

OLYMPIC COAST NATIONAL MARINE SANCTUARY

A REPORT FOR SANCTUARY ADVISORY COUNCIL MEMBERS

REPORTING PERIOD: NOV 15, 2013 – JAN 23, 2014

ABOUT THE SANCTUARY

Olympic Coast National Marine Sanctuary spans 3,189 square miles of marine waters off the rugged Olympic Peninsula coastline. The sanctuary extends 25 to 50 miles seaward, covering much of the continental shelf and several major submarine canyons.

The sanctuary protects a productive upwelling zone - home to rich marine mammal and seabird faunas, diverse populations of kelp and intertidal algae, and thriving invertebrate communities. The sanctuary is also rich in cultural resources, with over 150 documented historical shipwrecks and the vibrant contemporary cultures of Makah, Quileute, and Hoh Indian Tribes, and Quinault Nation.

OFFICE REPORT

OLYMPIC COAST NATIONAL MARINE SANCTUARY NEWS AND PROGRAM UPDATES

Organized by Olympic Coast National Marine Sanctuary (OCNMS or sanctuary) management plan priority areas

TREATY TRUST RESPONSIBILITIES

Final NOAA Procedures for Government-to-Government Consultation with Federally Recognized Indian Tribes and Alaska Native Corporations Released

The MPA Center represented the National Ocean Service on a NOAA-wide workgroup to develop procedures for government-to-government consultation with tribes which was released on November 12, 2013. In compliance with Executive Order (E.O.) 13175, "Consultation and Coordination with Indian Tribal Governments" (November 6, 2000), the Department of Commerce (Department) adopted a Tribal Consultation and Coordination policy statement. This policy establishes the manner in which NOAA works with Federally recognized Indian Tribes when developing NOAA policies that have Tribal implications.

The NOAA workgroup developed procedures (also referred to as the Tribal Consultation Handbook) to assist NOAA staff in conducting effective government-to-government consultations and fulfill NOAA's obligations under E.O. 13175 and Department Administrative Order 218-8 on Consultation and Coordination with Indian Tribal Governments, and the Department of Commerce Tribal Consultation and Coordination Policy. The handbook can be accessed at <https://docs.google.com/a/noaa.gov/viewer?a=v&pid=sites&srcid=bm9hYS5nb3Z8bm9hYS10cmliYWwtY29uc3VsdGF0aW9ufGd4OjQ2YmU4MGQyMTg2MTY0NjA>

ACHIEVE EFFECTIVE AND COORDINATED MANAGEMENT

Olympic Coast National Marine Sanctuary and US Navy Discuss Operations

Staff from U.S. Navy Northwest Region and Olympic Coast National Marine Sanctuary met to discuss issues of mutual concern, including sanctuary projected operations for 2014 as well as an ongoing Environmental Impact Statement for the Northwest Training Range Complex and Northwest Training and Testing Range, scheduled to be released in February 2014. Sanctuary staff recently provided comments to the Navy on the EIS, which they will be reviewing and responding to within the next month.

Olympic Coast National Marine Sanctuary Enforcement Discussed

NOAA Office of Law Enforcement and Olympic Coast National Marine Sanctuary (OCNMS) staff sponsored a bi-annual meeting of the OCNMS Enforcement Technical Advisory Committee (TAC). NOAA meets twice a year with the Washington Department of Fish and Wildlife and the U.S. Coast Guard to discuss enforcement issues in the sanctuary.

OCNMS Cooperating Agency on Wilderness Stewardship Plan

Olympic National Park (ONP) is in the process of developing a Wilderness Stewardship Plan/ Environmental Impact Statement (WSP/EIS) to fulfil their obligations under the Wilderness Act and the National Environmental Policy Act. ONP has invited Olympic Coast National Marine Sanctuary to participate as a cooperating agency. The park and the sanctuary have overlapping jurisdiction in the intertidal zone adjacent to ONP and collaborate in a number of different program areas. The sanctuary's role as a cooperating agency is to provide input to alternatives and to review pre-draft documents.

OCNMS Participation in COASST Advisory Board Meeting

Heidi Pedersen of OCNMS attended a two day Coastal Observation And Seabird Survey Team (COASST) Advisory Board meeting in Seattle from January 17-19 to discuss strategic planning for the program and marine debris module guidance. COASST is a citizen science project of the University of Washington in partnership with OCNMS as well as state, tribal and other federal agencies, environmental organizations and community groups. COASST received the largest National Science Foundation grant given of \$2.7 million USD in 2013 to be implemented over the next three years to design and incorporate marine debris monitoring into the citizen science program and update the COASST website and data management capabilities. West Coast Coordinator for NOAA's Marine Debris Monitoring Program, Sherry Lippiatt, also attended.

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

OCNMS Research Team Completes FY13 Field Season Summaries

Olympic Coast National Marine Sanctuary (OCNMS) Research team members finished writing and editing summaries of their FY13 field season activities for the OCNMS web page. Research Coordinator Ed Bowlby described the test of the PUMA unmanned aircraft system for seabird identification. Resource Protection Specialist Liam Antrim described intertidal monitoring, new information on sea star wasting disease, and the unmanned aircraft system test for coastal marine debris. Citizen Science Coordinator Heidi Petersen and Liam Antrim described the new NOAA standard for monitoring marine debris on the outer coast. Vessel Operator/Oceanographer Rick Fletcher described the annual moorings program. Geographer Nancy Wright described habitat mapping at the entrance to Mosquito Creek and ground-truthing at Quillayute Needles. Research summaries are available at <http://olympiccoast.noaa.gov/science/surveycruises/surveycruises.html#2013>.

OCNMS Works with Makah Fisheries Marine Mammal Program

Olympic Coast National Marine Sanctuary (OCNMS) Nancy Wright worked with the Makah Fisheries Marine Mammal Program to develop a method for interpreting the presence, absence, and movements of cetaceans along the north coast of Washington. Using marine mammal observation data from more than 20 years and GIS, Nancy joined Makah's other partners from NOAA's National Marine Mammal Laboratory and Cascadia Research Collective to research and document the health and viability of the local environment for sustained cetacean populations. From this work the Makah marine mammal biologists are preparing manuscripts for peer reviewed journals and the International Whaling Commission sub-committees.

IMPROVE OCEAN LITERACY

OCNMS Hosts Movie Night for Olympic Coast Discovery Center Volunteers

Olympic Coast Discovery Center (OCDC) volunteers celebrated the 2013 season with a movie night at their holiday party, which included viewing the educational documentary, *Beneath the Salish Sea*, by Florian Graner. Volunteers are an integral part of OCNMS efforts, contributing thousands of hours each year to education, stewardship and research/monitoring projects. OCDC volunteers are the public face to the sanctuary and help to inform visitors about sanctuary resources. Enrichment activities for OCNMS volunteers promote continuous education and development of volunteers to help them be more effective in their role and to stay engaged.

CONSERVE NATURAL RESOURCES IN THE SANCTUARY

Sanctuary Assists with Coordination of Remote Shoreline Cleanup Efforts

Olympic Coast National Marine Sanctuary (OCNMS) hosted a meeting with the Washington Conservation Corps Veterans Crew Coordinator, Olympic National Park and Makah Tribe to discuss logistics and scheduling of the crews for remote shoreline debris cleanup work in 2014. Two crews comprised of young veterans were formed with funding from Washington State and tasked with petroleum and plastic pollution mitigation, primarily through marine debris and creosoted wood removal from shoreline areas. Five remote shoreline segments were identified, and logistics of addressing debris removal at each segment were discussed. Crew coordination for 2014 will include regular cleanup efforts at each of the remote sites, as well as integration of the crews into regularly scheduled volunteer cleanup events at more accessible areas. Sanctuary staff is assisting the crew in planning for documentation of their efforts including weight of debris removed, level of effort, identification of high-load areas of debris accumulation, and characterization of the debris using NOAA-standardized data categories.

OCNMS Completes Benthic Habitat Classification for Potential EFH Expansion Areas

In 2011 the Coral Reef Conservation Program (CRCP) funded a seafloor mapping survey to characterize key features of substrates near the existing Olympic 2 Essential Fish Habitat and identify high-confidence targets for future visual surveys of deep-sea corals and sponges. A preliminary report of the findings from that survey was delivered to CRCP in December 2011. In 2012 Olympic Coast National Marine Sanctuary (OCNMS) staff conducted comprehensive ground-truthing using a sediment grab and underwater classification following established protocols, and data that may be useful in future consideration for expanding EFH areas. The report will undergo further edits before becoming available at OCNMS and PaCOOS websites.

UNDERSTANDING THE SANCTUARY’S CULTURAL, HISTORICAL AND SOCIOECONOMIC SIGNIFICANCE

Olympic Coast National Marine Sanctuary Discusses Maritime Heritage

OCNMS staff met with the Washington State Historic Preservation Officer to discuss sanctuary maritime heritage resources, programs and related responsibilities. Under the National Historic Preservation Act and the National Marine Sanctuaries Act, NOAA has stewardship responsibilities to historic properties within sanctuary boundaries. When evaluating sanctuary activities and permits OCNMS must consider potential effects on historic properties. OCNMS has agreed to continue discussions with the Washington Department of Historic Preservation on how to meet this responsibility. The sharing of information on historic properties and the drafting of a cultural resource management plan were discussed.

Understanding the Yurok Tribal Cultural Landscape

Staff representing the Marine Protected Areas Center, Office of National Marine Sanctuaries Maritime Heritage Program and Olympic Coast National Marine Sanctuary participated in a workshop in Klamath CA, sponsored by the Yurok Tribe. The workshop was the third in a series of West Coast workshops as part of a NOAA partnership with the Bureau of Ocean Energy Management. The workshop was attended by neighboring California tribal communities, state and federal agencies. Its goal was to establish working definitions, protocols and processes for tribes to represent their cultural resources interests in the marine environment as ocean energy developments are proposed and their impacts on natural and cultural resources are considered.

OCNMS Supports Makah’s GIS Work

Olympic Coast National Marine Sanctuary (OCNMS) Marine Geographer Nancy Wright is working with the Makah to support GIS work on their Tribal Cultural Landscapes (TCL) Project, a collaborative effort among the Bureau of Ocean Energy Management, ONMS, the National Marine Protected Areas Center, and Tribal Historic Preservation Offices. A goal of the TLC Project is to identify areas of tribal significance and characterize their spatial and temporal extents in GIS for the tribe’s historic library. At the invitation of the Makah, Nancy will teach GIS or develop the GIS library for the Project.

SANCTUARY PERMITTING

Issued Permits and Approvals

OCNMS-2013-008 – Dr. Shawn Larson, Seattle Aquarium

Project Title: Fall-Winter 2013-2014 Aerial Survey of Washington Sea Otters, *Enhydra lutris*

Permitted Activity: one day of low altitude overflight within the overflight restriction zone of Olympic Coast National Marine Sanctuary

Project Location: over entire nearshore area of the sanctuary

Permit Duration: through March 1, 2014

OCNMS-2014-001 – Carol Bernthal, OCNMS Superintendent

Project Title: Superintendent’s Permit

Permitted Activity: various activities “reasonable and necessary to fulfill management responsibilities consistent with the purposes of the sanctuary management plan, the NMSA, and sanctuary regulations.

Project Location: throughout Olympic Coast National Marine Sanctuary

Permit Duration: through December 2018

Pending Permit Requests

OCNMS-2014-002 - Dr. Florian Graner, Sealife Productions

(note: formerly identified as 2013 pending permit; issuance delayed by interagency consultation for ESA species)

Project Title: Cineflex Aerial Filming of Olympic Coast

Permitted Activity: low altitude overflight within the overflight restriction zone of Olympic Coast National Marine Sanctuary

Project Location: over waters of the Olympic Coast National Marine Sanctuary with approach to shore near Cape Flattery, Point of the Arches, Hoh River

Permit Duration: from issuance date through March 28, 2014

OCNMS-2014-003 – Joe Evenson, Washington Department of Fish and Wildlife

Project Title: WDFW/PSEMP Annual Winter Aerial Winter Survey of Marine Birds and Mammals

Permitted Activity: low altitude overflight within the overflight restriction zone of Olympic Coast National Marine Sanctuary

Project Location: over waters of the Olympic Coast National Marine Sanctuary between Koitlah Point and Cape Flattery

Permit Duration: to be determined; probably a 5-year permit

OCNMS-2014-001 – Carol Bernthal, OCNMS Superintendent

Project Title: Superintendent's Permit

Permitted Activity: proposed installation of low-frequency acoustic receiver mooring to characterize ambient sound environment. Project leads: NOAA Fisheries and NOAA Office of Oceanic and Atmospheric Research

Project Location: to be determined; >600 meters depth; area with low/no bottom trawling activity in the northern sanctuary area

Permit Duration: currently funded for 2-year deployment

LEARN ABOUT YOUR SANCTUARY / NATURAL HISTORY

New information about resources in the sanctuary is always emerging. This section of the office report is reserved for sharing brief descriptions of recent studies, observations, findings, reports, and forecasts related to the sanctuary.

Sea Star Wasting Disease Outbreak Along West Coast

Efforts continue through the Multi-agency Rocky Intertidal Network (MARINE) and other organizations to investigate and track occurrence of the sea star wasting disease that has been documented this summer at sites along the eastern Pacific coastline between California and Alaska. Mortality has been found in multiple species of sea stars from intertidal and subtidal areas. Pathologists have been analyzing tissue samples to identify the causal agent, suspected to be a virus. Although mortality is typically rapid, within a few days of the first overt signs, some sea stars appear to have survived as evidence of ray (limb) regeneration has been found at some locations. On the outer coast of Washington, recent surveys by Olympic National Park scientists found signs of the disease continuing into colder months, with lesions visible in a low percentage of the *Pisaster ochraceus* population. A summary of the outbreak is available at the following link: <http://www.eeb.ucsc.edu/pacificrockyintertidal/data-products/sea-star-wasting/>

Mercury Trends in Freshwater Fish - 2012 Sampling Results

The Washington Department of Ecology analyzed fish for total mercury in 2012 as part of the eighth year of a long-term monitoring program to assess mercury levels in freshwater fish throughout the state that includes Lake Ozette. Ecology previously sampled lakes in 2007, and this report summarizes changes in mercury levels over these time periods. Statistical tests showed significant increases in log₁₀ mercury levels between 2007 and 2012 at three of the six lakes (Deer, Fazon, and St. Clair). Standard-size bass mercury levels in 2012 were 18%, 13%, and 28% higher than levels measured in 2007, respectively. A significant increase in log₁₀ mercury levels was also found between 2001 and 2012 at Lake Samish. Lake Samish standard-size bass mercury levels increased 78% over that time period. Log₁₀ mercury concentrations were significantly lower in 2012 Lower Goose Lake bass compared to 2007 levels. Standard-size bass mercury levels decreased 24%. No significant change was found in Lake Ozette bass mercury levels between 2007 and 2012. Five fish samples collected in 2012 exceeded (did not meet) the National Toxics Rule regulatory criterion of 770 ppb: largemouth bass, northern pikeminnow, and yellow perch from Lake Ozette and a largemouth bass sample from Lake St. Clair. Over half of individual bass and 36% of composite samples contained mercury levels exceeding the EPA Recommended Criterion of 300 ppb. The report is available at <https://fortress.wa.gov/ecy/publications/SummaryPages/1303044.html>

REGIONAL / NATIONAL ONMS NEWS

National Marine Protected Areas Center Releases Comprehensive Report on U.S. MPAs

On Nov. 15, NOAA's National Marine Protected Areas Center issued a new report on the state of marine protected areas in the United States. Titled "Marine Protected Areas of the United States: Conserving Our Oceans, One Place at a Time", the report provides a detailed snapshot of the coverage, level of protection, resources protected and ecological representativeness

of MPAs in U.S. waters. It also features brief case studies in MPA management from around the country, including NOAA's Thunder Bay National Marine Sanctuary. For the first time, the report summarizes data on U.S. MPAs specifically protected for their natural heritage — ecosystems, ecosystems, biodiversity, habitats and species — as well as for their cultural resources and values. This focus on natural and cultural heritage MPAs provides greater comparability with the accepted international definition of MPAs established by the International Union for the Conservation of Nature (IUCN). The report can be downloaded at http://marineprotectedareas.noaa.gov/pdf/fac/mpas_of_united_states_conserving_oceans_1113.pdf

MPA Center Work on Ocean Uses Featured in U.S. Coast Guard Magazine

This week, the U.S. Coast Guard published their annual *Proceedings* magazine, focused entirely on marine planning and the National Ocean Policy. The MPA Center was invited to contribute an article on the patterns and management implications of human uses of the ocean: the fundamental currency of marine planning. Authored by Dr. Charlie Wahle, Dr. Mimi D'Iorio and Julia Townsend, the article highlights the Ocean Uses Atlas project, the Common Language of Ocean Uses, and other ongoing work on conflicts and compatibilities among multiple uses. <http://uscgproceedings.epubxp.com/title/11313/70>

Coastal Biogeographical Database to Explore

A joint effort between USGS and EPA, Coastal Biogeographical Risk Analysis Tools (CBRAT) is a web accessible database that organizes biological and geographical information for thousands of marine species. The database includes taxonomy, biogeography, environment, life history, morphology and physiology, and invasion (potential vectors) of marine coastal species (native and marine). By creating a hierarchical system of multiple categories for natural history information at varying scales, CBRAT compiles standardized information from disparate sources including manuscripts, reports and old reference books. This database allows for analysis and vulnerability assessments to help identify the species and ecosystems most vulnerable to changes such as those related to climate and invasive species. More information is available at <http://cbrat.nationalatlas.gov> and an article at <http://wfr.usgs.gov/newsletter>.

ONMS National Business Advisory Council to Hold Inaugural Meeting

NOAA's Office of National Marine Sanctuaries (ONMS) created the first ever sanctuary system-wide advisory council in 2013, the Business Advisory Council (BAC). The BAC was created to provide advice and recommendations to ONMS Director regarding the relationship of ONMS with the ocean business community and includes representatives from travel and tourism, recreation, fishing, transportation, energy, and technology sectors, corporate foundations, and other businesses that derive profit from marine resources or have interest in marine natural and cultural resources. Presently nine inaugural members have been appointed, including representatives of the following businesses: TripAdvisor, Royal Caribbean International, Johnson Outdoors Inc., Maersk Line, LLC, Hess Corporation, National Geographic Society, The Rockefeller Foundation, The Coca-Cola Company and Walt Disney Parks and Resorts U.S. The inaugural meeting is scheduled for January 29, 2014 in Washington, D.C. By engaging with and empowering the business community in the protection and management of special ocean places, ONMS aims to show that sanctuaries are an important component of the solution to our economic and environmental challenges. The draft agenda can be found at http://sanctuaries.noaa.gov/management/bac/bac_agenda.pdf. For more information about the BAC, visit <http://sanctuaries.noaa.gov/management/bac/welcome.html>

NEWS COVERAGE

Peninsula College Class Trip Studies Waters Off Port Angeles

Eighteen students from Ian Miller's Introduction to Oceanography class at Peninsula College performed hands-on field research on Olympic Coast National Marine Sanctuary vessel, *RV Tatoosh*, in the Port Angeles Harbor. <http://www.peninsuladailynews.com/article/20131208/NEWS/312089991/peninsula-college-class-trip-studies-waters-off-port-angeles>

Proposed Marine Science/ Conference Center Complex Seen as Enlivening Downtown Port Angeles

An Alaska-based company, Neeser Construction Inc., confirmed that they reached an agreement to purchase the 1.96-acre shoreline lot at the corner of Front and Oak streets in Port Angeles, contingent on satisfaction of final details. Neeser plans to construct a two-building marine science and conference center with retail space. <http://www.peninsuladailynews.com/article/20140112/NEWS/301129994/proposed-marine-science-conference-center-complex-seen-as-enlivening>

Oak Street Property Eyed for Marine Science, Conference Center in Port Angeles

The long-dormant downtown Front and Oak streets waterfront property is being eyed as the site of a new, 63,000-67,000-square-foot, two-building marine science and conference center with additional space for retail activity.

<http://www.peninsuladailynews.com/article/20140110/NEWS/301109982/oak-street-property-eyed-for-marine-science-conference-center-in>

Two Join Advisory Council for Olympic Marine Sanctuary

Two new members have joined the Olympic Coast National Marine Sanctuary Advisory Council. Linda Rotmark, formerly of Clallam Co Economic Development Council, is the Tourism-Economic Development representative and Eric Delvin of The Nature Conservancy will hold the Conservation seat.

<http://www.peninsuladailynews.com/article/20131121/NEWS/311209969/2-join-advisory-council-for-olympic-marine-sanctuary>

Elwha River Sees Largest Run of Chinook in Decades

Olympic National Park officials reported the largest run in decades of Chinook salmon returning to the Elwha River this fall. Fish streamed into areas of the Elwha River and its tributaries that were formerly blocked by the Elwha Dam.

http://seattletimes.com/html/localnews/2022276484_apxelwhariversalmon.html

Elwha Dam Removal Focus of New Burke Exhibit

An exhibit titled “*Elwha: A River Reborn*” opened at the Burke Museum of Natural History and Culture in Seattle on the University of Washington campus.

<http://www.bellinghamherald.com/2013/11/17/3321205/elwha-dam-removal-focus-of-new.html>

State Reviews Methods to Aid Rockfish Release Survivability

Heather Reed, state coastal marine resources policy coordinator, led a briefing of the state Fish and Wildlife Commission on the use of descending devices to improve the survivability of released rockfish.

<http://www.thenewstribune.com/2013/12/01/2923759/state-reviews-methods-to-aid-rockfish.html>

Mysterious Affliction Causing “Horror Show” Among Sea Stars on Olympic Peninsula Coast

Scientists and researchers are studying sea stars afflicted with sea star wasting syndrome along the coast of Olympic National Park. The disease has affected sea stars along the entire West Coast from southern California to Alaska, and has so far proved invisible.

<http://www.peninsuladailynews.com/article/20131222/NEWS/312229987/0/SEARCH>

Clues Sought for Sea Star Die Off

Biologists search for the cause of a mysterious and unprecedented die-off of sea stars in tidepools along North America’s Pacific shores. Scientists worry about the long-term ecological consequences of the sea star wasting disease outbreak, which has affected multiple species in a very large area.

<http://www.scientificamerican.com/article.cfm?id=clues-sought-for-sea-star-die-off>

Satellite Tagging Filling in Gaps on Winter Migration of Endangered Killer Whales

A satellite tag attached to one endangered Puget Sound killer whale is yielding some valuable information about the migration of orcas and winter movements.

<http://www.therepublic.com/view/story/6344ab7563be4c0e870ed0bd617c2a85/WA--Tagging-Orcas>

Five Distinct Humpback Whale Populations Identified in North Pacific

A new comprehensive genetic study of the humpback whale populations in North Pacific region suggests that there are five distinct populations. This finding comes as the Endangered Species Act proposal is considering listing the North Pacific humpback whales as a “distinct population segment.”

<http://www.scienceworldreport.com/articles/11388/20131205/five-distinct-humpback-whale-populations-identified-in-north-pacific.htm>

B.C. Humpback Whales use Seabirds to Find Herring, New Research Reveals

A population of humpback whales off northern Vancouver Island takes advantage of diving seabirds to exploit herring stocks. The seabirds dive and swim beneath the herring, which result in tight schools of “bait balls,” that humpbacks then lunge into for their own consumption.

<http://www.vancouver.sun.com/technology/humpback+whales+seabirds+find+herring+research+reveals/9207052/story.html>

An Ecosystem of Our Own Making Could Pose a Threat

The plastisphere, a marine ecosystem that starts with bacteria on particles of discarded plastic, is drawing increasing attention. Scientists fear it might host pathogens and leach dangerous chemicals.

<http://www.latimes.com/science/la-sci-plastisphere-20131228,0,811701.story#ixzz2pGOU1bkS>

Group Calls for Expanding Killer Whale Habitat Protection

The Center for Biological Diversity filed a petition with the National Marine Fisheries Service to expand protected habitat for endangered orcas that live in Puget Sound during the summer. The proposed coastal area along Washington to Northern California would help protect the critical habitat where orcas forage in the winter.

<http://earthfix.opb.org/flora-and-fauna/article/group-calls-for-expanding-killer-whale-habitat-pro>

ONP Ranger Named CoastSaver of the Year

Olympic National Park (ONP) Ranger Al Voner has been named the 2013 Washington CoastSaver of the Year. Based at the ranger station at Ozette, Voner is honored for regularly facilitating beach cleanups and for his stewardship of wilderness beaches.

<http://www.peninsuladailynews.com/article/20140120/NEWS/301219997/onp-ranger-named-coastsaver-of-the-year>

WEB SITE (<http://olympiccoast.noaa.gov/>)

Follow the OCNMS on Facebook!

<https://www.facebook.com/usolympiccoastgov>

Please take a few moments to peruse the site. Your feedback is greatly appreciated.

Comments and suggestions can be sent to Jacqueline.Laverdure@noaa.gov.

FUN, OCEAN-RELATED WEB SITES

National Oceanic & Atmospheric Administration

<http://www.noaa.gov/>

National Ocean Service

<http://www.nos.noaa.gov/>

Office of National Marine Sanctuaries

<http://www.sanctuaries.nos.noaa.gov/>

NOAA Marine Debris Program

<http://marinedebris.noaa.gov/>

NOAA Online Media Library

<http://sanctuaries.noaa.gov/photos>

Encyclopedia of National Marine Sanctuaries

<http://www8.nos.noaa.gov/onms/park/>

NOAA Ocean Explorer

<http://oceanexplorer.noaa.gov/>

National Data Buoy Center

<http://www.ndbc.noaa.gov/rmd.shtml>

Washington's Ocean Resources

<http://www.ecy.wa.gov/programs/sea/ocean/index.html>

CoastWatch – West Coast Regional Node

<http://coastwatch.pfel.noaa.gov/>

Northwest Association of Networked Ocean Observing Systems

<http://www.nanoos.org/>

NOAA's Pacific Marine Environmental Laboratory

<http://www.pmel.noaa.gov/>

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Learn More About Your Sanctuary

The Sanctuary Office Report is produced bi-monthly by the Olympic Coast National Marine Sanctuary in conjunction with Sanctuary Advisory Council meetings. To learn more about the Sanctuary please visit our web site at: <http://www.olympiccoast.noaa.gov>.

To learn more about the Sanctuary Advisory Council please visit:
http://olympiccoast.noaa.gov/involved/sac/sac_welcome.html

The Office of National Marine Sanctuaries

The Olympic Coast National Marine Sanctuary is one of 14 marine protected areas in the National Marine Sanctuary System encompassing more than 150,000 square miles of marine and Great Lakes waters from Washington State to the Florida Keys, and from Lake Huron to American Samoa. The system includes 13 national marine sanctuaries and the Papahānaumokuākea Marine National Monument. Visit the ONMS web site at: <http://www.sanctuaries.nos.noaa.gov/>

Get involved!

To learn how to get involved in the Sanctuary visit:
<http://olympiccoast.noaa.gov/involved/welcome.html>

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