Hoh Youth Surf Camp in partnership with Warm Currents and Surfriders Foundation; Supported COASST volunteer recruitment and implementation of their marine debris monitoring project.	
A3. Sanctuary Operations Action Plan				
OPS1 Vessel Infrastructure and Operations	H	●	Completed a successful yard period focused on preventative maintenance on the R/V <i>Tatoosh</i> ; evaluated and overhauled the hydraulics, replaced fuel lines on port engine, restored sound insulation in engine compartment, bore/tapped bolt for port aftercooler, capped safety rail receiving mounts, removed/repared/modified port clutch assembly, inspected fuel tank, and repaired the flood light. This maintenance ensured the <i>Tatoosh</i> remained in working condition throughout most of the field season. FY16 emergency repairs included the port jet steering, and a full replacement of the port engine. Finalized vessel requirements and submitted to ONMS small boat program to have them turned into Operational Specifications - a critical step in development of a replacement vessel.	
OPS2 Facilities	H	●	Provided tour of the OCNMS offices for the Studio Cascade group to better inform their efforts to elicit public opinion regarding the City Pier renovations planned as part of the City's Waterfront Transportation Improvement Plan. Participated in numerous workshops and meetings with Feiro to discuss the feasibility of a Port Angeles Marine Education and Visitor's Center on the City Pier. Attended the public forum by Studio Cascade and provided input into the Feiro process. Finalized the NOAA requirement for space. Developed language to accompany revised space requirements, including Delineated Area and provided to GSA and NOAA Real Property Division representatives resulting in the process moving forward to secure a long-term lease by November, 2017.	
OPS3 Annual Planning	H	●	Prepared and executed FY 2016 OCNMS budget and ensured efficient obligation of funds in support of identified management	

Action Plans/Strategies	MP Priorities - Level Funding: Scenario 1	FY16 AOP Status	Table Legend	
			Implementation Ranking: H – High M – Medium L – Low	Reporting Status for FY 2016 Activities: ○ – Not initiated or planned ◐ – Initiated 1-25% ◑ – Initiated 26-50% ◒ – Initiated 51-75% ● – Completed
			Status	
				plan priorities. Budget was planned and executed according to the FY16 ONMS guidance, and was based largely on continuing existing projects, supporting projects with partner support, as well as feedback from the AC and IPC on the "Draft FY 2016 Olympic Coast National Marine Sanctuary Management Plan Implementation Priorities" document. Managed and executed other funds including funds from the NOAA Marine Debris Program, the B-WET program, and ONMS West Coast Region. All of these funds were utilized in support of OCNMS programs and priorities.
OPS4 Safe Operations	H	●		Regularly updated and maintained the OCNMS Continuity of Operations Plan (COOP) resulting in both OCNMS and HQ having the most up-to-date information readily available in case of an emergency. Successfully participated in NOAA-wide Emergency Notification System test. Conducted monthly safety inspections of facilities and vessels. Staff completed required training and drills, including the "Washington Shake Up" earthquake drill.
OPS5 Staffing	H	◑		Almost completed personnel action to hire new Sanctuary Research Coordinator. Contracted support services to support programs for Education & Outreach, Oceanographic Monitoring, Community Outreach, and IT services.
OPS6 Volunteer Program	M	◑		Recruit and trained 5 volunteers for Olympic Coast Discovery Center, 1,833 volunteers for Washington CoastSavers cleanups, and maintenance of 13 marine debris monitoring sites; Engaged volunteers in other programs and field work, such as intertidal monitoring, seabird surveys, R/V Tatoosh operations, education and outreach events, and database for ATBA vessel compliance. Supported 18,263 volunteer hours across all active programs.
OPS7 Permitting and Consultation	H	●		Issued 5 OCNMS permits and 1 permit amendment in FY2016; initiated processing and consultations on 4 outstanding permit applications in FY2016; collaborated in review and issuance of 3 MULTI-site permits. Participated in 3 of 4 quarterly Permit Coordinators conference calls. Drafted briefings on permit activity for the bi-monthly Office Report to the Advisory Council. Maintained up-to-date records in the OSPREY database. Communicated with Quileute and Hoh Tribes and Quinalt Indian Nation on permit consultation procedures.
OPS8 Voluntary Compliance	M	●		At the request of the Canadian Coast Guard the OCNMS ATBA flyer was updated to document management of OCNMS vessel management from Marine Communications and Traffic Services (MCTS) Tofino to MCTS Prince Rupert.
OPS9 Enforcement	L	◑		The enforcement Law Enforcement Technical Advisory Committee (LETAC) conducted two bi-annual meeting in November 2015 and March 2016. At the meetings the status of investigations were reviewed. Completed a draft report on the analysis of vessels abandoned in OCNMS since designation and began review of the report.
OPS10 Implementation Reporting	H	●		The sanctuary completed the 2015 Management Plan Implementation Report, documenting progress on action plans and reporting on performance measures. The implementation report and a draft FY 2016 priorities document were provided to the AC and IPC as background documents. The AC was briefed on these documents at the November 2015 AC meeting. These two documents were meant as a package that would allow the AC and IPC to participate in OCNMS planning in a meaningful manner.
B1. Habitat Mapping and Classification Action Plan				
MAP1 Regional Coordination	H	●		Developed partnerships with 5 separate NOAA Line Offices; 3 universities; 3 independent contractors; 2 software companies; and Washington State government to assemble a uniquely trained support staff for collection of sonar data from bathymetry, backscatter, and methane hydrate seeps in the unexplored Quinalt and Quileute Canyons of Washington State.
MAP2 Seafloor Habitat Mapping	H	◑		With more than 40 ground truth samples and video, we classified Quileute Needles and Giants Graveyard using the newly

Action Plans/Strategies	MP Priorities - Level Funding: Scenario 1	FY16 AOP Status	Table Legend	
			Implementation Ranking: H – High M – Medium L – Low	Reporting Status for FY 2016 Activities: ○ – Not initiated or planned ◉ – Initiated 1-25% ◐ – Initiated 26-50% ◑ – Initiated 51-75% ● – Completed
			Status	
			developed drop camera and underwater light, in order to integrate the RV <i>Tatoosh</i> mapping into the Washington Outer Coast Seafloor Atlas.	
MAP3 Habitat Classification	H	●	The Washington State Seafloor Atlas v1 is complete and posted on the OCNMS web in two components: 1) the localized OCNMS data comprised of 35 surveys, and 2) the Surficial Geologic Habitat (SGH) created by OSU. Through a contract between Northwest Indian Fisheries Commission and NatureServe, the Atlas has been rendered into Olympic Ecological Marine Units for the Habitat Framework.	
MAP4 Mapping Products	H	●	The Washington State Seafloor Atlas v1 is complete and posted on the OCNMS web and GIS and PDF layers are available there for download. Through a contract between Northwest Indian Fisheries Commission and NatureServe, the Atlas has been rendered into Olympic Ecological Marine Units for the Habitat Framework.	
B2. Physical and Chemical Oceanography Action Plan				
OCEO1 Coastal Mooring Program	H	◑	Successfully deployed seasonal 10-buoy mooring network in May, 2016. Servicing/data downloads occurred approximately every 4-6 weeks. Post-processing of sensor data underway.	
OCEO2 Hypoxia	M	●	Continued monitoring hypoxia through OCNMS moorings program. Provided notification to the WA-OR Hypoxia network on low oxygen levels recorded on CTD casts.	
OCEO3 Ocean Acidification	H	●	All mooring data provided to PMEL in support of algorithm development. Collaborated with University of Chicago on a study looking at kelp beds and ocean acidification.	
OCEO4 Harmful Algal Blooms	M	●	Supported Quileute NR and NWFSC water sampling for HABs. Participated on Steering Committee for ORHAB reorganization.	
B3. Populations, Communities and Ecosystems Action Plan				
ECO1 Water Column Communities	L	●	Two ARMS (autonomous reef monitoring structures) deployed by NWFSC divers adjacent to USCG pier in Neah Bay with summer 2018 retrieval planned. Support letter provided for NSF/LTER proposal led by UW scientists.	
ECO2 Intertidal	M	●	Multi-year agreements signed with Makah and Quinault. Rocky intertidal monitoring completed at two sites and MARINE database entry completed. No sand monitoring or tribal internship program engagement was completed due to scheduling and staffing limitations.	
ECO3 Subtidal	L	●	Subtidal dive surveys completed by NOAA/NWFSC, with regional sanctuary collaboration with Steve Lonhart (MBNMS) to assist with implementing/adapting PISCO protocols to Olympic Coast. Participated in preliminary data visualization discussions.	
ECO4 Benthic	M	◉	Collaborated with NOAA/NCCOS on Pacific Crossing habitat recovery reporting; analysis and reporting initiated but not completed in FY 2016. See HP1	
ECO5 Fish	L	○	No activities planned for FY 2016.	
ECO6 Marine Birds	M	◉	Monthly pelagic seabird surveys coordinated, with survey completed in June. Sea state or vessel problems prevented surveys in July, August, and September. USFWS was contacted but not interested in additional UAS testing in FY 2016. COASST program supported through assistance with volunteer recruitment.	
ECO7 Marine Mammals	M	●	Participated in annual sea otter survey with one OCNMS staff stationed at Duk Point. Provided editorial review of NCCOS predictive mapping analysis for seabirds and marine mammals published in March 2016. OCNMS web updates have not been completed.	

Action Plans/Strategies	MP Priorities - Level Funding: Scenario 1	FY16 AOP Status	Table Legend	
			Implementation Ranking: H – High M – Medium L – Low	Reporting Status for FY 2016 Activities: ○ – Not initiated or planned ◉ – Initiated 1-25% ◐ – Initiated 26-50% ◑ – Initiated 51-75% ● – Completed
			Status	
ECO8 Stranding Network	L	●	Fielded stranding network calls and directed callers toward appropriate action. Provided Olympic National Park rangers and interpretive staff with training on stranding reporting procedures. Responded to 2 events in Port Angeles area for Stranding Network.	
ECO9 Ecosystem Processes	M	◉	Met with regional sanctuary staff on recent advances in Condition Report production, including relevant indicators. Science Needs documents were not updated in FY 2016. See DATA4	
B4. Data Management, Sharing and Reporting Action Plan				
DATA1 Data Quality Control and Management	H	●	Reported on the OCNMS web and to the Advisory Council regarding the 2015 field season projects: Sea Otter Census; National Marine Debris database; Intertidal Monitoring; Moorings; Subtidal Surveys for Sea Otter Effects; and Multibeam Seafloor Mapping.	
DATA2 Data Distribution	H	●	OCNMS website updated with new mapping information and Outer Coast Atlas. Web updates for Habitat Framework awaiting availability of preliminary products for public distribution.	
DATA3 Adaptive Management	L	○	Science Needs updates were not accomplished due to limited availability of staff time.	
DATA4 Condition Report	M	◉	Research staff met with regional sanctuary staff for briefing on recent advances in Condition Report production, including relevant indicators.	
C1. K-12 Education Action Plan				
ED1 K-12 Partnerships	H	●	Administered grants and managed Pacific Northwest BWET Program which provided \$450,238 in FY16 awards to Washington and Oregon organizations to assist with community-based environmental education programs; Provided regular and ongoing support to nine organizations who received FY 2015 Pacific Northwest BWET funding to provide Meaningful Watershed Educational Experiences (MWEEs) and teacher professional development that support MWEE projects in Washington and Oregon; Supported 8 teacher professional development workshops reaching 132 teachers through Ocean Science (PEI, Feiro), Ecosystem Pen Pals (Suquamish Tribe, BWET), PEI and NatureBridge; Completed first full year of Pacific Northwest Ocean Guardian School Program with four Washington schools; Secured Hands on the Land funds to get outer coast students on-the-water experiences in the sanctuary associated with Every Kid in the Park Presidential Initiative.	
ED2 Place-Based Education	M	●	<p>Provided staff support and educational resources for place-based K-12 education programs including:</p> <ul style="list-style-type: none"> • Ocean Science - a partnership with Feiro Marine Life Center supporting approximately 350 outer coast 3rd – 6th grade students, including tribal youth, and 20 teachers through classroom activities, field investigations, visits to marine science centers, and rigorous place-based teacher professional development workshops. • N.O.W. (North Olympic Watershed) Science - a partnership with Feiro Marine Life Center, Olympic National Park and NatureBridge supporting approximately 1300 4th-8th grade students and 50 teachers from Port Angeles, Sequim and Joyce through meaningful watershed educational experiences. • Ecosystem Pen Pals – a partnership with Suquamish Tribe supporting approximately 100 Washington high school students from Suquamish, Muckleshoot, Makah and Quileute tribes, Quinault Indian Nation and Clallam Bay, indigenous students of Hawaii and American Samoa, and their teachers. This pilot program connected indigenous communities significant to Olympic Coast, Hawaiian Islands Humpback Whale and American Samoa national marine sanctuaries and Papahānaumokuākea Marine National Monument using place-based hands-on culturally significant activities. • EarthEcho Shell Shocked – a partnership with EarthEcho International providing Neah Bay High School students with an at-sea 	

Action Plans/Strategies	MP Priorities - Level Funding: Scenario 1	FY16 AOP Status	Table Legend	
			Implementation Ranking: H – High M – Medium L – Low	Reporting Status for FY 2016 Activities: ○ – Not initiated or planned ◉ – Initiated 1-25% ◐ – Initiated 26-50% ◑ – Initiated 51-75% ● – Completed
			Status	
			opportunity to investigate water quality and plankton populations, changing ocean conditions and their impact on Makah cultural/natural resources and food sovereignty. • Remotely Operated Vehicle (ROV) Club – a partnership with Feiro Marine Life Center supporting 12 middle and high school students from Port Angeles and Sequim in hands-on STEM (Science Technology Engineering and Math) activities. • My Brother’s Keeper Presidential Initiative ROV workshop – in partnership with University of Washington and MATE, OCNMS staff hosted a one-day ROV workshop for Washington Coastal Treaty Tribe’s high school aged youth at Olympic Natural Resources Center. • Coordinated E/V <i>Nautilus</i> Ship to Shore outreach activities, including a featured program with Taholah High School, as well as programs with Junior Oceanographer and Marine STEM summer camps. • Junior Oceanographer and Marine Tech summer youth programs – a partnership with Feiro Marine Life Center engaging 80 youth ages 5-15 years old in hands-on Ocean Literacy and STEM summer camp activities. • Supported Quileute summer school and Makah Hi•dasubač Summer Camp with ROV hands-on activities. • Second annual Hoh River Watershed Adventure Camp - a partnership with Hoh Natural Resources engaging 35 Hoh Tribal members and ten staff. The five-day camp river rafting camp was focused on connecting Hoh Tribal participants with their culture, treaty rights, traditional resources and harvesting, as well as climate change and its effects on their resource sustainability. • Partnered with Warm Currents to offer first Hoh Tribe Youth Surf Camp.	
ED3 Regional Initiatives	L	●	Participated in regional collaboration meetings with members of NOAA Pacific Northwest outreach team, West Sound STEM, Olympic National Park, Pacific Ocean Education Team (POET), Northwest Indian College, NANOOS, and PNW B-WET and Ocean Guardian awardees (Washington and Oregon); Initiated and secured funding for Every Kid in the Park on-the-water opportunities in Olympic Coast National Marine Sanctuary.	
ED4 Using Technology	L	●	Co-hosted “Indigenous Youth Summit on Climate Change and Ocean Change” (virtual and in-person summit) with Suquamish Tribe and EarthEcho International. The summit involved approximately 100 youth from Washington, Hawaii and American Samoa was a celebration of our blue planet and concentrated on the urgency for solution-based conversations and actions; Collaborated with NOAA’s Ocean Acidification Program and EarthEcho to present “National Marine Sanctuaries: Sentinels of a Changing Ocean” to middle and high school students across the nation during a live-streamed webinar; Provided opportunities for youth to participate in E/V <i>Nautilus</i> Live ship-to-shore activities; Shared and supported SOARCE (Sharing Ocean Acidification Resources for Communicators and Educators) webinar series.	
C2. Higher Education Action Plan				
HED1 Internship Development	L	●	Supported three Hollings Scholars, supporting Education and Maritime Heritage programs, as well as a Nancy Foster Program fellow supporting Research activities.	
HED2 Volunteer Positions	L	●	Provided support and training to Washington Service Corps AmeriCorps member acting as OCNMS Education and Stewardship Specialist. Her efforts supported beach cleanups that removed over 20 tons of debris from Washington coastal beaches, directly reached over 2,000 students in ocean stewardship outreach activities, and provided outreach at festivals attended by over 20,000 people.	
HED3 College Partnerships	L	●	Staffed booths at Port Angeles Library Celebrate STEM! Career Fair (300 youth), University of Washington Environmental Career	

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			Fair (400 students), and Peninsula College; Provided academic credit and professional development at 8 teacher workshops. Supported on-the-water activities aboard R/V <i>Tatoosh</i> and research based presentations for Peninsula College students.	
C3. Visitor Services Action Plan				
VISIT1 Visitor Experience	L	●	Olympic Coast Discovery Center (OCDC) was open daily 10-5 from Memorial Day until Labor Day, and weekends through mid-October (Dungeness Crab and Seafood Festival) with more than 5,800 visitors; Trained 5 new volunteers to support OCDC; Developed Port Angeles Walking Tour brochure in partnership with Feiro Marine Life Center, Elwha Klallam Heritage Center, Museum at the Carnegie, Port Angeles Fine Arts Center and Olympic National Park; Participated in monthly Olympic Peninsula Tourism Council meetings and hosted a booth and participated in annual Olympic Peninsula Tourism Summit.	
VISIT2 Long-Range Interpretive Plan	M	◑	Install kiosk at Forks Visitor Center. Kalaloch Lodge kiosk is delivered and ready for installation which will happen as soon as technical issues are resolved at the lodge.	
VISIT 3 New Technology	L	●	Staff reviewed and updated OCNMS website content. Headquarters will furnish a new look in the near future. Staff maintained and enhanced OCNMS website (357,000+ website visits), Facebook (11,000 + fans), Twitter (~200 followers), You Tube (new OCNMS focused Earth is Blue videos), Yelp and Trip Advisor.	
C4. Community Outreach Action Plan				
OUT1 Stewardship and Citizen Science	L	●	Worked with CoastSavers on cleanup planning, implementation, fundraising, community events, and strategic planning. See MD2. Supported COASST by recruiting for local training events and collaboration on development of new COASST marine debris monitoring project. Continued OCNMS-led debris monitoring.	
OUT2 Staff Presence on Outer Coast	L	○	No activities identified for FY 2016.	
OUT3 Community Events	M	●	Staffed booths at 18 festivals and special events including: <ul style="list-style-type: none"> • Get Into Your Sanctuary events - Discover the Olympic Coast film and presentation by Florian Graner, Discover the Olympic Coast film and youth activity, Ruby Beach Nature Photography Workshop in partnership with Olympic National Park, Neah Bay Tide pool and Nature Photography Workshop for Youth attended by Makah Youth Program and Clallam County 4H Club, distributed 500 Sustainable Seafood and Olympic Culinary Loop placemats • Dungeness Crab & Seafood Festival (10,000 visitors) • Seattle Aquarium Family Discover Science Weekend (5,000 visitors) • Celebrate STEM! Career Fair (300 youth) • Beachcombers Fun Fair (1000 visitors) • Franklin Elementary Science Night (500 youth and family members) • University of Washington Environmental Career Fair (400 students) • Ocean and River Festival • Dungeness River Festival (3,000 visitors) • Grays Harbor Shorebird Festival (1000 visitors) • Junior Ranger Day (300 visitors) • Port Angeles Waterfront Day (OCDC) • Feiro Marine Life Center's 35th Anniversary Event 	

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				<ul style="list-style-type: none"> • Makah Days (10,000 visitors) Hosted/ presented at 8 speakers series events: <ul style="list-style-type: none"> • “Washington Sea Otters: A Success Story”. • “Orcas in Olympic Coast”. • Reading of the bilingual children’s book The Extraordinary Voyage of Kamome: A Tsunami Boat Comes Home with co-authors Lori Dengler and Amya Miller, and illustrator Amy Uyeki. • Washington State Archaeologist, Rob Whitlam, presentation on archaeological maritime history in Washington State. • OCNMS overview presentation at Ocean Shores Interpretive Center. • OCNMS and Washington Coast Cleanup presentation for Klahhane Hiking Club members. • “A Historical and Maritime Overview of OCNMS” at Keyport Naval Undersea Museum. • “What’s going on with Olympic Coast National Marine Sanctuary-2016 Programs” at Olympic Natural Resources Center.
OUT4 Community-Based Efforts	L	●		Supported Olympic Coast marine resource committee (MRC) opportunities for community-based education, stewardship and research programs. Worked with NPC MRC to finalize the food web curriculum complementing Florian Graner's Discover Olympic Coast video. Distributed video with MRC provided flash drives to 12-15 coastal schools; Worked with MRC to secure teacher funding to support Remotely Operated Vehicle clubs and curriculum within the NPCMRC area (Neah Bay, Forks, QTS, Hoh, Queets Clearwater) Represented Ocean Science program for funding opportunity; Used the OCNMS website (Calendar of Events, etc.), e-mail listserv, social media and other media to communicate the efforts of community-based organizations working on ocean issues in the sanctuary region.
D1. Spills Prevention, Preparedness, Response and Restoration Action Plan				
SPILL1 ATBA Management, Compliance and Monitoring	H	●		OCNMS completed a 2015 ATBA compliance report and posted it on its website. OCNMS provided summary vessel monitoring data in a format that supports Washington State's marine spatial planning efforts. Identified vessels in the ATBA that were non-compliant with International Maritime Organization's recommendations and, in cooperation with the Captain of the Port, sent correspondence seeking voluntary compliance.
SPILL2 Regional Vessel Management Forums	L	○		No activities identified for FY 2016.
SPILL3 Regional Planning and Training Exercises	H	◉		Participated in the 5th Annual NWACP Summit. No drills were available for staff participation.
SPILL4 Outer Coast Trustees Working Group	M	○		No activities identified for FY 2016.
SPILL5 OCNMS Organizational Response Plan	H	●		Updated the OCNMS incident response plan (IRP), with 2016 training recommendations. OCNMS developed and implemented in-house oil spill response training.
SPILL6 Damage Survey and Assessment Protocols	H	◑		Worked on an Incident Assessment Report for the Cape Flattery submerged marine debris incident.
D2. Climate Change Action Plan				
CLIM1 Climate Smart Sanctuary Program	L	●		Actively participated in the Office of National Marine Sanctuary process to revise the Climate Smart Certification process. Ensured

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			information compiled for Climate Smart Sanctuary certification is widely distributed to OCNMS partners and the public.	
CLIM2 Sanctuary as Sentinel Site	M	●	Held meetings of the SAC Working Group on OA. Planned and held Ocean Acidification Sentinel Site (OASes) Workshop. The workshop brought together resource managers, educators and leading experts on ocean acidification, which facilitated productive, interactive and informative discussions among participants that ultimately resulted in the group's self-declaration of an Olympic Coast Sentinel Site for OA. Efforts to establish an OA sentinel site on the Olympic Coast have catalyzed the interest and involvement of many partners to work together to collectively address the increasing threat of OA in Washington's outer coastal waters and monitor impacts to marine ecosystems within and adjacent to OCNMS.	
CLIM3 Resilient Ecosystems	L	◑	Participated in the Ocean Climate Summit in San Francisco. Participated in the Commission on Environmental Cooperation's West Coast MPA and Climate workshop resulting in the CEC offering to fully support a pilot rapid vulnerability assessment in the PNW.	
CLIM4 Communicating Climate Change	L	●	Led NOW Science ocean acidification (OA) activities for Port Angeles, Sequim and Joyce 5th grade students; Supported Hoh Watershed Adventure Camp focused on Hoh Tribal culture, treaty rights, traditional resources and harvesting, as well as climate change and its effects on their resource sustainability; Supported Philippe Cousteau's EarthEcho International outreach team, over several years, to develop "Earth Echo Expedition: Shell Shocked" ocean acidification classroom resources. The Expedition highlighted the efforts of local youth and community leaders who are tackling the issue of ocean acidification through a variety of programs and local solutions; Sanctuary education staff attended 15 weeks of National Network for Ocean and Climate Change Interpretation (NNOCCI) training; Collaborated with NOAA's Ocean Acidification Program and EarthEcho to present "National Marine Sanctuaries: Sentinels of a Changing Ocean" to middle and high school students across the nation during a live-streamed webinar; Developed and shared OA outreach materials with OCNMS and Pacific Northwest BWET partners, including PowerPoints, hands-on and classroom activities; Provided training to Olympic Coast Discovery Center volunteers regarding climate change and ocean acidification.	
D3. Marine Debris Action Plan				
MD1 Submerged or Floating Debris	H	◑	Monitored derelict crab gear removal projects with TNC and Quinault and Quileute fisheries, with spotting surveys supported by sanctuary permit. Shared funding opportunity announcements with regional partners. An Incident Assessment Report for documented submerged marine debris off of Cape Flattery is being conducted.	
MD2 Beach Debris	H	●	Coordinated and staffed Hobuck Beach registration station for April and September CoastSavers cleanups. Participated in CoastSavers strategic and event planning, community events and fundraising. Led cleanup at remote sites during CoastSavers events. Continued shoreline debris monitoring project.	
D4. Wildlife Disturbance Action Plan				
WD1 Outreach on Wildlife Disturbance	L	○	No activities planned for FY 2016.	
WD2 Overflight Restriction Zone	L	●	ONP rangers trained on reporting observations of low flying aircraft.	
WD3 Marine Mammal Disturbance	M	◑	OCNMS's NMSA 304(d) consultation with the USN and NMFS Office of Protected Resources focused on marine mammal disturbance from USN testing and training activities. OCNMS's NMSA 304(d) consultation with NMFS Office of Protected Resources on Makah Whaling focused on disturbance of seabird colonies and pinniped haulouts from whaling activity.	
D5. Water Quality Action Plan				

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			Status	
WQP1 Vessel Discharges	H	●	OCNMS's NMSA 304(d) consultation with the EPA on the proposed general permit for offshore seafood processing focused on water quality concerns.	
WQP2 Contaminants	L	○	No activities identified for FY 2016.	
D6. Habitat Protection Action Plan				
HP1 Threat Assessment and Mitigation	M	◉	Collaborated with NCCOS and initiated analysis and reporting for Pacific Crossing habitat recovery surveys. Reporting was not completed in FY16, nor was 2008 video analysis and reporting. See ECO4	
HP2 Habitats of Special Importance	H	●	Completed an IPC/NOAA Habitat Framework Ecological Marine Units Report and Maps, which identify unique areas and characteristics of the seafloor that are considered Habitats of Special Importance for certain marine species.	
HP3 Invasive Species	M	◉	Reviewed report from December assessment of Misawa dock site by WDFW team and communicated with Quileute Tribe about the assessment.	
D7. Regional Ocean Planning Action Plan				
MSP1 Marine Spatial Planning	L	●	OCNMS in coordination with Washington State and Oregon State University completed an Olympic Coast seafloor atlas.	
E1. Maritime Heritage Action Plan				
MH1 Cultural Resource Conservation	L	●	OCNMS consulted with Washington Department of Archaeology and Historic Preservation (DAHP), Tribal Historic Preservation Officers, Tribal Cultural Resource staff and the National Park Service on the development of an OCNMS Maritime Heritage Resource Management Plan. A draft outline was shared and based on feedback a draft plan was completed and submitted for internal ONMS review.	
MH2 Local and Customary Knowledge	L	○	No activities planned for FY 2016.	
MH3 Public Understanding of Treaty Rights	L	○	While no activities were planned for FY 2016 the importance of treaty rights was integrated into several public presentations and integrated into volunteer training materials.	
E2. Socioeconomic Values of Sanctuary Resources Action Plan				
SV1 Existing Socioeconomic Information	L	○	No activities planned for FY 2016.	
SV2 New Socioeconomic Information	L	●	Findings from the 2015 NOAA/ONMS/NCCOS research on Socioeconomic Profiles of Users and Economic value of Coastal Recreation Uses have completed review and are ready to be published for use by OCNMS and other interested resource management agencies. Once the review of a related webpage and summary material is completed it will be made available to the public.	

NATIONAL MARINE SANCTUARY SYSTEM



National marine sanctuaries are America's underwater treasures. Within these waters, whales breed and bear young, corals flourish, and shipwrecks tell stories of our marine history. Sanctuary habitats include beautiful coral reefs, lush kelp forests, whale migrations corridors, spectacular deep-sea canyons, and underwater archaeological sites. These special places also provide homes to thousands of unique or endangered species and are important to America's cultural heritage. Encompassing more than 600,000 square miles, the National Marine Sanctuary System includes 13 national marine sanctuaries and Papahānaumokuākea and Rose Atoll marine national monuments.