Office of National Marine Sanctuaries
National Oceanic and Atmospheric Administration

OLYMPIC COAST NATIONAL MARINE SANCTUARY

A Report for Sanctuary Advisory Council Members **Reporting Period: March 11 - May 12, 2017**

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 150 documented historical shipwrecks and the vibrant contemporary cultures of the Makah, Quileute, and Hoh Indian Tribes and the Quinault Nation.

OFFICE REPORT

OLYMPIC COAST NATIONAL MARINE SANCTUARY NEWS AND PROGRAM UPDATES

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

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The Passing of an Olympic Coast Champion

Former Washington Governor Mike Lowry, a key figure in the designation of Olympic Coast National Marine Sanctuary, passed away on May 8. While serving as Congressman for Washington's 7th District, Lowry introduced language in the 1988 reauthorization of the National Marine Sanctuary Act, directing the Secretary of Congress to designate the Western Washington Outer Coast National Marine Sanctuary, which would become OCNMS. Mike was Governor when the designation process was completed and along with Secretary of Commerce Ron Brown and Coastal Treaty Tribe leaders dedicated the new sanctuary in a ceremony in Olympic National Park in July of 1994. Mike was also on hand for the sanctuary's 10th anniversary where his efforts in protecting the Olympic Coast were recognized (see photo of Secretary of Commerce Ron Brown and Governor Mike Lowry at the dedication of the Olympic Coast National Marine Sanctuary, July 1994). Mike Lowry's contribution to Washington marine conservation will live on.

TREATY TRUST RESPONSIBILITIES

Intergovernmental Policy Council Addresses Threats to Olympic Coast

Representatives of the Intergovernmental Policy Council (IPC) including the Quinault Indian Nation, Hoh Tribe, Quileute Tribe, Makah Tribe, and State of Washington met with John Armor, Office of National Marine Sanctuary Director, OCNMS management staff, and OCNMS Advisory Council Chair, Lee Whitford, in Taholah, Washington. The meeting focused on IPC-led efforts to characterize habitats within the sanctuary, as well as progress on designating Olympic Coast as a sentinel site for ocean acidification. The IPC also honored Katie Krueger, Quileute Tribe, and Nancy Wright, OCNMS Marine Geographer, who is retiring, for their many years of service. The IPC was created in 2007 to create a forum for discussions on ocean policy issues amongst coastal tribes, State of Washington, and NOAA representatives, honoring the federal trust responsibility to Indian tribes.

ONMS Director Meets with Makah Tribe

ONMS Director John Armor, Olympic Coast National Marine Sanctuary (OCNMS) Superintendent Carol Bernthal, and Deputy Superintendent George Galasso met with members of the Makah Tribal Council and Makah staff to discuss a number of issues related to consultation and collaboration. The OCNMS-Makah Permit Consultation Protocol, negotiated in 2015, was discussed. While no changes to the current process were identified, it was agreed that staff would continue to work together to identify improvements to the process. An additional protocol related to consultations that take place between ONMS and other federal agencies under Section 304 of the National Marine Sanctuary Act was also discussed. It was agreed to have staff continue discussion on the issue. OCNMS briefed the Makah Tribe on ongoing assessment of ocean dumping within Makah fishing grounds. Additional discussions included the importance of collaborating on oil spill prevention and preparedness.

Quileute Nation Celebrates 10th Annual Welcoming the Whales Ceremony

On March 31, Quileute Nation hosted their 10th annual *Welcoming the Whales* Ceremony to celebrate their cultural connection to the ocean and the migratory whales that begin to pass through Quileute and sanctuary waters. Youth from Quileute Tribal School provided an offering to the whales as they passed the reservation, with students leading the offering into the surf this year. Gray whales breached several times in nearshore waters as students participated in traditional songs, dancing, and drumming led by tribal elders and council members. The ceremony continued away from the beach at the A-Ka-Lat Center with a shared meal and festivities. Quileute Tribal Nation is one of four Coastal Treaty Tribes adjacent to Olympic Coast National Marine Sanctuary and are co-managers of the ocean resources.

ACHIEVE EFFECTIVE AND COORDINATED MANAGEMENT

SeaRiver Maritime Conducts Drill to Plan for Response to Sanctuary Oil Spill

SeaRiver Maritime, ExxonMobil, U.S Coast Guard, Makah Tribe, Washington Department of Ecology, NOAA Office of Response and Restoration, Olympic Coast National Marine Sanctuary (OCNMS), and several oil spill response corporations, conducted an oil spill drill focusing on the outer coast of Washington State. In the drill scenario, an inbound oil tanker has a collision in the traffic lanes at the entrance to the Strait of Juan de Fuca in OCNMS, releasing 80,000 oil barrels (bbls) or 3,360,000 gallons of crude oil. As a point of reference the most recent large oil spill in the area, the 1991 collision between the F/V *Tenyo Maru* and the Chinese freighter *Tuo Hai*, resulted in a spill of 354,800 gallons of intermediate fuel oil, 97,800 gallons of diesel fuel, and 22,500 gallons of fish oil. Sanctuary staff participated in the environmental unit, helping to identify resources at risk and as a liaison to area governments, agencies, and communities. This was the first oil spill drill in the sanctuary since 2008.

Marine Spatial Plan for Washington Coast Presented at Community Gathering

On May 4, Surfrider Foundation and OCNMS co-hosted a presentation on the Washington Marine Spatial Plan (MSP)—followed by a discussion panel discussion with stakeholder representatives—in Port Angeles, Washington. The State of Washington has been leading an effort to develop a marine spatial plan for the outer coast (http://msp.wa.gov/learn/about) over the past few years, and the plan is nearing completion. The preliminary draft of the plan, found online at http://msp.wa.gov/learn/resources, is expected to be updated and released for public review and comment in mid-May. The event featured a presentation from Jennifer Hennessey, Ocean Policy Lead with Washington Department of Ecology, with an overview of the planning process, what the plan includes and means for informing future management of the Washington Coast, and how the public can engage in the review of the plan. A moderated panel discussion followed the presentation and consisted of stakeholder representatives involved in the planning process, including Jennifer Hennessey, OCNMS Deputy Superintendent George Galasso, Makah Tribal Council's Natural Resource Policy Analyst Katie Wruebel, Surfrider Foundation's Washington Field Coordinator Brice Boland, and North Pacific Coast Lead Entity and Marine Resources Committee Coordinator Richard Osborne.

IMPROVE OCEAN LITERACY

Olympic Coast National Marine Sanctuary's Big Mama Makes a Splash with Youth

OCNMS made a splash with its inflatable, walk-inside humpback whale display with Quileute Tribal School students in La Push, Washington. OCNMS education staff led students on a close-up tour of Big Mama's inside and outside. The 43-foot-long humpback whale exhibit is modeled after a large female individual from the North Pacific population who travels through and feeds in Olympic Coast National Marine Sanctuary and the Strait of Juan de Fuca each year en route from Hawaii to Alaska. As "whale scientists," students practiced identifying humpback whales by individual fluke markings, as well as understanding their anatomy and behaviors, while getting up close and personal with the life size replica of Big Mama. Quileute Tribal School students also studied marine mammals as they prepared for the school's 10th Annual *Welcoming the Whales* Ceremony on March 31. For more information on Quileute *Welcoming the Whales* Ceremony visit https://quileutenation.org.

Additionally, 80 elementary school students from Forks Elementary School in Forks, Washington celebrated our blue planet by learning about the wonders of Olympic Coast National Marine Sanctuary. Students viewed *Discover the Olympic Coast*, a 30 minute film by cinematographer Florian Graner, and then participated in educational hands-on food web, humpback whale, and marine debris activities. A student favorite was the walk-inside life-sized "Big Mama" humpback whale display and activities that allowed students to be whale scientists. Students spent time identifying various whales by individual fluke markings, as well as understanding their anatomy and behaviors.

Students *Discover the Olympic Coast* with Olympic Coast National Marine Sanctuary

Olympic Coast National Marine Sanctuary education staff hosted 84 sixth grade students, and 10 adults from Forks, Washington to view the underwater film, *Discover the Olympic Coast.* The video was filmed in OCNMS by marine biologist and cinematographer Florian Graner and allowed the students to discover the diverse sanctuary habitats and organisms without leaving their chairs. Students then created a model of the complex marine food web, looking at predator and prey relationships, adaptations for survival in marine habitats, and the interdependence of a healthy, balanced food web that includes humans. The program took place in partnership with Feiro Marine Life Center, who provided plankton tows and microscope viewing along with touch tank explorations.

Skagit Academy Participated in Ocean Acidification Education with OCNMS

OCNMS and Feiro Marine Life Center partnered to engage 15 ninth and tenth grade students and their instructors from Skagit Academy in ocean acidification education. Along with an introduction to ocean acidification, the program included a plankton investigation and an overview of the National Marine Sanctuary System. Students worked with sanctuary educators to make the global connection between human actions and carbon dioxide emissions to changing ocean chemistry. They also discussed changes that can be made on both the personal and community level to help reduce the amount of carbon dioxide we release into our atmosphere, and ultimately to help maintain healthy ocean environments.

West Coast Region Sanctuaries Awarded Funds to Enhance Ocean Acidification Monitoring

National marine sanctuaries of the West Coast Region (WCR) education team, partnering with Flathead Valley Community College, NOAA National Centers for Coastal Ocean Science, and NOAA Northwest Fisheries Science Center, received notification that they were recommended for 2017 Ocean Acidification Program (OAP) mini-grant award. The $9,650 award will allow WCR sanctuaries to increase accessibility and understanding of tools and protocol for ocean acidification monitoring through citizen science and education programs. WCR sanctuaries will work with Flathead Valley Community College to pilot a field-based pH-measuring instrument called "pHyter" – a hand-held chemical indicator-based spectrophotometric pH-measuring device – with WCR sanctuaries' ocean acidification education and outreach programs, including citizen science, teacher workshops, and student field investigations. OAP funds will support the expansion of pHyter instrument capabilities to permit iPhone and android apps to interface and upload to the international GLOBE Program GIS database, increasing accessibility of pH data worldwide. Funds will also support the development of an ocean acidification curriculum and pilot testing of the new pHyter capabilities across all WCR sanctuaries, using citizen science as the investigative model. This project will directly reach approximately 500 educators, students, and citizen volunteers through WCR site-specific education and

outreach pilot programs, with potential to indirectly reach thousands more once trained educators transfer their knowledge to others and the online curriculum is made publicly available.

OCNMS Recognizes Volunteer of the Year 2016 Susan Griffith for Education

Susan Griffith was nominated for the National Marine Sanctuary Foundation's 2016 Volunteer of the Year Award for her dedication to marine education in Olympic Coast Discovery Center. Sue first went to the Quileute Reservation to teach a summer marine science camp, and after being hired to teach in the Tribal School, she started teaching ocean science to her students. Highlights of this program include numerous tidepool explorations with education specialists, participating in the Ecosystem Pen Pal program with American Samoa, and a Whale Watching trip with all of her students. A volunteer docent for the Olympic Coast Discovery Center since 2011, Sue Griffith delivers interpretive information about the natural and cultural resources in Olympic Coast National Marine Sanctuary to domestic and international visitors. Sue brought marine debris education and action to her students at Quileute Tribal School and helped lead them on shoreline debris surveys on Quileute Indian Reservation. Sue assists with multiple educational and outreach activities, including youth summer camps and community festivals. Her understanding of the unique characteristics of the Olympic Peninsula and its communities allow her to promote ideas and activities for place-based efforts, which resonate with sanctuary partners and stakeholders. We thank Sue for her commitment and service!

Discovery Center and Marine Life Center Docents Participate in Workshop on Climate Change Interpretation

OCNMS and Feiro Marine Life Center (FMLC) partnered to deliver a workshop for volunteer docents on climate change interpretation based on the National Network for Ocean and Climate Change Interpretation (NNOCCI). OCNMS and FMLC staff members participated in a semester-long online and in-person study circle with peer groups of 22 informal science educators to learn about strategic framing. NNOCCI's goal is to establish a national network of professionals who are skilled in communicating climate science to the American public in ways that are engaging and stimulate productive dialogue. A total of 13 docents and eight staff from both facilities participated in the workshop at FMLC, which gave an overview of strategic framing, key metaphors to use to communicate fundamental climate change phenomena, and proven values to include in messaging. Feedback was positive, with requests for further trainings to delve deeper into topic areas and spend more time practicing.

National Marine Sanctuary Foundation Awarded Marine Discovery Center Grant Funding from Port of Port Angeles

The National Marine Sanctuary Foundation secured a $4,000 grant from the Port of Port Angeles to help develop a conceptual design for a campus featuring a new Port Angeles Waterfront Center and potential marine discovery center at property in downtown Port Angeles. For many years, Feiro Marine Life Center and Olympic Coast National Marine Sanctuary have discussed options for a combined visitors and educational center that will improve visitors' services and educational programming. This project will help bring that vision one step closer to reality.

Iconic Facility Under Development for Port Angeles

Carol Bernthal attended a facility design workshop sponsored by the Port Angeles Waterfront Center (PAWC) board, a non-profit entity working on creating an iconic new fine arts center in downtown Port Angeles. The PAWC board is exploring the option to offer a portion of the property to Feiro Marine Life Center and the National Marine Sanctuary Foundation to co-locate a marine discovery center on the property, blending together art, ocean conservation and science. Consultants provided background information on market analysis and comparably sized facilities around Washington State and asked for input from arts and science related organizations on their facility needs.

A Plastic Ocean Screenings Raise Awareness and Recruit Volunteers for Washington Coast Cleanup

On April 13, OCNMS hosted a free screening of *Plastic Ocean* in partnership with Washington CoastSavers and Peninsula College Magic of Cinema. Seventy community members enjoyed the feature-length adventure documentary bringing to light the consequences of our global disposable lifestyle. A lively panel discussion followed the screening, where audience members were able to ask questions to local experts looking at local and global actions available to mitigate our dependence on plastic. Participants were able to sign up for the Washington Coast Cleanup on April 29, where more than a thousand volunteers from around Washington state removed tons of marine debris from our shorelines.

On April 22, OCNMS partnered with Washington CoastSavers and Port Townsend Marine Science Center to host a free Earth Day screening of *A Plastic Ocean* in Port Townsend, Washington. Forty community members enjoyed the feature-length film, followed by a discussion led by sanctuary Superintendent, Carol Bernthal.

Olympic Coast Celebrates Annual Junior Ranger Day

OCNMS education staff supported Olympic National Park's (ONP) Junior Ranger Day with a sea otter focused booth, complete with a mock sea otter population study. Youth and adults alike learned all about the keystone species and their history within the sanctuary while participating in crafts and activities. Event attendees participated in a variety of other activities hosted by various groups, including ONP fire crews and interpretive and law enforcement rangers. Once youth visited at least four of the available booths, they received an official Junior Ranger badge, committing to their role as stewards of our national parks and national marine sanctuaries. More than 163 people attended the annual event at the ONP Visitor Center in Port Angeles, Washington.

Celebration of Earth Day and Science

Olympic Coast Discovery Center was open to celebrate Earth Day in conjunction with a community "Celebration of Science" along the Port Angeles waterfront, co-sponsored by Olympic Climate Action and Feiro Marine Life Center. The event celebrated the important role science plays in each of our daily lives and featured activities for kids, informative booths staffed by Olympic Peninsula organizations and businesses, posters, presentations, and a "Wall of Scientists" honoring the many scientists—including NOAA scientists—living and working on the Olympic Peninsula (https://olyclimate.org/2017/03/23/celebration-of-science).

Ocean Acidification Education at Annual Grays Harbor Shorebird and Nature Festival

On May 6-7, the spring migration of shorebirds in Grays Harbor County was celebrated with the annual Grays Harbor Shorebird and Nature Festival (www.shorebirdfestival.com) in Hoquiam, Washington. Fourteen local sponsors organized the event, including Grays Harbor Audubon Society, Grays Harbor National Wildlife Refuge, and the City of Hoquiam. The festival is timed to coincide with the annual migration of hundreds of thousands of shorebirds as they stop over in the Grays Harbor estuary to feed and rest before continuing their journey to their nesting grounds in the Arctic. Some of the birds travel more than 15,000 miles round trip! OCNMS education staff hosted an informative and interactive booth focused on ocean acidification and led adults and children through an investigation of the mechanisms behind ocean acidification. Participants also developed ideas of personal and community level actions that we can strive to incorporate to reduce the impact of ocean acidification.

Bringing the Ocean Depths to People in Real Time

The Ocean Exploration Trust brought together lead scientists, educators, and expedition members to plan goals and activities for the 2017 research season aboard Exploration Vessel (E/V) *Nautilus* (www.oceanexplorationtrust.org/ev-nautilus). The expedition, funded by NOAA's Office of Oceanic and Atmospheric Research, will include research in West Coast national marine sanctuaries, including seafloor mapping and remotely operated vehicle (ROV) operations to document shipwrecks and other maritime resources. As E/V *Nautilus* travels along the West Coast, OCNMS staff will simultaneously use onboard telepresence capabilities and onshore companion activities to bring the unexplored ocean depths of national marine sanctuaries to people across the globe in real time.

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

Resource Protection Specialist Liam Antrim Retires After 17 Years

After 17 years of stellar service, we bid a fond farewell to Liam Antrim, OCNMS Resource Protection Specialist. During his tenure with OCNMS, Liam served in multiple roles and tasks which included handling permits, marine debris coordination, supporting the update of the Olympic Coast National Marine Sanctuary management plan, and coordinating the sanctuary advisory council. He also served in the dual role as Acting Research Coordinator and Resource Protection Specialist for more than a year and was honored with the NOS Employee of the Year in 2016 and several other performance awards. Liam was well respected by his fellow staff and the communities he served and will be sorely missed at Olympic Coast.

Science Communication Workshop for Summer 2017 *Nautilus* Expedition Through West Coast Sanctuaries

The Office of National Marine Sanctuaries (ONMS) participated in the March 20-23 *Nautilus* Expedition workshop at the Ocean Exploration Trust offices in Rhode Island. The workshop brought together more than 60 scientists, educators, and expedition members for the 2017 *Nautilus* Exploration Program on board Exploration Vessel *Nautilus*. Sessions included overviews of the scientific objectives of individual cruises, programs and outreach goals, and trainings in state-of-the-art telepresence technologies. Funded through NOAA's Office of Exploration and Research, the expedition begins May 1 in Southern California waters, and travels through West Coast sanctuaries before ending November 19 in Mexico. Targeted research opportunities in sanctuaries will include seafloor mapping and ROV operations for research, surveys, and maritime heritage documentation. Dani Lipski (CBNMS), Julie Bursek (CINMS), Amity Wood (MBNMS), Jenny Waddell (OCNMS), and Sarah Marquis (ONMS) represented ONMS. Amy Bowman and Catalina Martinez, NOAA Office of Ocean Exploration and Research, also attended, and will work closely with ONMS for the expedition. The collaboration is an opportunity to showcase the unique science and education capabilities of the E/V *Nautilus* by exploring and studying NOAA national marine sanctuaries.

Researchers Meet to Discuss Potential Impacts to Marine Mammals from Acoustic Activities

On April 25-27, OCNMS Research Coordinator Jenny Waddell represented the Office of National Marine Sanctuaries at the United States Navy Pacific Marine Species Monitoring meeting in Seattle. The 2.5-day event included presentations from several Principal Investigators who have been funded by the United States Navy to investigate potential impacts to marine mammals from acoustic technologies commonly used by the military, such as Multi-frequency Active Sonar. Meeting participation was limited to staff from U.S. Navy and NOAA who are engaged in acoustic research projects throughout the Pacific region. Projects focused primarily on potential sound impacts within and around naval testing and training ranges, including those that are coincident with NOAA interests including OCNMS, Channel Islands National Marine Sanctuary, Hawaiian Islands Humpback Whale National Marine Sanctuary, the Gulf of Alaska, and the Marianas Islands (i.e., Guam and the Commonwealth of the Northern Mariana Islands - CNMI). This was the interagency group's first joint meeting for the Pacific region, and both parties are hopeful that it is the first in a series of annual meetings that allow partners to share research results and plan future investigations.

CONSERVE NATURAL RESOURCES IN THE SANCTUARY

Washington Coast Cleanup Successfully Removes 20+ Tons of Debris from Olympic Coast

On April 29, mostly dry skies welcomed more than 1,300 volunteers to the beach to remove marine debris from Washington's coast. Volunteers removed at least 20 tons of marine debris from more than 65 beaches from the Strait of Juan de Fuca and outer coast of Washington. All volunteers returned safely, avoiding injury through physical work, hauling hundreds of bags of garbage, boat parts, floats, rope, and plastic off our shorelines. OCNMS staff organized volunteers at the registration station on Hobuck Beach of the Makah Reservation in Neah Bay. The station coordinated cleanups at Hobuck, Tsoo-Yess, Shi Shi, and Point of the Arches beaches. The Office of National Marine Sanctuaries Director John Armor joined Carol Bernthal, sanctuary Superintendent, and a group of teens from the Youth Environmental Stewardship Program (YES!), Port Townsend Marine Science Center, Northwest Watershed Institute, and Americorp staff in cleaning up Shi Shi beach.

The sanctuary is a founding member of Washington CoastSavers and contributes significantly to the organization's long range planning, funding, and event coordination. Following the cleanup, volunteers gathered in celebration and enjoyed BBQ's at registration stations up and down the coast. The 4th Annual River and Ocean Film Festival in Forks wrapped up the cleanup events, more than 130 volunteers and community members attending to continue the celebration of our ocean backyard. The festival featured twelve short films produced by both local and non-local filmmakers, all displaying the beauty and power of the marine environment.

Majority of Mariners Comply with Voluntary Area to be Avoided

Olympic Coast National Marine Sanctuary (OCNMS) has published their annual report on Area to be Avoided (ATBA) compliance and reports an industry compliance of approximately 97.3% in 2016. Shortly after OCNMS's designation in 1994, the International Maritime Organization designated the ATBA off the coast of Washington to reduce the risk of marine casualties including oil spills and the resulting damages to sanctuary resources. All vessels over 400 gross tons are requested to stay outside the ATBA. This applies to vessel transits and does not apply to vessels that are conducting operations in the area, such as fishing or research. The sanctuary has an outreach and monitoring program to maintain a traditionally high level of compliance. This is the 12th year that OCNMS has reported estimated ATBA compliance. The report can be downloaded at: http://olympiccoast.noaa.gov/protect/incidentresponse/2016_ais.pdf.

Sanctuary Reviews Circumstances of Lost Vessels

The waters off the Olympic Coast of Washington State are a national treasure, deserving of special recognition and protection. They also serve as an important marine highway and provide livelihood and recreation for many that ply its waters in vessels large and small. Since Olympic Coast National Marine Sanctuary was designated in 1994, it has worked to help partners in preventing oil spills. While there have been no large spills in this period, it is not uncommon for smaller vessels to become lost. The sanctuary reviewed the circumstances of 46 vessels that have sunk, grounded, or capsized over a 22 year period. The abandonment of sunken or grounded vessels is one of the more challenging enforcement and management issues of OCNMS, making up the majority of our open enforcement cases. The report is meant to inform a planned Advisory Council working group, which will look into the issue and make recommendations to the sanctuary Superintendent. It is hoped that this analysis will assist the sanctuary in identifying ways to reduce future losses. The report can be downloaded at: http://sanctuaries.noaa.gov/science/conservation/olympic-coast-vessel-incident-1994-to-2016.html.

Staff Train for the Unexpected

The Olympic Coast National Marine Sanctuary Management Plan of 2011 contains an action plan that addressed spills prevention, preparedness, response, and restoration. Each year the sanctuary reviews staff training requirements and potential roles in the event of an incident response. An important part of this effort is the annual Hazardous Waste Operations and Emergency Response (HAZWOPER) refresher training. OCNMS, with assistance from the Marine Spill Response Corporation and NOAA Office of Response and Restoration, conducted a HAZWOPER class tuned to specific sanctuary needs. Conducting this training enables staff to better respond to oil spills in the sanctuary. The training included elements specific to OCNMS including the response to certain smaller and non-pollution incidents in the sanctuary.

UNDERSTANDING THE SANCTUARY'S CULTURAL, HISTORICAL AND SOCIOECONOMIC SIGNIFICANCE

Dr. James Delgado Shares Recent Shipwreck Discoveries

On March 30, Director of NOAA's Maritime Heritage Program for the Office of National Marine Sanctuaries, Dr. James Delgado, presented *Solving the Mysteries of the Deep: Recent Shipwreck Discoveries* to 40 community members of Port Angeles, Washington. The compelling presentation focused on undersea exploration along the west coast, sharing the stories of lost ships and their crews, and the technology that has allowed the discovery and documentation of these wrecks from waters hundreds to thousands of feet deep. The presentation brought attention to the upcoming E/V *Nautilus* mission exploring west coast sanctuaries and the opportunities to tune into live broadcasts at www.nautiluslive.org/. On April 1, Dr. Delgado shared these discoveries to an audience of more than 80 diving enthusiasts at The SCUBA and H20 Adventure Show in Tacoma, Washington (www.scubah2oshow.com).

SANCTUARY PERMITTING

Issued Permits and Authorizations

OCNMS-2017-001 – Consortium for Ocean Leadership - OOI
Project Title: Ocean Observatories Initiative - Endurance Array 25m Inshore Mooring and Glider Operations
Permitted Activity: Installation of buoys, and altering or disturbing the seafloor in connection with anchor placement
Project Location: Near southern boundary of OCNMS, off Copalis Head
Permit Duration: Original permit was for three years, currently through June 2018. Amended permit will extend through the end of 2019.
Comment: Permit OCNMS-2015-001 needs to be reissued as a new permit to update to current OOI staff. Based on a review of backscatter imagery, there will be a minor revision on the mooring location.

OCNMS-2017-002 – U.S. Fish and Wildlife Service
Project Title: Aerial Surface-nesting Seabird Survey
Permitted Activity: Low-altitude overflights of migratory seabirds on or near Washington Islands National Wildlife Refuge Complex Islands
Project Location: Airspace above NWR islands
Permit Duration: Five years
Comment: Permit OCNMS-2012-005 needs to be reissued as a new permit to update to current USFWS staff and extend permit dates.

OCNMS-2017-003 – Trumbull Unmanned
Project Title: Assessment of Unmanned Aircraft Applications in Shoreline Cleanup
Permitted Activity: Low overflight of unmanned aircraft in support of emergency oil response.
Project Location: Airspace adjacent to Makah Bay
Permit Duration: Two days
Comment: Permit OCNMS-2017-003 required a quick turnaround to accommodate oil spill Shoreline Cleanup and Assessment Technique (SCAT) training, which was supported by the Makah Tribe.

MULTI-2017-001 – Annette Henry, Southwest Fisheries Science Center
Project Title: Drifting acoustic spar buoy recorders (DASBR) Passive Acoustic Monitoring of Cetaceans
Permitted Activity: Discharge of drifting buoys
Project Location: Throughout the California Current Ecosystem
Permit Duration: Through the end of 2019
Comment: This is a multi-sanctuary permit for all west coast sanctuaries. MBNMS is the lead for processing the permit.

MULTI-2017-004 – Dr. Aimee Keller, Northwest Fisheries Science Center
Project Title: NWFSC West Coast Groundfish Bottom Trawl Survey

Permitted Activity: Alteration of the seafloor for the purpose of bottom trawl groundfish survey, except as specified in special terms and conditions.
Project Location: Throughout the California Current Ecosystem
Permit Duration: Two years
Comment: This is a multi-sanctuary permit for all west coast sanctuaries. CBNMS is the lead for processing the permit.

MULTI-2017-006 – Dr. Gerald DiNardo, Southwest Fisheries Science Center
Project Title: SWFSC Coastal Pelagic Survey
Permitted Activity: Flying an Unmanned Aerial System (UAS) at an elevation of 300 feet within NOAA regulated overflight zones to conduct coastal pelagic species (CPS) survey activites.
Project Location: Throughout the California Current Ecosystem
Permit Duration: Through the end of 2018
Comment: This is a multi-sanctuary permit for all west coast sanctuaries. MBNMS is the lead for processing the permit. Special conditions identified sensitive buffers to be avoided.

Pending Permit Requests
OCNMS-2016-010 – Chris Morgan, NatureBridge
Project Title: NatureBridge Drift-Card Citizen Science Project
Permitted Activity: Discharge to sanctuary waters, specifically discharge of biodegradable (thin plywood) drift cards from shoreline locations
Project Location: Proposed discharge sites are Cape Flattery, Cape Alava, and Second or Third Beach
Permit Duration: One year requested; multi-year permit may be considered
Comment: This permit is supports continuation of a NatureBridge field science program to engage students in education of marine currents and ocean stewardship. Approval from Olympic National Park and tribal landowners will be required to support sanctuary permit issuance.

OCNMS-2012-006-A1 – Dr. Simone Alin, Pacific Marine Environmental Labratory
Project Title: Wave Glider in Support of Ocean Acidification Research
Permitted Activity: Discharge to sanctuary waters, by an autonomous surface vehicle referred to as a wave glider
Project Location: Proposed discharge sites are Cape Flattery, Cape Alava, and Second or Third Beach
Permit Duration: Originally, a five-year permit, it will be extended by 3 months.
Comment: This permit needs to be amended to extend the time period through the end of this field season.

LEARN ABOUT YOUR SANCTUARY / NATURAL HISTORY

Olympic Region Harmful Algal Bloom Reports HABs

On May 5, the Olympic Region Harmful Algal Bloom network reported detections of *Pseudonitzschia spp*. harmful algal blooms in locations coast-wide in mid-April, with particularly high counts at Neah Bay. Domoic acid levels in razor clams have also exceeded the harvest closure limit at several of Washington's south coast beaches and are increasing along the central coast as well; recreational razor clam fisheries at several beaches have been closed for the rest of the season as a result. Paralytic Shellfish Poisoning is detectable in shellfish along the entire coast but has not risen to the action level. In terms of the current phytoplankton assemblage, *Skeletonema costatum* is dominant from Neah Bay to Kalaloch. *Attheya armatus* is dominant from Quinault Beach to Copalis Beach. Overall, phytoplankton diversity is up with many pennate diatoms and flagellates.

REGIONAL / NATIONAL MARINE SANCTUARY SYSTEM NEWS

Hypoxia Monitoring at Cordell Bank National Marine Sanctuary

For the fourth year in a row, oceanographic instruments were deployed in Cordell Bank National Marine Sanctuary to capture dissolved oxygen data occurring during the spring upwelling through the fall season. Low-oxygen, or hypoxic, water occurs naturally in the deep ocean, but in recent years, intrusions of hypoxic water have been found in shallower waters along the West Coast (http://oceanservice.noaa.gov/hazards/hypoxia). Results from 2014-2016 show variability within and between years, with hypoxic events occasionally present for short periods. The sanctuary is home to a vibrant invertebrate and rockfish community, which may be vulnerable to hypoxic conditions. Since these conditions have had significant impacts in other areas, continuing analysis is needed to assess conditions in the sanctuary and to better understand how hypoxic events impact the ecosystem.

Greater Farallones and Channel Islands Advance Toward Re-Entry into UNESCO's Man and the Biosphere Program
On March 14, the U.S. Department of State was notified by UNESCO that 14 of the US Biosphere Reserves that submitted periodic reviews to be re-admitted into the UNESCO Man and the Biosphere Programme (MAB) were found to meet the necessary criteria by the International Advisory Committee for Biosphere Reserves (IACBR). IACBR's recommendations must be reviewed and endorsed by the MAB International Coordinating Council in June 2017. The MAB program has been dormant in the U.S. for about 20 years, and the State Department began last year to facilitate the process of U.S. sites going through the process to become re-certified by UNESCO as active participants. ONMS is involved in three biosphere reserves: 1) Golden Gate BR (Greater Farallones, Cordell Bank with Golden Gate NRA and 11 others); 2) Channel Islands BR (Channel Islands NMS & NP); and 3) Carolinian BR (Grays Reef, with many other terrestrial and coastal protected areas). Golden Gate and Channel Islands submitted their review requests, while the Carolinian Biosphere Reserve decided to take more time to re-engage local partners and new protected areas in the initiative. The Biosphere Reserve program highlights the value of protected areas as hubs for sustainable development, and offers an opportunity to be part of a global community working on issues of protected areas and sustainable economic development and receive international recognition.

NOAA Websites Nominated for 2017 Webby Awards & Webby's People's Voice Awards
Two NOAA websites have been nominated for both the 2017 Webby Awards and the Webby People's Voice Awards (http://webbyawards.com). The Webby Awards is "the leading international award honoring excellence on the Internet." NOAA's flagship website, NOAA.gov, received a Webby Award nomination in the "Government and Civil Innovation" general website category. The NOAA Climate.gov Climate Explorer website was nominated in the category for "Best Visual Design - Function." Webby Award winners are selected by an independent body, but Webby People's Voice Awards are voted on by the online public. Online voting for the Webby People's Voice Award winners was open through April 20. See more at: https://vote.webbyawards.com/PublicVoting#/2017/websites/general-website/government-civil-innovation
and https://vote.webbyawards.com/PublicVoting#/2017/websites/website-features-and-design/best-visual-design-function

Providing Sustainable Outdoor Recreation Opportunities
Healthy, viable marine ecosystems are fundamental to successful ocean recreation and tourism. The Marine Protected Areas Center led an ocean recreation discussion at the annual meeting of the Interagency Visitor Use Management Council in Denver, Colorado (https://visitorusemanagement.nps.gov). Comprised of all major federal land and water management agencies, the council coordinates, leverages, and supports efforts to balance recreational uses with long-term sustainability of protected and managed areas. NOAA's participation emphasizes balancing the conservation of ocean areas with the management of compatible recreational uses, which, in turn, ensures continued visitation and use and the attendant benefits generated to coastal communities.

"Sister Sanctuaries" Collaborate to Protect Humpback Whales
Stellwagen Bank National Marine Sanctuary protects humpback whales that feed and nurse in its sanctuary waters. The migratory whales are also highly dependent on Caribbean waters, where they mate and give birth. The Sister Sanctuary Network (http://stellwagen.noaa.gov/sister) was created to protect humpback whales beyond U.S. waters along their North Atlantic and Caribbean migratory route. With the recent addition of Yarari, the Caribbean Netherlands' Marine Mammal and Shark Sanctuary, the network grew by almost 7,000 square nautical miles. Starting with 638 square nautical miles off the coast of Massachusetts, the joint effort now encompasses nearly 195,000 square nautical miles.

MARINE-RELATED NEWS COVERAGE

All You Can Eat Wings: Seabirds are the Unintended Victims of Hungry Humpback Whales
"First come the diving birds—common murres and rhinoceros auklets—piercing the waves and driving schools of small fish into tight balls. The fish flee upward, only to fall victim to the surface feeders: herring gulls and bald eagles. Predators are picking them off from above and below. But one more hungry mouth is showing up to crash the party."
www.hakaimagazine.com/article-short/all-you-can-eat-wings

Pacific Fishery Management Council Chooses Options for 2017 Salmon Season
"The Pacific Fishery Management Council today adopted three public review alternatives for the 2017 salmon seasons off the West Coast of the United States. The Council will select a final alternative at their next meeting in Sacramento, California on April 6-11. Detailed information about season starting dates, areas open, and catch limits for all three alternatives are available on the Council's website."
www.pcouncil.org/2017/03/46882/pacific-fishery-management-council-chooses-options-for-2017-salmon-season/

Sea Lion Necropsy Unearths Surprising Cancer Finding
"Old age beached a Steller sea lion that was euthanized after it was found dying on shore in January, but a finding during the animal's necropsy has led researchers into another investigation."
www.peninsuladailynews.com/news/sea-lion-necropsy-unearths-surprising-cancer-finding/

Northwest States Write Up Wake Up Call For 'The Big One'
"The report cards are in and it's not pretty if you worry about how you'll fare after a Magnitude 9 Cascadia megaquake and tsunami. Washington and Oregon's emergency management divisions have now published after-action reviews of last June's multi-state disaster drill called Cascadia Rising."
http://nwnewsnetwork.org/post/northwest-states-write-wake-call-big-one

The World's Oceans are Storing up Staggering Amounts of Heat—and It's Even More than We Thought
"The world is getting warmer every year, thanks to climate change — but where exactly most of that heat is going may be a surprise. As a stunning early spring blooms across the United States, just weeks after scientists declared 2016 the hottest year on record, it's easy to forget that all the extra warmth in the air accounts for only a fraction of the heat produced by greenhouse gas emissions."
www.washingtonpost.com/news/energy-environment/wp/2017/03/10/the-worlds-oceans-are-storing-up-staggering-amounts-of-heat-and-its-even-more-than-we-thought/?utm_term=.d5778e38a566

Carbon Dioxide in the Atmosphere is Rising at the Fastest Rate Ever Recorded
"For the second year in a row, atmospheric carbon dioxide concentrations have climbed at a record pace. According to data from the National Oceanic and Atmospheric Administration, carbon dioxide levels jumped by three parts per million in both 2015 and 2016 and now rest at about 405 parts per million."
www.washingtonpost.com/news/energy-environment/wp/2017/03/13/carbon-dioxide-in-the-atmosphere-is-rising-at-the-fastest-rate-ever-recorded/?utm_term=.949cbe36dcdd

Feiro Marine Life Center, Planned Waterfront Facility to Share Campus
"The Port Angeles Waterfront Center's performing arts facility and Feiro Marine Life Center will create a shared campus on the same downtown Port Angeles Harbor property, officials from both organizations predicted."
www.peninsuladailynews.com/news/feiro-marine-life-center-planned-waterfront-facility-to-share-campus/

Orca Whales return to Puget Sound, Just in Time for Start of Spring
"Orca whales have officially returned to Puget Sound waters. On the second day of spring, KIRO 7's Chopper spotted a group of orca whales, swimming above and below the water."
www.kiro7.com/news/local/orca-whales-return-to-puget-sound-just-in-time-for-start-of-spring/504748844

A Search for Clues to What Causes Whale Strandings
"Take half a dozen retired Navy dolphins and put them in a huge tank with a trainer and some oversized hula hoops for six months and what do you get? Potential clues to unraveling the mysteries behind why some marine mammals are susceptible to mass strandings, scientists hope."
www.nytimes.com/2017/03/16/science/what-causes-whale-strandings.html?_r=1

Dan Haifley, Our Ocean Backyard: Ocean Gem on Our Canadian Border
"With the U.S.-Canadian offshore border as its northern boundary, Olympic Coast National Marine Sanctuary hugs 135 miles of Olympic Peninsula coastline including Olympic National Park, reservations of the Makah Nation, Quileute Tribe, Hoh Tribe and Quinault Indian Nation; private lands, as well as Washington State parks. It extends offshore a distance of 25 to 50 miles, covering 3,188 square miles."
www.santacruzsentinel.com/environment-and-nature/20170408/dan-haifley-our-ocean-backyard-ocean-gem-on-our-canadian-border

Guest Column: Forty Thousand Pounds of Trash on State's Coastal Beaches
"On one morning in April of last year, over 1,400 volunteers came together to remove more than 20 tons of trash from at least 50 beaches during the Washington Coast Cleanup. Unfortunately, this was not an extreme amount of debris found on beaches from Cape Disappointment to Cape Flattery. It was a unique day because of the amount of people focused on addressing the problem of plastic pollution."
www.chinookobserver.com/co/columns/20170322/guest-column-forty-thousand-pounds-of-trash-on-states-coastal-beaches

Registration Open for Washington Coast Cleanup on April 29
"Every April for the past 10 years, Washington CoastSavers and its partners and volunteers have cleaned up what the winter storms have brought in. 'Usually this effort is done on the Saturday closest to Earth Day,' which is April 22, 'but this year, the tides are high on Earth Day morning, so we're cleaning the beach the following Saturday,' said Jon Schmidt, CoastSavers coordinator."
www.peninsuladailynews.com/news/registration-open-for-washington-coast-cleanup/

Listen to How Loud the Sea Is
"Busy waters surround the southern tip of British Columbia's Vancouver Island in what is called the Salish Sea. To the west, the Juan de Fuca Strait acts as an off-ramp for container ships, tankers, and freighters moving into the ports of Seattle and Tacoma, Washington, or Vancouver, British Columbia."
www.hakaimagazine.com/infographic/listen-how-loud-sea

Biology Versus Bones: the Case of the Cape Flattery Fur Seal
"The fishing rights of Olympic Peninsula tribes hinge on solving the identity of Cape Flattery's fur seals.The ancestors of the modern-day Quileute and Quinault peoples of Washington State's Olympic Peninsula hunted northern fur seals for food and furs, and past archaeological excavations along the peninsula's northwestern coast unearthed a trove of seal bones representing all stages of life—from pups to adults. But the fact that no breeding rookery for northern fur seals could be found on the Olympic Peninsula had scientists scratching their heads—where did the bones come from?"
www.hakaimagazine.com/article-short/biology-versus-bones-case-cape-flattery-fur-seal

Animation Shows Boats Make 'Acoustic Hell' for Orcas
"An expert on how boat noise affects whales is showing off his new computer animation in Seattle. It shows what he calls 'acoustic hell' for orcas. Dr. Chris Clark, a bioacoustic engineer at Cornell University, has developed a moving visualization of what he calls noise smog created by whale watching boats in Puget Sound."
www.king5.com/tech/science/environment/animation-shows-boats-make-acoustic-hell-for-orcas/427013849

A Record number of West Coast Whales are Getting Caught in Crab Gear
"Federal authorities are reporting a record number of whales getting tangled in crabbing gear off the West Coast. The Center for Biological Diversity environmental group announced the development Wednesday, citing new figures from the National Marine Fisheries Service."
www.latimes.com/local/lanow/la-me-ln-whales-crabbing-gear-20170329-story.html

The Wrong Whale In All The Right Ways
"The slaughter of whales in the North Pacific in the 1800s was unprecedented in human history. Whalers targeted humpback, minke, fin, and blue whales for their profitable blubber and baleen, but new research suggests that they left one species unscathed. In the recently released book The Wrong Side of History, College of the Northeast Pacific biologist Kim di Georgio introduces the little-known North Pacific wrong whale and details how at least 50,000 of them escaped exploitation."
www.hakaimagazine.com/article-short/wrong-whale-all-right-ways

Bacteria That Cause Human Diseases Found in Orca Blowholes
"Scientists have found yet another way human beings may be hurting killer whales: Infectious diseases spilling into marine waters from land are showing up in their breath."
http://news.nationalgeographic.com/2017/03/human-diseases-pacific-orcas-killer-whales-salmonella

Feds Remove Type of Rockfish from Endangered List
"Federal biologists have removed a species of Puget Sound rockfish from the endangered species list. NOAA Fisheries said Monday that last week's decision comes after a recent study found Puget Sound/Georgia Basin canary rockfish are not genetically different from other canary rockfish found along the West Coast."
www.spokesman.com/stories/2017/mar/27/feds-remove-type-of-rockfish-from-endangered-list/

Olympic Coast National Marine Sanctuary Appoints New Members to Advisory Council
"The Olympic Coast National Marine Sanctuary has announced two new members and two returning members to serve on its sanctuary advisory council."
www.peninsuladailynews.com/news/olympic-coast-national-marine-sanctuary-appoints-new-members-to-advisory-council/

Water Matters: Wall of Science
"Science Rising will be free and open to the public, held April 22 on the Port Angeles City Pier, with demonstrations and more than 25 educational booths from noon-4 p.m. Nine short presentations on locally relevant science will be presented in the conference room of The Landing Mall (second floor), next door to the Pier, between 10 a.m.-3:30 p.m. and the adjacent OCNMS 'Discovery Room' will be open for visitors."
http://www.sequimgazette.com/opinion/water-matters-wall-of-science/

More Invasive Green Crabs Found on Dungeness Spit
"Washington Sea Grant's Crab Team has captured seven more green crabs on the Dungeness Spit since 13 of the invasive European green crabs were found there last week."
www.peninsuladailynews.com/news/more-invasive-green-crabs-found-on-dungeness-spit/

Former Gov. Mike Lowry Dies at Age 78
"Former Washington Gov. Mike Lowry, 78, who also served as a King County Council member, died on Monday from complications of a stroke."
www.tukwilareporter.com/news/former-gov-mike-lowry-dies-at-age-78/

Drawing Meaning from Death, One Seabird at a Time
"Coleman Byrnes leads our small team of four through the rainforest of Olympic National Park in Washington State. Where the trail turns muddy, we find a drier alternate route above a border of sword ferns and take special care crossing the slippery boardwalks and prostrate logs. The late-morning sun filters through the canopy, melting some patches of ice and leaving others to crunch under our boots. The forest answers back with the trilling staccato of a tiny Pacific wren."
www.hakaimagazine.com/article-long/drawing-meaning-death-one-seabird-time

30 Years After 'Salmonscam': Remembering a Leader in the Fishing-Rights Struggle
"At noon, on the highest hill in Toppenish Creek Cemetery above White Swan in Yakima County, three of the principals in 'Salmonscam' have come to pay their respects to David Sohappy Sr. on the 30th anniversary of their appearance in Yakama Tribal Court."
www.seattletimes.com/seattle-news/30-years-after-salmonscam-remembering-a-leader-in-the-fishing-rights-struggle/

Coastal Razor Clam Digging Season Ends After Marine Toxin Levels Increase
"The 2016-17 coastal razor clam has come to an end after testing for marine toxins showed they had increased beyond the action level at Mocrocks Beach.Test results on razor clams gathered from Long Beach and Twin Harbors last week found domoic acid levels had exceeded the 20 parts per million action level set by state Department of Health, but Mocrocks was still under the cutoff."
www.seattletimes.com/sports/coastal-razor-clam-digging-season-ends-after-marine-toxin-levels-increase/

Volunteers Clean Beaches of About 15 Tons of Debris During Annual Cleanup
"The results are in after 1,330 volunteers cleaned debris from more than 60 Washington beaches during the 10th annual Washington Coast Cleanup. Jon Schmidt, Washington CoastSavers coordinator, estimated that volunteers hauled away about 15 tons of garbage during the cleanup of beaches on the Pacific Coast from the Columbia River to Cape Flattery and on the Strait of Juan de Fuca from Cape Flattery to Port Townsend."
www.peninsuladailynews.com/news/volunteers-clean-beaches-of-about-15-tons-of-debris-during-annual-cleanup/

Oceans Losing Oxygen as World Warms
"To the list of global problems the world's oceans are facing, you can add another: They're losing oxygen. The Pacific Ocean off the U.S. West Coast, from central California to Alaska, is one of the hardest-hit areas."
http://kuow.org/post/oceans-losing-oxygen-world-warms

'The Blob' Blamed for Bringing Invasive Crab to Puget Sound
"Scientists think they know what brought invasive green crab into Washington's inland waters last year. In short: 'the blob.' That was the temporary expanse of abnormally warm water off the West Coast from 2013 to late 2015."
http://kuow.org/post/blob-blamed-bringing-invasive-crab-puget-sound

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 Ocean Service
http://oceanservice.noaa.gov/

Office of National Marine Sanctuaries
http://sanctuaries.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/

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 13 national marine sanctuaries and 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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