



OLYMPIC COAST NATIONAL MARINE SANCTUARY

A Report for Sanctuary Advisory Council Members Reporting Period: MAR 6 – MAY 15, 2020

ABOUT THE SANCTUARY

Olympic Coast National Marine Sanctuary spans 3,188 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 numerous marine mammal and seabird species, diverse populations of kelp and intertidal algae, and thriving invertebrate communities.

The sanctuary is also rich in cultural resources, with over 200 documented historical shipwrecks and the vibrant contemporary cultures of the Makah, Quileute, and Hoh Indian Tribes and the Quinault Nation.

OLYMPIC COAST NATIONAL MARINE SANCTUARY NEWS AND PROGRAM UPDATES

Organized by Olympic Coast National Marine Sanctuary (OCNMS) management priorities

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TREATY TRUST RESPONSIBILITIES

Native, Indigenous, and Tribal collaboration survey for National Marine Sanctuary System

Collaboration with Tribal or Indigenous cultures is an integral part of the management of our sanctuaries and monuments. To accomplish this, the Office of National Marine Sanctuaries Maritime Heritage Program is seeking to comprehensively identify our level of engagement with Tribal and Indigenous partners where we share the responsibility for preserving cultural heritage in our sites. The goal of this internal ONMS survey is to expand and enhance our recognition of the full spectrum of tangible and intangible underwater cultural heritage within our stewardship responsibility and implement effective management strategies to preserve them. Olympic Coast National Marine Sanctuary’s experiences working with the Hoh, Makah, and Quileute Tribes, and the Quinault Nation will be an important contribution to this effort.

COLLABORATIVE AND COORDINATED MANAGEMENT

Law enforcement in Olympic Coast National Marine Sanctuary discussed

Staff from NOAA’s Office of National Marine Sanctuaries, Office of Law Enforcement, Office of General Council Enforcement Section, U.S. Coast Guard, Washington State Department of Fish and Wildlife, and Washington State Department of Ecology met to discuss enforcement of sanctuary regulations. The Law Enforcement Technical Advisory Committee meets twice a year to discuss enforcement efforts focused on protecting sanctuary resources. Priorities and status of ongoing cases were discussed.

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

NOAA staff share vessel monitoring experience with Washington State

Representatives from the National Marine Fisheries Service Office of Protected Resources (OPR) and Olympic Coast National Marine Sanctuary briefed Washington Department of Ecology (ECY) staff on their experience in using Automatic Identification System (AIS) technology for monitoring and management purposes. The sanctuary has been monitoring vessel traffic since 1998 and OPR uses AIS in support of several resource protection initiatives, including whale conservation. In 2019, the Washington state legislature directed Ecology’s Spills Prevention Program to produce a synopsis of current maritime vessel activity, navigation lanes, and anchorages. NOAA staff provided advice

to ECY staff technical advice related to using AIS data to support this type of analysis, such as considerations for data processing, identifying unique transits and adding third party data to AIS to provide more detailed information.

IMPROVE OCEAN LITERACY

Taholah students investigate microplastics in local waters and sand

Olympic Coast National Marine Sanctuary (OCNMS) staff, in partnership with Quinault Indian Nation Natural Resources, Department of Ecology, Twin Harbors Waterkeeper, and Taholah High School investigated microplastics in the classroom. Following a classroom discussion on marine debris and microplastics in our marine environment, students and guest instructors followed the protocol to set up, process, and view samples for microplastics and fibers. Students were able to view several processed water and sand samples - each one showing microfibers visible under the microscope. Students will be conducting regular sampling of local beaches on the Quinault Indian Reservation starting in spring 2020, as part of the Pacific Northwest B-WET funded program *Bonds Across the Water*.



Oceanography class “dives” into their local sanctuary

Olympic Coast National Marine Sanctuary (OCNMS) staff provided a presentation on national marine sanctuaries, OCNMS, and ocean conservation to 20 students enrolled in Peninsula College’s Oceanography class. Students had the opportunity to learn about marine protected areas federally managed under NOAA’s Office of National Marine Sanctuaries before diving into the sanctuary in their own backyard. Time was spent reviewing some of our more common intertidal organisms to prepare students for their evening tidepool exploration following the presentation.

Olympic Coast National Marine Sanctuary attends 33rd annual Beachcombers Fun Fair

Olympic Coast National Marine Sanctuary (OCNMS) education team’s AmeriCorps provided educational booth at the annual Beachcombers Fun Fair in Ocean Shores over March 7-8th. OCNMS’ booth featured the life size, inflatable humpback whale “Big Mama” as well as information about whales and humpbacks, the sanctuary system, and the role marine protected areas play in ocean conservation. This time people did not walk inside Big Mama due to COVID-19 health concerns. However, story time was offered on Sunday to the youth as another form of outreach. Multiple vendors and beach collectors from the local area as well as vendors from as far as Alaska brought in hundreds of visitors during the weekend.



Big Mama completes her 2019-2020 “splash” in Olympic Peninsula schools



During the 2019-2020 school year, Olympic Coast National Marine Sanctuary education team’s AmeriCorps members brought the Sanctuary Splash fifth grade curriculum to schools throughout Olympic Peninsula. Focusing on humpback whales, Sanctuary Splash includes lessons introducing cetaceans, whales’ vocalization, and the science of sound. This three-day program also allows students to explore the anatomy of an inflatable, life-sized, walk-inside replica of a local humpback whale named “Big Mama.” During this experience, students get the opportunity to become “Whale Scientists” testing their skills with activities such as fluke identification and anatomy worksheets. Every fifth grade class, roughly 383 fifth grade students in Sequim, Port Angeles, Cape Flattery, Quileute Valley, Quileute Tribal School, and Taholah school districts participated in the program. Some schools included multiple grades, allowing older and younger students an opportunity to see just how big a humpback whale really is.

Olympic Coast National Marine Sanctuary inspires young stewards at NatureBridge

NatureBridge Olympic hosted Olympic Coast National Marine Sanctuary education team who lead an evening program to visiting students. The students, from Bellevue Montessori, learned about marine debris and the impacts of debris on seabirds such as albatross through hands on activities allowing students to explore the contents of an albatross bolus. Students, teachers, NatureBridge educators, and parent chaperons participated in the program. Following the lesson, the group brainstormed potential ways that they could collectively and individually help improve and protect the ocean environment.

Students “Discovery the Olympic Coast” with food web activity



Before school closures in response to COVID-19, Olympic Coast National Marine Sanctuary AmeriCorps members taught third graders in Clallam County about the local marine ecosystems by watching Florian Graner’s film, “Discover the Olympic Coast.” The film introduced the students to the many habitats and organisms present on our coast to help them better understand their connection to the food web. After watching the video, students played the food web game,

connecting each organism to the food web and then learning about the difference between a food chain and a food web. Using the food web game, they learned about the importance of plankton and how it serves as an essential part of the food web.

Olympic Coast National Marine Sanctuary and Dungeness River Audubon Center bring watershed and OA education to fifth graders

Olympic Coast National Marine Sanctuary partnered with Dungeness River Audubon Center to add an ocean acidification component to the fifth grade’s North Olympic Watershed (NOW) Science lesson. AmeriCorps members with fifth-grade students to teach them about the impacts of ocean acidification as it relates to salmon. The newly created, fun, hands-on, ocean acidification lesson had students act as salmon and navigate a series of smelling-related challenges to mimic a salmon trying to find its natal stream. About 150 students were reached before the program was placed on hold due to COVID-19 school closures.

Olympic Coast staff participate in Rising Voices intercultural climate action event

Olympic Coast National Marine Sanctuary staff attended Virtual Rising Voices Kickoff event (<https://risingvoices.ucar.edu/>). “The Rising Voices program facilitates intercultural, relational-based approaches for understanding and adapting to extreme weather and climate events, climate variability, and climate change. The program brings Indigenous and other scientific professionals, tribal and community leaders, environmental and communication experts, students, educators, and artists from across the United States, including Alaska, Hawai’i, and the Pacific Islands, and around the world, to assess critical community needs and to pursue joint research aimed at developing optimal plans for community action towards sustainability. This was the first time Rising Voices community came together virtually to share recent positive activities, actions and celebrations around climate justice and Earth Day, and to share concerns, questions, and observations around COVID-19 and consider potential collaborations to address the emerging questions.”



Virtual presentation takes Olympia High School students to national marine sanctuaries

Olympic Coast National Marine Sanctuary education staff provided a virtual presentation to Environmental Science students at Olympia High School. Ten students attended the online ZOOM classroom, which was a follow up to researching commercial and recreational fishing on the west coast. This pilot “classroom” experience allowed students to learn more about their backyard sanctuary plus the dynamic and place-based efforts of ocean conservation through

the Office of National Marine Sanctuaries. The presentation and following question and answer conversation was recorded and will be made available to all 60 Environmental Science students at Olympic High School through their Google Classroom.

Celebrating the 50th Anniversary of Earth Day RETHINK Crafts for Students!

Olympic Coast National Marine Sanctuary (OCNMS) AmeriCorps celebrated the 50th Anniversary of Earth Day by bringing RETHINK crafts to the comfort and homes of the local and online community. Both live-streamed their 5-10 minute crafts that use upcycled/recycled materials in order to reduce waste and spread awareness about marine debris. Mel presented creating a do-it-yourself (DIY) bird journal and bird feeder while



Gabrielle presented how to create a DIY animal plant holder. These crafts were posted on the Washington CoastSavers page and featured as virtual Earth Day activities (<https://www.coastsavers.org/index.php/2020-virtual-earth-day-festivities/>).

LEARN ABOUT YOUR SANCTUARY/NATURAL HISTORY



National Marine Sanctuaries Webinar features Dr. Jan Newton on Marine Heatwaves

Dr. Jan Newton, Senior Principal Oceanographer at the University of Washington's Applied Physics Laboratory, presented “Understanding Marine Heatwaves in the Pacific Northwest” for a live audience of 445 people as part of the National Marine Sanctuaries Webinar Series. Dr. Newton explained how marine heatwaves are influencing life in the waters off Washington coast in the Pacific Northwest, including Olympic Coast National Marine Sanctuary. More than 700 people registered for the event and will have access to the recorded video. This webinar was co-hosted by Olympic Coast National Marine Sanctuary, Feiro Marine Life Center, and the Peninsula College STEM Club.

SANCTUARY PERMITTING

Issued Permits and Authorizations

OCNMS-2020-002 – Brad Hanson, Northwest Fisheries Science Center

Project Title: Surveys for cetaceans to collect breath samples with an unmanned aerial system (UAS)

Permitted Activity: Approaches to humpback, gray, or Southern Resident killer whales, by a NOAA operated unmanned aerial system (UAS), for the purposes of collecting breath samples.

Project Location: The proposal is to reoccupy the currently occupied locations.

Permit Duration: May 8, 2020 through December 13, 2022

Comment: Previous research has shown that southern resident killer whales, and other species of interest, occur more commonly in OCNMS than other parts of their range, during the spring. Limited information is available on their occurrence patterns and diet. More specifically, there are concerns about the health of the whales as they come out of the winter, a time of year when prey resources are thought to be particularly constrained. Due to COVID-19, operations will likely be delayed until 2021.

Pending Permits

OCNMS-2018-008-A2 – John Joseph, Naval Postgraduate School

Project Title: SURTASS Settlement: Sanctuary Soundscapes

Permitted Activity: Deployments of subsurface moorings (SoundTrap) at the identified locations, requesting an amendment to allow for some anchor abandonment due to issues in the original configuration to retrieve anchors at deeper sites inaccessible for scuba divers. Due to sensor battery capacity, they have also requested to change the servicing interval.

Project Location: The proposal requests to continue to use the identified locations (Kydakabbit, near shipping lanes, Point Grenville, and Cape Alava)

Permit Duration: August 1, 2020 through December 1, 2022

Comment: This project is part of a national network of passive acoustics in sanctuaries with the goal of characterizing the sanctuary soundscapes. As such, work must be conducted in the sanctuary to achieve the goal of characterizing sanctuary soundscapes. This project has the support of ONMS headquarters and the west coast region and results will be shared with sanctuary managers.

OCNMS-2020-001 Dr. Sean Higgins, Columbia University Lamont-Doherty Earth Observatory

Project Title: Illuminating the Cascadia plate boundary zone and accretionary wedge with a regional-scale ultra-long offset multi-channel seismic study

Permitted Activity: Deployment of six Ocean Bottom Seismometers (OBS) on the seafloor and the abandonment of 1m² iron grate anchors

Permit Duration: Requested from May 1, 2020 through August 31, 2020

Comment: This seismic survey will utilize an air gun array as a sound source, which is known to cause impacts to marine resources such as marine mammals. The National Science Foundation, as the federal funding source, is in consultation with NMFS Office of Protected Resources and seeking an Incidental Harassment Authorization (IHA) under the MMPA and a Biological Opinion (BO) under the ESA. In addition to the sanctuary permit, there will also be a consultation between OCNMS, NMFS, and NSF on the IHA and BO.

OCNMS-2020-003 Jesse Turner, SMRU Consulting

Project Title: Coastal Acoustic Buoys for Offshore Wind (CABOW) WA Testing

Permitted Activity: Requesting to deploy three acoustic monitoring buoys for two weeks to test this new monitoring equipment in real-world conditions for a project on the East Coast.

Project Location: The proposal requests to deploy off of Shi Shi/Cape Alava area.

Permit Duration: Requested start July 1, 2020 through September 30, 2020

Comment: Consulting firm is located on Friday Harbor and are requesting to deploy in OCNMS as it is the nearest location with oceanic conditions and water depths similar to what will be encountered on the East Coast.

OCNMS-2020-004 Dr. Carol Stepien, Pacific Marine Environmental Lab (PMEL)

Project Title: Invertebrate and Fish Community Species Composition and Diversity from Environmental DNA water samples in Olympic Coast National Marine Sanctuary

Permitted Activity: Requesting to deploy moorings to collect environmental DNA samples off of Tahola and La Push, near existing OCNMS moorings.

Project Location: Near OCNMS moorings at Cape Elizabeth and Teahwhit Head.

Permit Duration: Requested start date of June 1, 2020 through May 31, 2021

Comment: Environmental DNA has been shown to be a powerful tool for species detection, which is significantly increased by coupling this sampling to high-resolution metabarcode analyses. The ability to customize metabarcode markers to capture broad taxonomic community information as well as target taxa of particular interest makes this approach remarkably versatile and allows us to characterize biological communities in ways not possible until recently. Another advantage of eDNA sampling from filtered water is that there is no impact of sampling, making it an ideal choice for sensitive and protected areas. Finally, the ability to use automated samplers like the PPS allows for the collection of fine scale, time series datasets from difficult to access areas like OCNMS at a fraction of the cost in time and money that traditional surveys would require. The proposed statistical approach using species occupancy models

will enable us to distinguish the effects of hypoxia from imperfect eDNA detection. Hypoxia and acidification are predicted to increase in the future, particularly in areas with strong upwelling as in the southern OCNMS. Understanding how biological communities respond and recover from hypoxic events is critical to be able to predict impacts on fisheries and to the coastal communities that depend on them.

REGIONAL/NATIONAL MARINE SANCTUARY SYSTEM NEWS

MPA Center organized national NAMPAN Dialogue: Best Practices and Knowledge Sharing for Marine Protected Areas in the United States

NOAA's Marine Protected Area Center and the U.N. Environment Programme hosted a national, virtual discussion for 140 MPA managers and practitioners under the auspices of the North American Marine Protected Area Network (NAMPAN). Participants from across the National Marine Sanctuary System, National Estuarine Research Reserve System, National Parks, National Fish and Wildlife, state agencies, and indigenous communities convened at 13 locations across the U.S., Hawai'i, and Caribbean, or joined remotely to discuss challenges, opportunities, and how NAMPAN can increase collaboration at the regional and transnational level. Discussion themes included addressing climate change, connectivity, jurisdiction challenges, unified messaging, and monitoring visitor impacts. Breakout regional sessions encouraged participants to explore regional issues and solutions and to develop ideas on how to engage other MPA managers in their region. Outputs will be shared with Canadian and Mexican counterparts (who are also conducting national meetings) at a trilateral NAMPAN discussion in April.

National Marine Sanctuaries Webinar Series continues to spike in interest

As part of the [National Marine Sanctuaries Webinar Series](#), nearly 800 formal and informal educators, students, and even families registered for the *Understanding Marine Heatwaves in the Pacific Northwest* presentation by Jan Newton, Ph.D., senior principal oceanographer at the University of Washington's Applied Physics Lab, an extension of a speaker series in partnership with Olympic Coast National Marine Sanctuary, Feiro Marine Life Center, and the Peninsula College STEM Club. *Gardening Corals for Reef Restoration*, Dr. Katie Lohr's presentation on April 23, 2020 garnered 775 registrants. In total, 825 people attended these two live presentations and hundreds more will watch the webinar recordings in our [archives](#). This webinar series is a way to connect with educators, students, and other interested people to provide them with educational and scientific expertise, as well as resources and training to support ocean and climate literacy. The follow-up evaluation were completed by 387 people. Overall, 54% of attendees stated they plan to use this content within the next year. 84% of them agreed the content of the webinar made them understand that national marine sanctuaries and marine national monuments purposes. Future presentations in the National Marine Sanctuaries Webinar Series interest 95% of attendees with 94% likely to recommend this webinar series to others.

National marine sanctuaries represented at the NOAA Citizen Science Virtual Workshop

NOAA offered the first of its kind citizen science workshop with the goals of building stronger relationships among community members; exchanging best practices for use of citizen science and crowdsourcing; discussing and documenting needs of NOAA staff using citizen science; reviewing best practices regarding citizen science data quality; and informing plans to advance appropriate use of citizen science within the agency. Hosted by the newly-formed NOAA Citizen Science Executive Committee, and facilitated by the Office of Education, the three-day workshop featured keynote presentations exploring innovation in and the educational impact of citizen science by Rear Admiral Gallaudet, Assistant Secretary of Commerce for Oceans and Atmosphere and NOAA's Deputy Administrator and by Louisa Koch, NOAA's Director of Education. [Citizen science projects](#) managed by staff from field sites within the National Marine Sanctuary System were shared during lightning talk presentations which highlighted the system's diverse scientific research and successful endeavors to connect with the public. NOAA is an active member of the multi-agency [Federal Community of Practice for Crowdsourcing and Citizen Science](#) which works to engage the public directly and creatively. Active sanctuary system participation in this network reflects the growing importance of citizen science across the system. ONMS stands out as a good example.

Sanctuary attracts swarms of birders at Mass Audubon Birder Meeting

Stellwagen Bank National Marine Sanctuary (SBNMS) volunteers ran our annual outreach booth at the 28th Mass Audubon Birders Meeting at the College of the Holy Cross in Worcester, Massachusetts enticing the estimated 200 birders with stories of the Stellwagen Sanctuary Seabird Stewards citizen science program and the research team's shearwater tagging project. Participants signed up to receive the e-newsletter and for volunteer opportunities, plus learned about SBNMS' Management Plan Review and how to comment.

NOAA holds first advisory council meeting for proposed Lake Ontario National Marine Sanctuary

Last September, NOAA announced the establishment of a sanctuary advisory council for the proposed [Lake Ontario National Marine Sanctuary](#) in eastern Lake Ontario. NOAA established a [sanctuary advisory council](#) (SAC) for the proposed sanctuary to bring members of the local community together to provide advice to NOAA, to serve as a liaison with the nominating community, and to assist in guiding NOAA through the designation process. On April 23, the newly appointed members of the SAC gathered (virtually) for their first meeting allowing an opportunity for each member to introduce themselves plus share their enthusiasm for and interest in the proposed sanctuary. Staff presented on the important role and responsibilities of advisory councils and the status of the designation. The next steps for the SAC involve providing input on NOAA's sanctuary proposal, including the draft management plan.

Flower Garden Banks National Marine Sanctuary expansion proposal moves forward

NOAA has published a [proposed rulemaking to expand Flower Garden Banks National Marine Sanctuary](#). Building on more than 30 years of scientific studies and extensive coordination with the sanctuary advisory council, NOAA is proposing to expand the sanctuary from 56 square miles to 160 square miles, protecting additional critical habitat in the Gulf of Mexico. The proposed rule for expansion would add 14 additional reefs and banks to the sanctuary, which provide important habitat for recreationally and commercially important fish, as well as threatened or endangered species of manta rays, sea turtles, and corals. The proposal would extend existing sanctuary protections to these new areas to limit the destructive impact of activities related to fishing with bottom-tending gear, ship anchoring, oil and gas exploration and production, and salvage activities on sensitive biological resources. The public will have until July 3 to review the proposal and [provide comments](#).

West Coast voluntary vessel speed reduction requests sent to shipping industry to protect endangered whales

California's coastal waters draw several species of large, endangered whales. To reduce the threat of fatal ship strikes on whales, NOAA implements a seasonal Voluntary Vessel Speed Reduction (VSR) program that requests ships transit at 10 knots or less near and through the four California national marine sanctuaries (Channel Islands, Cordell Bank, Greater Farallones, and Monterey Bay). NOAA recently sent letters, signed by the Office of National Marine Sanctuaries, National Marine Fisheries Service, and U.S. Coast Guard, to more than 125 shipping companies outlining their cooperation level with 2019 NOAA VSR requests and announcing the 2020 NOAA VSR season. While industry cooperation levels with voluntary requests have historically been low, the data show a significant rise in cooperation from 2018 to 2019. Cooperation levels increased from 23% to 50% in southern California and from 45% to 58% in the San Francisco Bay region.

Office of National Marine Sanctuaries collaboration with Exploring By The Seat Of Your Pants

NOAA's Office of National Marine Sanctuaries hosted a live, virtual program with [Exploring By The Seat Of Your Pants](#) (EBSYP). EBSYP is a free platform that inspires the next generation of scientists, explorers, and conservationists through virtual field trips and live connections with experts across the globe. The event, titled [Exploring the Blue with National Marine Sanctuaries](#), offered an overview of the sanctuary system as well as an introduction to the [Sanctuaries 360°](#) collection with the launch of the first virtual reality video in [Channel Islands National Marine Sanctuary](#). More than 200 participants tuned in live, with more than 600 additional views of the recordings. EBSYP has grown exponentially with viewers during the COVID-19 pandemic, as students, teachers, and parents are looking for content to continue learning while at home. EBSYP is seeking opportunities to continue to partner with and host live programs with NOAA and ONMS.

Ocean exploration in national marine sanctuaries highlighted in *Oceanography*

A 2019 research cruise in Cordell Bank and Greater Farallones national marine sanctuaries was featured in the [Oceanography](#) supplement ["New Frontiers in Ocean Exploration,"](#) which highlights the field season aboard Ocean

Exploration Trust’s E/V *Nautilus*, NOAA Ship *Okeanos Explorer*, and Schmidt Ocean Institute’s R/V *Falkor*. The article shares the findings and accomplishments of the cruise, including public engagement around the globe through telepresence. In Cordell Bank National Marine Sanctuary, the mission included two remotely operated vehicle dives: one in Box Canyon and one in Bodega Canyon, which was the deepest ever dive in the sanctuary at 3,300 meters. Twenty-two biological samples were collected, along with seven water samples for ocean acidification and eDNA analysis, and three sediment samples to look at past ocean conditions. The data collected will improve understanding of the taxonomy and distribution of species living in the sanctuary and the physical conditions they experience.

REGIONAL / NATIONAL MARINE SANCTUARY FOUNDATION NEWS

Capitol Hill Ocean Week is Going Virtual for 2020

The National Marine Sanctuary Foundation announced that Capitol Hill Ocean Week (CHOW), the nation’s premier ocean and Great Lakes policy conference, will be virtual in 2020. The conference will take place on Tuesday, June 9, 2020. CHOW is a free event and open to the public. Registration is now open for Capitol Hill Ocean Week 2020 here: <https://www.eventbrite.com/e/capitol-hill-ocean-week-tickets-96996610473>. CapitolHillOceanWeek.org will be the online portal into insightful discussions on how to conserve biodiversity and build a sustainable global economy that protects nature, which is critical to people’s health and well-being. The ocean contains a multitude of wonders yet to be discovered, including potentially life-saving cures. The possibilities of new vaccines and medical therapies underscores the importance of conserving and protecting biodiversity in these largely unexplored ecosystems.

OCNMS Online

Visit our website at: <http://olympiccoast.noaa.gov/>.

Follow us on Facebook and Twitter!

<https://www.facebook.com/usolympiccoastgov> | <https://twitter.com/olympiccoast>

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.*

Ocean-Related Websites

National Oceanic and Atmospheric Administration http://www.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
National Ocean Service http://oceanservice.noaa.gov/	NOAA Pacific Marine Environmental Laboratory http://www.pmel.noaa.gov/	Northwest Association of Networked Ocean Observing Systems http://www.nanoos.org/
Office of National Marine Sanctuaries http://sanctuaries.noaa.gov/	CoastWatch – West Coast Regional Node http://coastwatch.pfel.noaa.gov/	NOAA Online Media Library http://sanctuaries.noaa.gov/photos
NOAA Ocean Explorer http://oceanexplorer.noaa.gov/	NOAA Marine Debris Program http://marinedebris.noaa.gov/	Encyclopedia of National Marine Sanctuaries http://www8.nos.noaa.gov/onms/park/

OLYMPIC COAST NATIONAL MARINE SANCTUARY

LEARN MORE ABOUT YOUR SANCTUARY

The Sanctuary Office Report is produced bi-monthly by Olympic Coast National Marine Sanctuary in conjunction with sanctuary advisory council meetings. To learn more about the sanctuary, please visit our website at: <http://olympiccoast.noaa.gov/>.

To learn more about the sanctuary advisory council, please visit:
http://olympiccoast.noaa.gov/involved/sac/sac_welcome.html.

OFFICE OF NATIONAL MARINE SANCTUARIES (ONMS)

Olympic Coast National Marine Sanctuary is one of the marine protected areas in the National Marine Sanctuary System encompassing more than 600,000 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 14 national marine sanctuaries along with Papahānaumokuākea and Rose Atoll marine national monuments. Visit the ONMS website at: <http://sanctuaries.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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