



OLYMPIC COAST NATIONAL MARINE SANCTUARY

A Report for Sanctuary Advisory Council Members Reporting Period: September 16 – December 8, 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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TREATY TRUST RESPONSIBILITIES

Olympic Coast Sanctuary brings tribal perspectives to E/V *Nautilus* expedition

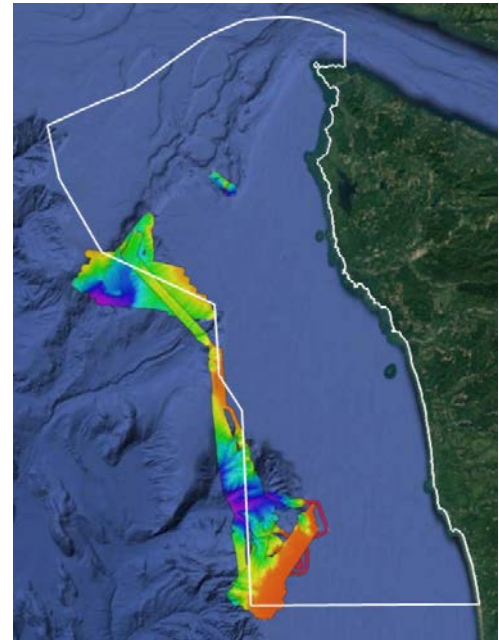
When Olympic Coast National Marine Sanctuary was designated in 1994, it was established to be compatible with the interests of—and supported by—four coastal treaty tribes that have lived along this coast for thousands of years: the Makah, Quileute, and Hoh tribes, and the Quinault Indian Nation. Staff at Olympic Coast National Marine Sanctuary (OCNMS) work to study and co-manage sanctuary resources in close cooperation with tribal partners, who have reserved treaty rights to fish and harvest marine resources of all types within legally-defined “usual and accustomed” fishing areas that overlap much of OCNMS.

In one recent example of collaborative research, Quinault Indian Nation (QIN) staff team up with OCNMS and NOAA’s Northwest Fisheries Science Center to conduct a 16-day research expedition on the E/V *Nautilus* that wrapped up on Labor Day. The ship is an exploration vessel operated by Ocean Exploration Trust equipped with sophisticated ‘telepresence’ capability that broadcasts high definition video from underwater robots at the bottom of the sea to viewers throughout the world via the Internet. Telepresence also allows scientists on board to narrate during the broadcast, bringing scientific expertise and interpretation opportunities to the public as the live research expedition unfolds.

Because tribal co-management is a unique feature of Olympic Coast, we wanted to bring tribal perspectives to our viewers around the world as a priority of the expedition. Thanks to participation of Dr. Valerie Grussing, Cultural Heritage Coordinator for NOAA’s Marine Protected Areas Center and Dr. Melissa Poe, a social scientist at Washington Sea Grant/NOAA Fisheries, the tribes had trusted voices to help elevate awareness of their culture and history during the broadcasts. Both social scientists were able to enhance the viewer experience by sharing tribal messages and stories, many of which had been curated in advance by tribal partners from the Quinault Indian Nation and the Northwest Indian Fisheries Commission.

The ship-based tribal perspective was included in ship-to-shore events that connected scientists aboard the ship with the public for Q&A sessions. Libraries in communities adjacent to Olympic Coast National Marine Sanctuary, including Clallam Bay, Forks and Port Angeles, hosted live-stream interactive opportunities and special 'ship to shore events' to connect the public with the ship's mission. Q&A events were also held at the QIN tribal school in Taholah, WA and at Grays Harbor College in Aberdeen, WA. Quinault President Fawn Sharp highlighted the expedition on her radio program, and her staff worked with OCNMS to respond to media requests.

Joe Schumacker, of QIN's Department of Fisheries, underscored the importance of NOAA's efforts to incorporate tribal perspectives in research and outreach efforts, and summarized the effort by saying "the single biggest message we can get out to folks on the ship and around the world is that in this one place, the coast of Washington, indigenous peoples are not only stewards, they are co-managers with legal rights to the fishery resources that exist or pass through that ocean area. Those rights are "place-based" they exist only in those treaty areas, requiring the Tribes to use best available science combined with their traditional knowledge to maintain those resources in perpetuity... for all generations to come."



Many involved with the expedition, as well as a number of viewers, responded positively to the additional context Drs. Valerie Grussing and Melissa Poe provided during the narration. OCNMS is pleased to support the inclusion of the perspectives of Washington State's coastal treaty tribes in an effort to promote understanding of the critical importance of local marine resources to the peoples of the Olympic Coast. For more information contact Jenny.Waddell@noaa.gov.

Nickelodeon's Get Dirty Grant finds student ambassadors in Quileute Tribal School students.



As part of a National Environmental Education Foundation (NEEF) grant program with Nickelodeon, the Quileute Tribal School (QTS) in La Push, WA, was one of two national recipients to have their proposals successfully funded for the "Get Dirty for the Environment" grant opportunity. The funds will support students conducting projects in their adjacent Hands on the Land (HOL) site to better understand and protect the environment. For the Get Dirty project, QTS student ambassadors will be focusing on their efforts in the Ocean Acidification (OA) pHyter-plankton monitoring project. On Wednesday October 25, 2017 NEEF and QTS held a Get Dirty kick-off event, introducing the five student ambassadors and their partners at Olympic Coast National Marine Sanctuary to 50 community members. The kick-off event included traditional drumming and dancing as well as inspirational messages from QTS school board, Tribal elders, sanctuary staff, and NEEF

representatives. The pilot OA pHyter-plankton monitoring project, funded by NOAA OA Program, will be conducted through the 2017-18 school year, with the Get Dirty grant wrapping up in December of 2017. For more information contact Nicole.Harris@noaa.gov

IMPROVE OCEAN LITERACY

Olympic Coast National Marine Sanctuary welcomes Washington Service Corps AmeriCorps members

Olympic Coast National Marine Sanctuary (OCNMS) welcomes two Washington Service Corps AmeriCorps members, Kathleen McKeegan and Christine VanDeen. Kathleen and Christine will be with OCNMS until July 31, 2018, serving as Environmental Education and Stewardship Specialists.

Kathleen recently obtained her Bachelor of Arts degree in Biology with a minor in Theatre from Whitman College. She will support K-12 educational programs, including Ocean Science, Sanctuary Splash (Big Mama humpback whale), and the new Ocean Acidification “pHyter” – Plankton Monitoring Program.



Christine recently obtained her Bachelor of Science degree in Marine Science, and a minor in Biology from Coastal Carolina University. She will also support K-12 educational programs, including North Olympic Watershed (N.O.W.) Science Program in partnership with Feiro Marine Life Center, and Sanctuary Splash.

Both Kathleen and Christine will also promote Olympic Coast beach cleanups and stewardship activities in partnership with Washington CoastSavers Program. For more information contact: Jacqueline.Laverdure@noaa.gov or Nicole.Harris@noaa.gov.

Ocean Guardian School celebrates new award with Big Mama



Crescent School, located in Joyce, WA, provided a presentation to students in grades Kindergarten to five announcing their third year in the [Ocean Guardian School Program](#). As recognition of the school’s successful involvement in the program, students had the opportunity to explore a life-sized walk-inside model of "Big Mama" the humpback whale while participating in hands-on activities focused on ocean science and stewardship, supported by Olympic Coast National Marine Sanctuary and Pacific Northwest B-WET. An Ocean Guardian School makes a commitment to the protection and conservation of its local watersheds, the world’s ocean, and special ocean areas, like national marine sanctuaries. The school makes this commitment by proposing and then,

implementing a school- or community-based conservation project. For more information contact Jacqueline.Laverdure@noaa.gov or Nicole.Harris@noaa.gov

Ocean acidification pHyters fueled by plankton power

On September 22-23, 2017, Olympic Coast National Marine Sanctuary (OCNMS) partnered with Monterey Bay National Marine Sanctuary (MBNMS) and Northwest Fisheries Science Center (NWFS) to conduct an Ocean Acidification (OA) pHyter-Plankton Teacher Workshop in Forks, WA. The workshop introduced a pilot OA curriculum using plankton science as the catalyst to explore OA and its impacts on ocean resources. Over the two days teachers researched and presented on National Marine Sanctuaries, increased their understanding of ocean acidification and plankton, and put plankton monitoring and pHyter protocols to practice in the field at First Beach on the Quileute Reservation and the sanctuary.



Using the MBNMS Plankton Science Monitoring Program protocol and the newly developed and still in beta phase pHyter (a hand-held chemical indicator-based spectrophotometric field-based pH measuring instrument), participating teachers will be piloting the curriculum through collection of geospatial plankton and pH data over time leading to data driven student action projects. The curriculum and workshop are activities funded by a NOAA Ocean Acidification Program mini-grant, supporting expansion and testing of the pHyter instrument capabilities, increasing accessibility of pH data worldwide while increasing availability of affordable, easy-to-use and broadly accessible pH monitoring tools for citizen science and education programs. The project is part of the National Marine Sanctuaries of the West Coast Region OA education and outreach effort to develop OA monitoring tools and education curriculum to increase public understanding of the process of OA and impacts of a more acidic environment to valuable ocean ecosystems. For more information contact Nicole.Harris@noaa.gov or Jacqueline.Laverdure@noaa.gov.



Students dive into Olympic Coast National Marine Sanctuary intertidal diversity at Dungeness River Festival

Olympic Coast National Marine Sanctuary (OCNMS) education team provided intertidal diversity education to 1000 students at Dungeness River Festival on September 29, 2017 in Sequim WA, hosted by Dungeness River Audubon Center. Sequim 2nd through 6th grade students flooded the one-day festival learning about conservation efforts protecting Dungeness

watershed and our one ocean. OCNMS provided the opportunity to investigate the diversity of our rocky intertidal habitat and the adaptations that allow organisms to thrive in specific intertidal zones. OCNMS was one of 20 organizations providing information on environmental education and the interconnectedness of healthy watersheds, healthy ocean and healthy humans. For more information contact Nicole.Harris@noaa.gov, Kathleen.McKeegan@noaa.gov or Christine.VanDeen@noaa.gov.



NatureBridge Olympic hosts Olympic Coast National Marine Sanctuary for marine debris education

Olympic Coast National Marine Sanctuary education staff brought marine debris education to 76 eighth grade students from Seattle, as part of a week-long environmental education program with NatureBridge Olympic. Investigating marine debris and our ocean's health through Albatross bolus dissection, participating students learned about the National Marine Sanctuary System, the rich waters of Olympic Coast and the majestic Albatross that is disproportionately impacted by marine debris ingestion. Following a bolus dissection and summary of natural and non-natural (primarily plastic) prey items, students focused on personal and community actions that can reduce marine debris in order to support a healthy ocean for Albatross and humans. For more information contact Kathleen.McKeegan@noaa.gov and Christine.VanDeen@noaa.gov.

Family Discover Science Weekend draws thousands interested in ocean conservation and marine science to Seattle Aquarium

Olympic Coast National Marine Sanctuary (OCNMS) education team AmeriCorps Service Corps members hosted an education booth as part of the annual Family Discover Science Weekend at Seattle Aquarium November 9th-11th. NOAA educators and scientists, local meteorologists, and aquarium researchers offered families an opportunity to discover science together through exciting interactive experiments and presentations. Over 9,000 visitors took advantage of the education and information provided over the weekend. OCNMS conducted outreach on the albatross and marine debris, with Kids and parents alike able to "dissect" and investigate albatross boluses while discussing ocean health, the global marine debris problem, and actions we can take to mitigate our plastic pollution. For more information contact Kathleen.McKeegan@noaa.gov and Christine.VanDeen@noaa.gov.



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

Olympic Coast concludes 17th year of coastal oceanographic mooring program

On September 29th, staff from Olympic Coast National Marine Sanctuary (OCNMS) successfully recovered the final two moorings from Makah Bay, ending the 2017 deployment season and marking completion of the 17th year of the sanctuary's long term coastal oceanographic mooring program. OCNMS mooring program presently encompasses ten moorings placed in shallow (15m) and deeper (42m) waters at five locations extending from Cape Elizabeth in the south to Makah Bay in the north. Instruments deployed on the moorings provide critical nearshore environmental data to a variety of purposes, including regional forecast models of ocean acidification (OA), analysis of sea surface temperature variability, and monitoring of hypoxic (low-oxygen) conditions along the Olympic Coast. Thanks to funding from NOAA's Ocean Acidification Program, the data will also contribute to a new regional data synthesis effort led by the University of Washington and Washington Sea Grant that will serve as the foundation for a regional socio-ecological vulnerability assessment to OA for the four Coastal Treaty Tribes living on the Olympic Coast. This season also marked the start of a new partnership with Sea-Bird Electronics, the company that manufactured many of the instruments used in the mooring program, in an effort to engage volunteers from the company in the 'real-world' applications of their environmental sensors while helping OCNMS staff to service and redeploy the moorings at five week intervals between early May to the end of September. For more information contact Jenny.Waddell@noaa.gov.

CONSERVE NATURAL RESOURCES IN THE SANCTUARY

More than 650 Washington CoastSavers volunteers clean beaches during International Coastal Cleanup!



Sunny skies attracted hundreds of volunteers for International Coastal Cleanup on September 16, 2017. More than 650 volunteers participated in the cleanup on beaches from Columbia River to Cape Flattery and along the Strait of Juan de Fuca. Olympic Coast National Marine Sanctuary (OCNMS) staff and Washington Service Corps AmeriCorps members organized volunteers at Neah Bay registration station and coordinated cleanups at Hobuck, Shi Shi and Tsoo-Yess beaches. OCNMS is a founding member of Washington CoastSavers, and contributes significantly to the organization's long range planning, funding and event coordination. For more information contact Nicole.Harris@noaa.gov.

Sanctuary briefed on Cruise Ship Environmental Systems

Olympic Coast National Marine Sanctuary staff were invited to tour Holland America's MV *Seabourn Sojourn*, while docked in Seattle. Sanctuary regulations prohibit the discharges from cruise ships while in the sanctuary. Holland America's Director of Environmental Services, the vessels Environmental Officer and Washington Department of Ecology staff discussed and toured the MV *Seabourn Sojourn's* environmental systems including oily bilge and wastewater treatment systems. Voyage planning, sanctuary regulations and the Area to be Avoided (ATBA) were also discussed. For more information contact george.galasso@noaa.gov



NOAA Ship *Rainier* completes significant mapping of offshore priority areas in Washington State



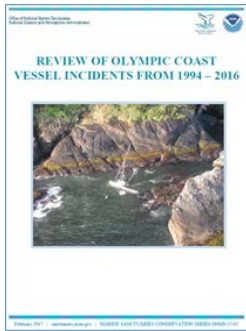
From September 10-22, the NOAA Ship *Rainier* traversed the Washington outer coast, collecting seafloor bathymetry, backscatter, and water column data within high priority offshore mapping areas that were identified in a May 2015 multi-agency spatial prioritization workshop led by the National Centers for Coastal Ocean Science. While much of the data collection for this Integrated Ocean and Coastal Mapping (IOCM) project focused on areas within Olympic Coast National Marine Sanctuary, the project scope also included an important area south of the sanctuary in Glide Canyon off Willapa Bay, WA. Though the 10-day mission was impacted by poor weather and the last minute cancellation of the chief scientist (due to Hurricane Irma), the

Rainier team stepped up and successfully achieved the majority of the mission with the *Rainier's* commanding officer, CDR Ben Evans, serving as chief scientist. The team went 'above and beyond' by hand-delivering the new data to Olympic Coast National Marine Sanctuary's research coordinator within days of completing the mission. For more information, contact Jenny.Waddell@noaa.gov.

UNDERSTANDING THE SANCTUARY'S CULTURAL, HISTORICAL AND SOCIOECONOMIC SIGNIFICANCE

Maritime Heritage Program meets at Thunder Bay National Marine Sanctuary

Olympic Coast staff participated in a meeting of the Office of National Marine Sanctuaries Maritime Heritage Program (MHP) to discuss to the future of the MHP. These recommendations will: 1) establish priorities for the implementation of the ONMS Strategic Plan elements relevant to maritime cultural heritage preservation throughout the NMS System over the next five years; 2) address the organization of the MHP, both at headquarters and throughout the system; and 3) identify opportunities for building staff capacity and securing needed resources through partnerships to expand the reach of the MHP. For more information contact george.galasso@noaa.gov.



Advisory Council makes recommendations on Vessel Incidents

In March 2017, Olympic Coast National Marine Sanctuary Advisory Council created a Vessel Incident Working Group (VIWG) to review the circumstances of 46 vessels lost in the sanctuary from 1994 through 2016. The VIWG was created following a presentation from sanctuary staff on a [report](#) documenting vessels lost in the sanctuary. The VIWG met five times between May and August, finalizing a report with nine recommendations, which was presented at the Advisory Council meeting in September. The AC accepted the VIWG's recommendations by consensus and forwarded them to the Sanctuary Superintendent for her consideration. For more information contact george.galasso@noaa.gov.

Olympic Coast Sanctuary participates in Dungeness Crab and Seafood Festival

Olympic Coast National Marine Sanctuary was part of the 16th annual Dungeness Crab and Seafood Festival in Port Angeles on Oct. 6-8 (www.crabfestival.org). Sanctuary staff, Washington Service Corps AmeriCorps members and volunteers hosted an educational booth including sanctuary information, hands-on activities on ocean acidification effects and easy to implement actions for reducing carbon footprints. With their dinners, crab lovers also received the new Dungeness Crab Ocean Acidification placemat, developed in partnership with Olympic Culinary Loop, Port of Port Angeles, The Dungeness Crab & Seafood Festival, The Nature Conservancy and Olympic Coast National Marine Sanctuary. The event drew between 15,000 - 20,000 people from the area as well as other parts of the U.S. and Canada. For more information contact Chris.ButlerMinor@noaa.gov or Nicole.Harris@noaa.gov.



National Marine Sanctuary Foundation Visits Olympic Coast

The National Marine Sanctuary Foundation staff and Board Trustees visited Olympic Coast National Marine Sanctuary following their board meeting in Seattle, WA; learning about the sanctuary, its key issues and the recent developments regarding the startup of a NMSF chapter, the Olympic Coast National Marine Sanctuary Foundation. They also toured the proposed site of a new Marine Discovery Center in downtown Port Angeles, as the flagship project of the newly created Olympic Coast National Marine Sanctuary Foundation, and met with project partners including Feiro Marine Life Center and the Port Angeles Waterfront Center. Following those meetings, they spent two stormy days visiting coastal communities including LA Push and Neah Bay while experiencing the power and majesty of this spectacular area. For more information, contact Carol.Bernthal@noaa.gov.



Olympic Coast featured as a premier destination at tourism summit

Olympic Coast National Marine Sanctuary was featured as a premier destination at Olympic Peninsula Tourism Summit. Over 150 participants spent two days of workshops and sharing to promote visitation and to discuss ways to collaboratively enhance the visitor experience on Olympic Peninsula. Olympic Coast National Marine Sanctuary Foundation hosted an evening event showcasing Olympic Coast National Marine Sanctuary. Sanctuary Superintendent Carol Bernthal spoke to the assembly about ways the sanctuary could partner with organizations to provide outreach tools and promote events, as well as opportunities for voluntourism. Attendees also had the opportunity to walk inside "Big Mama" a life-sized humpback whale display, and explore the sanctuary with Olympic [Coast's new 360 virtual dives experience](#).



Guests also received a commemorative [Sue Coccia Earth Art International](#) pin for the newly founded Olympic Coast National Marine Sanctuary Foundation. For more information contact Chris.ButlerMinor@noaa.gov or Jacqueline.Laverdure@noaa.gov.

Sanctuary Permitting

Issued Permits and Authorizations

OCNMS-2014-001 LOA– Sanctuary Superintendent Permit Letter of Authorization to Ocean Exploration Trust

Project Title: Olympic Coast Canyon and Ocean Acidification Cruise

Permitted Activity: Deployments of remotely operated vehicles (ROVs), autonomous underwater vehicle (AUV), discharge of expendable bathythermographs (XBTs), collections of benthic biota and geological samples.

Project Location: Quinault, Quileute, Juan de Fuca Canyons, and USS *Bugara* site

LOA Duration: 2017 field season

Comment: Letters of Authorization to conduct activities under the Sanctuary Superintendent Permit are used for activities conducted by sanctuary staff, either independently or in close cooperation with partners.

OCNMS-2017-007 – UC San Diego

Project Title: Determining gut microbial community composition in marine grazers along a latitudinal gradient

Permitted Activity: To disturb the seabed in order to collect common intertidal gastropods and bivalves from two (2) different sites in OCNMS.

Project Location: Chilean Memorial, near Rialto Beach, Olympic National Park and Point Grenville, Quinault Nation

Permit Duration: For the 2017 field season.

Comment: This project is designed to quantify responses of intertidal mollusks to anthropogenic ocean acidification.

OCNMS-2017-008 – Ocean Outreach, Inc.

Project Title: USS *Bugara* Investigation

Permitted Activity: Incidental seafloor disturbance from a remotely operated vehicle (ROV)

Project Location: USS *Bugara* wreck site, off Cape Flattery

Permit Duration: The 2017 field season.

Comment: This is the second planned mission to the USS *Bugara* in 2017; while similar, each mission will contribute in unique ways to the understanding and management of this important maritime heritage resource.

OCNMS-2017-009 – Brad Hanson - National Marine Fisheries Service

Project Title: Determining the distribution of killer whales and other cetaceans in the coastal waters of the U.S. using acoustic recorders

Permitted Activity: Deployment of 3 acoustic moorings to determine the movements and occurrence of cetaceans, particularly southern resident killer whales, off the outer Washington coast.

Project Location: 48 28.59 124 40.48; 48 09.99 125 37.14; 47 52.82 124 40.86

Permit Duration: 9/15/2017 through 12/31/2019

Comment: This is a continuation of work that has been ongoing since 2012. The use of non-recoverable anchors was reviewed and allowed.

OCNMS-2017-011 – Daniel T Stabbert - Pacific Survey Group, LLC

Project Title: AUV and ROV Operational Tests within the Olympic Coast National Marine Sanctuary

Permitted Activity: The deployment and testing of an autonomous underwater vehicle (AUV) and a remotely operated underwater vehicle (ROV) within OCNMS, off Cape Flattery, and within the Juan de Fuca canyon.

Project Location: Within the boundaries of OCNMS, north of latitude 48°.

Permit Duration: 11/30/2017 through 12/20/2017

Comment: The sanctuary has provided targets that will assist the permittee in accessing their technology, as well as being of interest to the sanctuary.

Pending Permit Requests

There are no permits currently in process.

LEARN ABOUT YOUR SANCTUARY / NATURAL HISTORY

OCNMS welcomes an abundance of whales

Over the past month or so, visitors to Olympic Coast National Marine Sanctuary have been delighted to see high densities of large whales in coastal areas of the sanctuary. From aggregations of gray whales seen feeding along

southern shorelines within OCNMS near Kalaloch, to the robust parade of humpback whales that passed through coastal areas in northern OCNMS during August, to reports of significant whale activity at Swiftsure Bank, abundant populations of whales have been sighted along the Olympic Coast this summer. Viewers aboard a 16-day research expedition on the E/V *Nautilus* enjoyed many sightings and shared their experiences through social media. Photos of the animals will be sent to local experts in an effort to identify individual whales that are known to return to our shores each year and note their progress. For more information, please contact Jenny.Waddell@noaa.gov.

REGIONAL / NATIONAL MARINE SANCTUARY SYSTEM NEWS

Celebrating 45 years of American's Underwater Parks

<https://sanctuaries.noaa.gov/news/oct17/celebrating-45-yrs-of-americas-underwater-parks.html>

Forty-five years ago, Congress passed legislation establishing the National Marine Sanctuary Program. Today, NOAA's Office of National Marine Sanctuaries serves as the trustee for a network of underwater parks encompassing more than 600,000 square miles of marine and Great Lakes waters. The sanctuary system works collaboratively with diverse partners and stakeholders to promote responsible, sustainable ocean uses that ensure the health of our most valued marine ecosystems and drive coastal economies.

Finding history: The discovery of two lost shipwrecks in Thunder Bay National Marine Sanctuary

<https://sanctuaries.noaa.gov/news/nov17/finding-history-two-lost-wrecks-discovered-in-thunder-bay-national-marine-sanctuary.html>

Beneath the waves of Thunder Bay National Marine Sanctuary lies an underwater museum. In this section of Lake Huron, nestled up against the shores of northeastern Michigan, are nearly 100 known shipwrecks. These shipwrecks tell the story of the Great Lakes' maritime history – and this summer, sanctuary researchers found two more.

OAA's Office of National Marine Sanctuaries and Liquid Robotics Collaborate to Protect Vulnerable Marine Sanctuaries and Ecosystems

<https://www.econotimes.com/NOAAs-Office-of-National-Marine-Sanctuaries-and-Liquid-Robotics-Collaborate-to-Protect-Vulnerable-Marine-Sanctuaries-and-Ecosystems-954411> .

Liquid Robotics and NOAA's Office of National Marine Sanctuaries (ONMS) Pacific Islands Region (PIR) announced a multi-year agreement to develop solutions to help protect and preserve the Hawaiian and American Samoa marine sanctuaries and monuments. Liquid Robotics' Wave Glider, an autonomous surface ocean robot, will be the core technology to conduct long-term environmental monitoring and surveillance of the Pacific's most diverse and endangered underwater ecosystems. This partnership will help address the critical long-term monitoring and scientific data collection gaps that are not economically feasible with traditional research assets.

Call of the wild: Foster Scholar Samara Haver studies sound across sanctuaries

<https://sanctuaries.noaa.gov/news/oct17/call-of-the-wild-foster-scholar-samara-haver-studies-sound.html>

The sounds of the ocean are an odd combination of haunting and soothing. From the crash of waves on the beach to the echo of whale songs, it's tempting to believe putting a shell up to your ear will allow you to access the underwater soundscape whenever you need an escape. Unfortunately it doesn't work that way. But Samara Haver has the next best thing: underwater sound recordings of national marine sanctuaries and national parks

IMPAC4 celebrates marine protected areas and communities

<https://sanctuaries.noaa.gov/news/oct17/impac4-celebrates-marine-protected-areas-and-communities.html>

Twenty years ago, a conference of protected area managers would have focused almost entirely on the health of species and ecosystems in these ocean parks. Today, common sense and social science have both taught us that the well-being of protected areas and local communities and cultures are intertwined.

NOAA Seeks Comments: Proposed Changes in GFNMS and Cordell Bank National Marine Sanctuary (CBNMS) Regulations for Certain U.S. Coast Guard Discharges

<https://farallones.noaa.gov/manage/regulations.html>

NOAA is soliciting public comment on a proposed rule and an associated draft environmental assessment that considers allowing the U.S. Coast Guard (USCG) to carry out otherwise prohibited vessel sewage, graywater and training-related discharges, seaward of approximately 3 nautical miles from shore, within the areas added to Greater Farallones and Cordell Bank national marine sanctuaries' boundaries when they expanded in 2015. NOAA is proposing exceptions to the discharge prohibitions in order to address USCG concerns that the expansion of GFNMS and CBNMS, with the resulting larger sizes of the sanctuaries and extension of the discharge prohibitions to the expanded portions of the sanctuaries, would make it

difficult for the USCG to both fulfill its missions and comply with the discharge prohibitions in the expansion areas. Read the Superintendents' statement and the Section 106 Review on this proposed action.

NOAA is accepting comments on the draft EA and proposed rule through January 16, 2018, via: the Federal e-Rulemaking Portal; mail sent to Maria Brown, Superintendent, Greater Farallones National Marine Sanctuary, 991 Marine Drive, The Presidio, San Francisco, CA 94129; and at public hearings [from 6-8 p.m.] on December 5, 2017 at the Bay Model (Sausalito) and December 13, 2017 at the Gualala Community Center (Gualala).

A shared sense of place: Celebrating Native American Heritage Month in sanctuaries

<https://sanctuaries.noaa.gov/news/nov17/celebrating-native-american-heritage-month-in-sanctuaries.html>

In a 1985 column for the New York Times, indigenous author Louise Erdrich asks “[I]f not a shared sense of place, what is it then that currently provides a cultural identity?” She was speaking of our feelings about and attraction to specific landscapes and geographies. For Native Americans, including coastal and island people, this sense of place is not just historical but cultural and spiritual as well, and current generations feel deeply linked to those who came before and those who will follow. As expressed by the Quinault Indian Nation from the Olympic Peninsula: “We are among the small number of Americans who can walk the same beaches, paddle the same waters, and hunt the same lands our ancestors did centuries ago.”

Volunteers remove more than two tons of debris and lost fishing gear in Channel Islands beach cleanups

<https://sanctuaries.noaa.gov/news/sep17/volunteers-remove-two-tons-of-debris-from-channel-islands.html>

Over two tons of debris (approximately the weight of a car) has been successfully removed from the shores of Channel Islands National Marine Sanctuary and National Park over the past six months through a unique partnership between the sanctuary, local commercial lobster fishermen, and National Park Service concessionaires.

The Art of Playing Well: Celebrating National Hispanic Heritage Month in Sanctuaries

<https://sanctuaries.noaa.gov/news/sep17/celebrating-national-hispanic-heritage-month-in-sanctuaries.html>

There, off to the right! A dozen hands point starboard, where humpback whales, summering in Stellwagen Bank National Marine Sanctuary, are breaking the surface and sending up sprays of mist. On board the whalewatching boat, a hundred students from Lawrence, Massachusetts elementary schools, are enjoying a cruise on a bright July afternoon. For many of them, it is their first time seeing whales or even being on the ocean. Hopefully, these young people will visit again.

A Greater Gray: Students investigate ecological connectivity in national marine sanctuaries

<https://sanctuaries.noaa.gov/news/sep17/a-greater-gray-students-investigate-ecological-connectivity-in-sanctuaries.html>

Like us, marine species need insurance policies. Identifying areas of ecological connectivity and creating a network of properly placed marine protected areas can provide this insurance. To identify areas ecologically connected to Gray's Reef National Marine Sanctuary, and therefore important for conserving pressured species, NOAA's Office of National Marine Sanctuaries proposed an ecological connectivity assessment as a master's thesis group project to the Bren School of Environmental Science & Management's class of 2017. To help support effective marine protected areas, we – four students in the Bren School's class of 2017 – worked with Gray's Reef National Marine Sanctuary to understand how fish species at the sanctuary are connected regionally and how these connections can inform management decisions.

Brightwork: The future of the sanctuary system

<https://sanctuaries.noaa.gov/news/oct17/brightwork-the-future-of-the-sanctuary-system.html>

In nautical terms, brightwork is the upkeep of the metal and sometimes wood parts of a boat and is synonymous with demanding labor. The only certain thing about the future of the National Marine Sanctuary System is that it will require the same hard work and dedication that have built the system so far. In the next five years we'll be engaging experts and big thinkers both inside and outside of the ocean community to help us contemplate what the sanctuary system must do and be as it approaches its blue centennial in 2072.

Announcing the 2017 Sea to Shining Sea Award winner

<https://sanctuaries.noaa.gov/news/dec17/announcing-the-2017-sea-to-shining-sea-winner.html>

For five years, NOAA's Office of National Marine Sanctuaries has recognized outstanding achievement in the fields of interpretation and environmental education by presenting the Sea to Shining Sea Award for Excellence in Interpretation and Education to employees, contractors, and volunteers. The award recognizes demonstrated successes in advancing ocean and climate literacy and conservation through national marine sanctuaries. It also recognizes awardees' innovation and creative solutions for successfully enhancing the public's understanding of the National Marine Sanctuary System. This year, the award is presented to **Michelle Riley** for *Georgia Public Broadcasting Live Exploration of Gray's Reef*.

National Marine Sanctuaries Virtual Dives

<https://sanctuaries.noaa.gov/vr/>

Immerse yourself in the ocean and your national marine sanctuaries without getting wet! These virtual reality voyages use 360-degree images to highlight the amazing habitats, animals, and cultural resources you can find in each national marine sanctuary.

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/>

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 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>.

OCNMS Staff

Carol Bernthal – Superintendent

George Galasso – Deputy Superintendent for Policy & Programs

Kevin Grant – Deputy Superintendent for Operations & Administration

Chris Butler-Minor – Community Engagement Specialist

Eric Evans – IT Consultant

Carey Floyd – Graphic and Web Designer

Alisha Friel – NOAA Corps Officer, Vessel Operations Coordinator

Nicole Harris – Education Specialist

Kathy Hough – Survey Technician

Norma Klein – Office Administrator

Jacqueline Laverdure – Education and Outreach Coordinator

Robert Rountree – Visitor Services Specialist

Jenny Waddell – Research Coordinator

Contact Information

Olympic Coast National Marine Sanctuary

115 East Railroad Ave., Suite 301
Port Angeles, WA 98362
Phone (360) 406-2074
Fax (360) 457-8496

