

OLYMPIC COAST NATIONAL MARINE SANCTUARY

A Report for Sanctuary Advisory Council Members Reporting Period: JUNE 30, 2018 – SEPT 7, 2018

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.

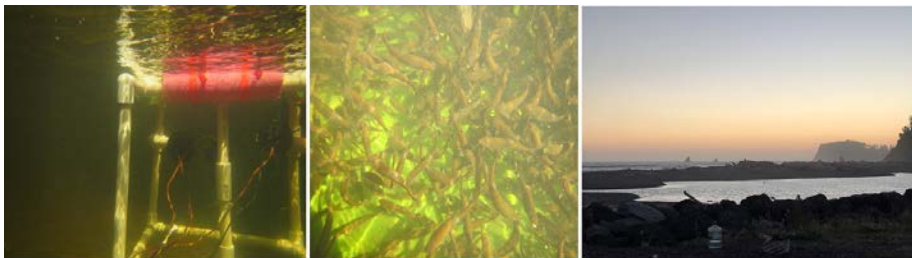
Table of Contents

	Page
Treaty Trust Responsibilities.....	1
Ocean Literacy.....	2
Collaborative Research, Assessments, & Monitoring.....	6
Conserve Natural Resources.....	7
Cultural, Historical, and Socioeconomic.....	9
Permitting.....	11
Natural History.....	13
Regional/ National News.....	13
Foundation News.....	13

TREATY TRUST RESPONSIBILITIES

Chalá·at: People of the Hoh River watershed camp

Olympic Coast National Marine Sanctuary (OCNMS) education staff, in partnership with Hoh Tribe Natural Resources staff and Hoh Tribe Youth Support Services, conducted the 4th annual Hoh River Watershed Adventure for 20 Hoh Tribal members and two staff. This year, the two-day camp commenced at Hoh Tribe Fish Hatchery, and explored the usual and accustomed areas (U&A) of the Hoh people along



the waters of Olympic Coast. The camp was focused on connecting Hoh Tribal participants with their culture, treaty rights, traditional resources, and harvesting, as well as climate change and its effects on their resource sustainability.



Youth participants spent the first day building and flying remotely operated vehicles (ROV) in hatchery holding tanks. Following ROVs, participants learned about their

hatchery, feeding the fish, and discussing goals with hatchery staff. Hoh Tribal Elders met the participants that evening for a campfire cookout and storytelling at the historical village site located at the mouth of the Hoh River. The following day participants explored the intertidal area of Ruby Beach, another usual and accustomed area for the Hoh Tribe, where elders shared stories of historical gathering sites for clams and intertidal organisms, while explaining the current uses and harvesting of marine resources. Back at the village site, participants conducted plankton tows and water quality investigations, looking at the base of the food web that supports the marine resources vital to the Hoh Tribe, including surf smelt and salmon. The camp culminated with a community feast, celebrating the continuation of the camp, the exploration of traditional ecological knowledge and western science management, and the perpetuation of Hoh culture.

IMPROVE OCEAN LITERACY

Olympic Coast education team preps coastal camping group from NatureBridge

OCNMS education team AmeriCorps member Christine VanDeen met with a group of 10 high school students from around the United States and their Student Conservation Association leader at Olympic National Park NatureBridge campus to prepare them for their upcoming 12-day backpacking trip of the coast. An overview of the history of OCNMS, insight into the ecology of our coastline, plus an introduction to some of the research along our coast and sanctuary waters was covered. During their trip these students will conduct their own investigations of the surrounding habitat as well as marine debris removal.

Olympic Coast National Marine Sanctuary education team brings plankton exploration and ROVs to Quileute Tribal School summer program



OCNMS AmeriCorps members Kathleen McKeegan and Christine VanDeen, in partnership with Northwest Indian College, brought STEM ocean investigations to the Quileute Tribal School (QTS) summer program. Twenty QTS summer school students (grades 2-6) conducted investigations of plankton anatomy and ecology through a “Build a Plankton” game. Players race to see who can craft the most neutrally buoyant plankton out of arts-and-crafts materials. Students also tapped their engineering skills to build and operate functioning remotely operated vehicle (ROV) robots in a pool.

Students then explored the beach for intertidal organisms and conducted experiments focused on ocean acidification.

Hollings Scholar completes summer internship with Olympic Coast



For nine weeks, OCNMS Hollings Scholar, Julie Chase, planned, developed, and led three four-day summer camps in partnership with Feiro Marine Life Center in Port Angeles, Washington. Julie reached a total of 42 students aged 5 -12 through her three camps. Campers explored Ocean Literacy topics such as sanctuary habitats, marine invertebrate diversity, animal life cycles, and the human connection to the ocean through hands-on and place-based activities. The camps were evaluated using three different methods including an inquiry-based tool called “Photovoice.” All three camps were highly successful: students showed an increase in understanding of Ocean Literacy Principles and desire to share their knowledge with others. Highlights included visiting the life-size display of the orca whale Mike (J-26), performing beach seines during low tide, using cameras to

document the diversity of invertebrates in a photo journal, and walking in the Fourth of July parade in jellyfish costumes. Following this internship, Julie will complete her B.S. in Marine Biology at the University of South Florida while pursuing a Masters of Arts in Teaching as part of an accelerated program. While at school, she will continue to explore the sanctuary system, hopefully making it to Florida Keys National Marine Sanctuary!



Ocean Science Teacher Workshop discovers plankton close to home

OCNMS education staff conducted the annual Ocean Science Teacher Professional Development in Forks, Washington over July 23 - July 26, 2018. Focusing on teachers of grades 3-6 along the coast of Washington, the workshop looked at watershed health and plankton close to home. The four-day workshop started with context building, introducing plankton, the role they play in our ocean environment and the marine food web, plus the reasons for plankton monitoring among the scientific community. Teachers engaged in hands-on activities including the “great plankton race” to explore buoyancy and balance of the drifting communities, as well as made their own plankton net to use in data collection. Guest speakers presented information on freshwater plankton and why we should care about plankton so to connect a healthy marine food web, starting with plankton, to the iconic southern resident killer whales of the Pacific Northwest. Teachers visited three collection sites within the Quillayute River watershed: a lake; a river; and the sanctuary to collect plankton samples, then spent time getting used to microscopes and plankton ID, as well as created data summaries using claim, evidence, and reasoning. The workshop was funded by the North Pacific Coast Marine Resources Committee, including implementation stipends for teachers that incorporate workshop curriculum and content into their classrooms.



Olympic Coast National Marine Sanctuary AmeriCorps members explore marine mammals and intertidal zones with Montessori school group



OCNMS AmeriCorps members hosted a group of seven Montessori school students, ages 3-6, for a day of ocean exploration. Students learned about marine mammals, focusing on whales and what makes a whale a mammal. The kids learned about humpback whale flukes, practicing their scientific skills of identification through a whale fluke ID game. The group then dove into the sanctuary by watching the short Florian Graner film, *Discover the Olympic Coast*, to learn about intertidal areas. To finish off the day, the group worked together to make their own classroom tide pool.

Olympic Coast National Marine Sanctuary Washington Service Corps AmeriCorps Member, Kathleen McKeegan, completes her term of service



OCNMS Washington Service Corps AmeriCorps member, Kathleen McKeegan, completed her term. Kathleen served OCNMS as the Environmental Education and Stewardship Specialist since September 15, 2017. She was as an instructor for several OCNMS curricula and programs, including the Ocean Science Program in partnership with Pacific Education Institute and the Seattle Aquarium. During her service term (2017-18 school year), Kathleen reached 2,530 students and teachers across the Olympic Peninsula.

Working together, Kathleen and the OCNMS education team reached

an estimated 8,000 community members through opportunistic educational programs and community outreach events. Furthermore, Kathleen worked to orchestrate two beach cleanups in partnership with Washington CoastSavers. These efforts enlisted over 1,945 volunteers who removed at least 20 tons of marine debris from over 1,000 acres of Washington's outer coast. Kathleen will continue to pursue environmental education and marine conservation as a deckhand and educator aboard the schooner *American Pride* in Long Beach, California.



Pacific Northwest environmental educators unite in Portland, Oregon

Pacific Northwest B-WET (Bay Watershed Education and Training) grant recipients, NOAA staff, and regional partners met in Portland, Oregon to increase communication and share best practices at the annual Pacific Northwest B-WET grantee meeting and the Northwest Aquatic and Marine Educators (NAME) Conference. The first day was spent with a group of 18 B-WET grantees and NOAA partners to share information, better understand various approaches to MWEEs (meaningful watershed educational experiences), and learn how evaluations can best meet their programmatic needs. On the second day, participants joined a larger Pacific Northwest community of environmental educators to network and share at the NAME Conference.

Quileute Tribal School celebrates successes of 2018 Get Dirty! Expedition

In a partnership with *Hands on the Land*, Nickelodeon, OCNMS, and the Quileute Tribal School (QTS) wrapped up their 2018 Get Dirty! Expedition. Six QTS students became Get Dirty! Ambassadors: learning how to collect ocean chemistry data and phytoplankton samples as well as plankton identification. Throughout the Get Dirty! Expedition, the student ambassadors planned and implemented a community kick-off event attended by over 50 community members, created training videos for peers then trained 29 additional students in data collection, ran two booths at a local Carnival of Science on Remotely Operated Vehicles and plankton, and reported on their project and findings to OCNMS Advisory Council meeting in May 2018. Additional outcomes for the students included a summer job with Quileute Tribe Natural Resources for one ambassador and peer teaching in ROV building for the QTS summer school program. The student ambassadors also strengthened connections with the parents and families of the La Push community, enriching more than 100 community members throughout their project.

Olympic Coast National Marine Sanctuary welcomes Washington Service Corps AmeriCorps members

OCNMS welcomes two Washington Service Corps AmeriCorps members, Christine VanDeen (second year of service with OCNMS) and Gabrielle (Gabby) Genhart-Stiehler. Christine and Gabby will be with OCNMS until July 15, 2019, serving Environmental Education and Stewardship Specialists.

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

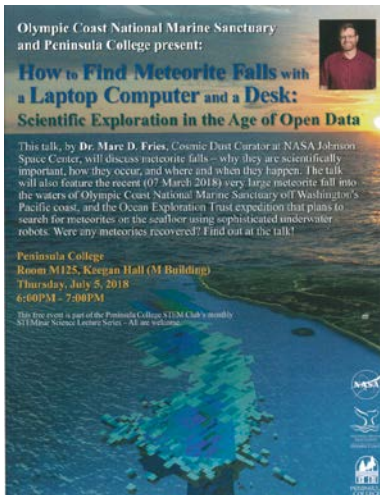
Gabby recently obtained her Bachelor of Science degree in Natural Science with an emphasis in Biology and a minor in Communication Studies from the University of Puget Sound. She is originally from San Francisco, California, and her favorite intertidal organism is a limpet. She will support K-12 educational programs, including Ocean Science, Discover Olympic Coast, Sanctuary Splash, Ocean Acidification pHyter Plankton and Monitoring Program, and Remotely Operated Vehicle (ROV) clubs.



Both Christine and Gabby will also promote Olympic Coast beach cleanups and stewardship activities in partnership with Washington CoastSavers Program.

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

NOAA, NASA, and Ocean Exploration Trust Search for Meteorites in Olympic Coast National Marine Sanctuary



According to NASA expert, Dr. Marc Fries, a very large meteorite fall on March 7, 2018 scattered about two metric tons of “cosmic dust” over the seafloor within OCNMS. July 3, Dr. Fries joined OCNMS Research Coordinator Jenny Waddell, and staff from the Ocean Exploration Trust and University of Washington, on the Exploration Vessel (E/V) *Nautilus* to attempt the first-ever recovery of meteorites from the ocean. The team mapped the most concentrated portion of the debris field with multibeam acoustic technology and a sub-bottom profiler before deploying tandem remotely operated vehicles (ROVs) to attempt to locate and recover meteorites from the silty seafloor. Using novel tools including a magnetic “rake,” a special scoop, and the ROVs articulated arm and slurp sampler system, seven samples were collected during a 7-hour dive to the debris field, which is located near the rim of Quinault Canyon at about 100m water depth. Though initial results tentatively suggest that the team may

have recovered small fragments of meteorite, official announcements await confirmation from experts at NASA and the Smithsonian, who will examine and curate the recovered material. The search, which was live-streamed on Nautiluslive.org, generated considerable public interest. The event was featured in several print stories, radio broadcasts, and public presentations to local community members who witnessed this rare and fascinating event.

Office of National Marine Sanctuaries staff support National Marine Fisheries Service’ Benthic Biodiversity Study in Neah Bay, Washington



Monterey Bay National Marine Sanctuary Science team member, Dr. Steve Lonhart, and OCNMS Research Coordinator, Jenny Waddell, assisted in the recovery and initial processing of three Autonomous Reef Monitoring Structures or “ARMS” that had been deployed on the seafloor of Neah Bay, Washington two years prior. The study, which is part of a larger effort to document the biodiversity of species living on the seafloor throughout the Pacific Northwest, is led by Dr. Gary Winans of NOAA’s Northwest Fisheries Science Center. Service members living at the Neah Bay U.S. Coast Guard base were intrigued and asked many questions during the operation.

Each ARMS unit recovered from Neah Bay yielded an array of fascinating creatures, including flatworms and tube worms, scallops and other mollusks, tiny porcelain crabs, decorator crabs, colorful shrimp, anemone, and even a few small fish. Portraits were taken of most of the species encountered. Results from the taxonomic identification effort and analysis of eDNA samples will be compared with other sites throughout Puget Sound to help describe the variability among benthic communities within the region.

Divers complete fourth year of kelp forest monitoring at Olympic Coast

Monterey Bay National Marine Sanctuary Science team member, Dr. Steve Lonhart, OCNMS Research Coordinator, Jenny Waddell, and LTJG Alisha Friel efficiently conducted safe boating and diving operations throughout OCNMS as part of the fourth year in a collaborative project with divers from NOAA’s Northwest Fisheries Science Center (NWFSC). The study, which utilizes divers to collect data on kelp forest communities (i.e., algae, fish, invertebrates, benthic cover) at five sites along Olympic Coast, was designed by scientists at NWFSC to compare the composition of current benthic communities to historical data. The effort aims to detect community changes that resulted from the reintroduction of sea otters to Washington’s coastline. Although sea otters were extirpated from the state more than a hundred years ago, successful efforts to translocate sea otters from Alaska in the 1970’s have led to re-establishment and expansion of a local population over the past several decades. Sea otter surveys conducted in 2017 along the Olympic Coast estimated the current sea otter population at 2,058 animals. A publication to document the NWFSC study is anticipated shortly.

Olympic Coast staff participates in Networked Association of Northwest Ocean Observing Systems (NANOOS) annual governing council meeting

OCNMS is a participating partner in the Pacific Northwest’s regional node to the Integrated Ocean Observing System (IOOS), and maintains an advisory role in the partnership. At the August 2018 annual meeting, NANOOS officially became certified as “Regional Information Coordination Entity” and was recognized in a ceremony with IOOS Program Director, Carl Gouldman. The meetings are a great opportunity to share information among a diversity of partners and provide a valuable opportunity for cross-sector collaboration on ocean conservation and science topics.

CONSERVE NATURAL RESOURCES IN THE SANCTUARY

Olympic Coast National Marine Sanctuary reports on 2017 Area to be Avoided Compliance



When OCNMS was designated in 1994, NOAA worked with the International Maritime Organization to designate a voluntary Area to be Avoided (ATBA) to protect the sanctuary from the risk of a major oil spill. The ATBA has been modified a number of times and currently applies to all vessels over 400 gross tons, directing them to transit 25 nautical miles offshore, allowing time to respond to emergencies. The ATBA does not apply to vessels that are conducting operations in the sanctuary, such as fishing or research. Since 1998, OCNMS has used a number of data sources and methods to monitor estimated compliance to the voluntary ATBA provisions. A number of significant changes to ATBA monitoring have recently been implemented, and are documented in our 2017 reporting of estimated ATBA compliance rates. These changes were made with the assistance of NOAA Fisheries Office of Protected Resources, who use similar techniques in support of a number of resource protection efforts. Evaluation of the 2017 vessel transits shows compliance rates lower than in 2016 (97.3% in 2016 and 95.9% in 2017).

While lower in 2017, estimated compliance of the ATBA continues to reflect a high degree of cooperation by the maritime industry. We theorize that the lower compliance rate may potentially be explained by an increase in lawful fishing in 2017 by larger fishing vessels, but this was not confirmed and was beyond the scope of the report. If fishing vessels are

excluded, the adjusted estimated compliance in 2016 (98.2%) is closer to the estimated compliance in 2017 (97.8%). Additional research into fishing activity within the ATBA is possible with the allocation of additional resources, but is not currently planned. In addition, estimated compliance rates from vessels 10,000 gross tons, are identical in both 2016 and 2017 (98.8%). The annual report is available at https://nmsolympiccoast.blob.core.windows.net/olympiccoast-prod/media/docs/2017_atba.pdf.

Submarine cables in Olympic Coast National Marine Sanctuary: History, impact, and management lessons



OCNMS released a report on two Pacific Crossing fiber optic telecommunications system submarine cables installed by plow burial in the seafloor of OCNMS in 1999 and 2000. At the time, there were no published studies on impacts of submarine cable installation to seafloor habitats or biological communities. This challenged resource management and permitting agencies to determine appropriate measures associated with these

installations. As a result, the authorization to install the cable in OCNMS required post-installation field studies to monitor the impact of cable installation on benthic habitats and biological communities and the extent of recovery over time.

Data analyzed in this report are from surveys completed between 2000 and 2004. The monitoring program used a manned submersible as well as a remotely operated vehicle to collect video and still imagery of the seafloor. Benthic sediment grabs were collected across the affected area to characterize the seafloor and to verify habitat interpretation at locations where acoustic mapping data were available. Post-installation field studies found recovery of seafloor habitats and biological communities to be relatively rapid, within months to a few years, particularly in areas of granular substrates. The longest lasting impacts may be changes to the physical structure of the seafloor along the trench.

Sanctuary managers are responsible for balancing the needs of society, the ecological condition of natural resources, and consideration for existing uses of the area. The report provides useful scientific information about the sanctuary's benthic habitats as well as management implications and monitoring recommendations for cable installations. Effective cable route planning can help identify areas susceptible to significant or persistent impacts that could be avoided during future project construction. The report can be viewed at <https://sanctuaries.noaa.gov/science/conservation/submarine-cables-in-olympic-coast-nms.html>.

Sanctuary and Coast Guard discuss collaboration and coordination

OCNMS met with U.S. Coast Guard Thirteenth District officers serving as Sanctuary Advisory Council representatives to discuss a number of issues of mutual interest. Some of the topics discussed included the value of renewing a memorandum of agreement, monitoring of an Area to be Avoided designated to protect the sanctuary, and outreach, enforcement, and responding to sanctuary vessel incidents. Several substantive items were identified for action.

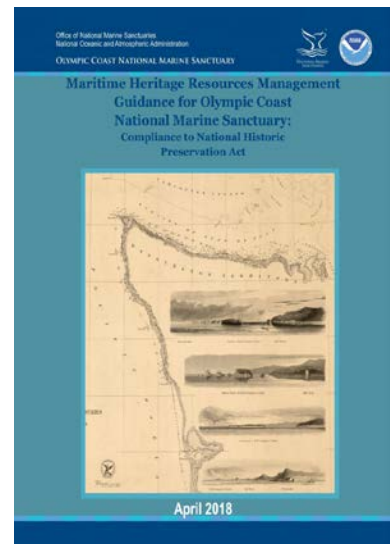
Whale entanglements in Washington/Oregon region already more than triple the annual average

On August 12, 2018, the marine mammal stranding network was mobilized to respond to a report of a humpback whale entangled in a gill net near Cape Flattery, which marks the 16th case in the Washington/Oregon region so far this year. It was also the third of three separate whale entanglements reported within a two-day period. These events seem to indicate a spike in whale entanglements for the region, which regularly experiences only three or four events per year. OCNMS staff are monitoring the situation and working with National Marine Fisheries Service Protected Resources to assist in relaying incoming reports and activation of the marine mammal stranding network of experts who are trained and authorized to respond in such situations.

UNDERSTANDING THE SANCTUARY’S CULTURAL, HISTORICAL, AND SOCIOECONOMIC SIGNIFICANCE

Sanctuary publishes Maritime Heritage Resources Management Guidance

OCNMS has drafted guidance on how they will fulfill their responsibilities under the National Historic Preservation Act, including managing maritime heritage resources in collaboration with federal, state, and tribal agencies. The Maritime Heritage Resources Management Guidance for OCNMS (MHRMG) is designed to be shared with agencies and governments that have management interests in maritime heritage resources within OCNMS. The landscapes that include the natural and heritage resources of the peninsula are managed by several governments and agencies: OCNMS, Olympic National Park, the state of Washington Department of Archeology and Historic Preservation, and the Washington Coastal Treaty Tribes (the Makah, Hoh, and Quileute Tribes, and the Quinault Indian Nation). NOAA shared a draft of this document with these entities that share jurisdiction over some of the maritime heritage resources in OCNMS for review and comment. The guidance will help these other entities coordinate their management actions with those of the sanctuary. The document can be found at <https://nmsolympiccoast.blob.core.windows.net/olympiccoast-prod/media/docs/maritime-heritage-resource-management-guidance-for-olympic-coast-national-marine-sanctuary.pdf>.



Divers Capture New 360 “Virtual Dive” photos at Olympic Coast



1A red Irish lord finds a good hiding spot among the sponges and anemones living within Olympic Coast National Marine Sanctuary. Credit: NOAA Steve Lonhart

On Sunday, July 22, sanctuary staff and divers Steve Lonhart (Monterey Bay National Marine Sanctuary) and Paul Chetirkin (Conservation Science Division) were able to leverage field operations happening at Olympic Coast to collect colorful, captivating, underwater photos and videos of sanctuary seascapes. Many of the still images were taken with a specialized camera that will allow sequenced photos to be stitched together to create a 360 degree image, which will be added to a growing library of “virtual dives” available to help the public “Get Into Your Sanctuary.” Thanks to unusually high underwater visibility and bright

sunshine, the divers came away with gorgeous shots of sea life at Tatoosh Island that will surely delight and engage viewers.

Olympic Coast Get Into Your Sanctuary – provides a look into the past



OCNMS celebrated "Get Into Your Sanctuary" by providing cultural educational opportunities with Makah Cultural and Research Center. Approximately 40 participants enjoyed a beautiful day and hikes to Ozette archeological site near Cape Alava with Makah tribal members Greg Colfax and Rebekah Monette. Colfax was an excavator on the Ozette Village archeological site, and is also an accomplished artist. Monette is the Tribal Historic and Preservation Manager for Makah Tribe. According to Makah oral

history, Ozette Village was buried under a “great slide” that took place approximately 500 (\pm 50) years ago. Following a storm in winter 1969-1970, hikers began reporting finding artifacts of the village site. Soon afterwards, the excavation of Ozette Archeological Site began. Archaeological exploration uncovered multiple longhouses and their respective contents, including over 55,000 artifacts. The Makah Tribe curates and interprets this unique collection at the Makah Museum in Neah Bay.



Olympic Coast Get Into Your Sanctuary – Whales, porpoises and rockfish... Oh my!

OCNMS celebrated "Vet Into Your Sanctuary" by providing recreational boating opportunities for veterans and their families. Forty-five participants, comprised of United States veterans and their families, enjoyed a beautiful day either fishing or wildlife viewing in the sanctuary waters aboard the Neah Bay charter boat *Wind Song* or the R/V *Tatoosh*. Rockfish made up the majority of the morning fishing charter catch. Wildlife watchers took in the scenic beauty of the coastline, visited a common murre rookery, a Steller sea lion haul out, plus caught glimpses of harbor porpoises and humpback whales.



Some fragments recovered from seafloor likely to be coal from an 1892 shipwreck

Based on NASA’s initial evaluations, it appears that some of the fragments recovered from the seafloor last month by the Exploration Vessel (E/V) *Nautilus* are believed to be coal from the vessel *Ferndale*, which sank off Copalis Beach in January 1892. According to staff at The Museum of the North Beach, the *Ferndale* was transporting 2100 tons of anthracite coal from New South Wales, Australia to

Portland, Oregon when she was blown off course during a storm while approaching the treacherous Columbia River bar. Though most of the crew perished in the storm, three men were rescued by Martha White, a local resident who received two medals of honor and widespread recognition for her heroism. The coal, which has a black crust resembling meteoric fusion material, periodically washes up on local beaches in the southern part of the sanctuary. Analysis of additional fragments recovered from the seafloor as part of a search for meteorite debris are still ongoing.

SANCTUARY PERMITTING

Issued Permits and Authorizations

MULTI-2018-005 – Bill Hansen - NOAA National Data Buoy Center (NDBC)

Project Title: NOAA Weather Buoys 46FLO, 46042, 46012, 46026, 46013, 46041, 41008, and 44018

Permitted Activity: Alteration of the submerged lands for deploying moorings and their anchors at eight (8) locations throughout the west coast region. One of the eight is in OCNMS. The NDBC buoy at the entrance to the Strait of Juan de Fuca is not included in the permit as it collocates on a navigation buoy, which is exempt from permitting.

Project Location: Cape Elizabeth NDBC Buoy

Permit Duration: August 21, 2018 through August 21, 2023

Comment: This is a continuation of a longstanding permit to allow the placement of the Cape Elizabeth weather buoy, a new requirement will be to recover the mooring anchor when servicing and redeploying the buoy. The anchors had previously been abandoned.

OCNMS-2018-005 – Gregg Dietzman, White Point Systems

Project Title: Marine microbial diversity survey

Permitted Activity: Collection of up to 198-10 gram marine sediment samples, from 22 sites (9 samples per site).

Project Location: 22 specific locations throughout the sanctuary

Permit Duration: July 26, 2018 through June 30, 2021

Comment: The permit applicant is a private organization that seeks access to marine microbial diversity by collecting marine sediment samples on the outer coast of Washington state. Samples will be evaluated for use as industrial enzymes and pharmaceutical agents or diagnostics. There are additional sites outside OCNMS. Those that are within state waters are being evaluated by WDNR.

OCNMS-2018-006 – Bruce Mate, Oregon State University

Project Title: Humpback, blue, fin, sei, and North Pacific right whale tagging in northern Washington

Permitted Activity: Tagging of up to 25 whales per year.

Project Location: Throughout the sanctuary

Permit Duration: August 1, 2018 through October 31, 2019

Comment: OSU's Marine Mammal Institute (MMI) is proposing to conduct a tagging and tracking study primarily on Eastern North Pacific humpback whales to determine their movement patterns, occurrence, and residence times within U.S. Navy training and testing areas along the U.S. West Coast. This work is in support of the Navy's efforts to meet regulatory requirements for monitoring under the Endangered Species Act and the Marine Mammal Protection Act. 2018 activities are complete and 13 humpback whales were tagged.

OCNMS-2018-007 – Joseph Petersen, Makah Tribe

Project Title: Makah Tribe Derelict Crab Removal Project

Permitted Activity: Low overflights

Project Location: Throughout the Makah Usual and Accustomed fishing area
Permit Duration: September 15, 2018 through August 31, 2020
Comment: Low altitude flights at no lower than 800 feet above ground/water level altitude in fixed wing aircraft in the overflight restricted zone within OCNMS to locate derelict crab pots.

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

Project Title: Surveillance Towed Array Sensor System (SURTASS) Settlement: Sanctuary Soundscapes

Permitted Activity: Up to 30 deployments of subsurface moorings (SoundTrap), at the four locations

Project Location: Cape Flattery, Traffic Lanes, Cape Alava, Point Grenville

Permit Duration: September 15, 2018 through December 1, 2022

Comment: NOAA and the U.S. Navy have initiated a program to characterize soundscapes within national marine sanctuaries, including three west coast sanctuaries: Olympic Coast, Monterey Bay, and Channel Islands. This program aims to measure and describe both comparable and site-specific underwater soundscape qualities within the National Marine Sanctuary System, in order to support developing the capacity to understand and protect acoustic habitats. The program is designed for holistic sampling of the soundscape to reflect specific sampling needs (in space, time, and frequency) identified by the staff and constituents of each sanctuary, including anthropogenic sound sources, natural abiotic sound sources, and biological sound sources.

OCNMS-2018-009 – Neil Trenaman, Ocean Aero, Inc.

Project Title: Submaran based sampling for HAB organisms

Permitted Activity: Deployment of a Submaran S10 autonomous underwater & surface vehicle (AUSV) and the collection of harmful algae bloom (HAB) samples.

Project Location: Waters offshore of Cape Flattery

Permit Duration: September 15, 2018 through November 1, 2018

Comment: The AUSV will collect HAB samples for two to three days within a two month period in September/October 2018 as part of the NOAA-funded Northwest Association of Networked Ocean Observing Systems (NANOOS).

Pending Permit Requests

MULTI-2018-007 – Dr. Elizabeth Clarke, NOAA Northwest Fisheries Science Center

Project Title: West Coast Deep-Sea Coral Initiative, Shimada October 2018

Permitted Activity: Seabed disturbance through the operation of Remotely Operated Vehicle (ROV), which will be collecting samples. Operation of an Autonomous Underwater Vehicle (AUV). Discharges of expendable bathythermographs (XBT) to support mapping.

Project Location: Throughout the sanctuary (individual stations not yet identified)

Permit Duration: 2018 through 2021 (no activity is planned in OCNMS in 2018)

Comment: The Deep Sea Coral Research and Technology Program (DSCRTP) funds multi-year regionally lead research initiatives to collect scientific information to better protect and conserve deep-sea coral and sponge (DSCS) ecosystems. The first DSCRTP supported research initiative to focus on the West Coast took place 2010-2012, and was led by Elizabeth Clarke (NWFSC). Chris Caldwell (CINMS) and Elizabeth Clarke are leading the second initiative in this region, referred to as the West Coast Deep-Sea Coral Initiative (WCDSCI; 2018-2021).

OCNMS-2018-010 – Bruce Taft, NOAA National Data Buoy Center (NDBC)

Project Title: Maintenance of Coastal-Automated Marine Network (C-MAN) weather station on Destruction Island, Washington.

Permitted Activity: Low overflight

Project Location: Destruction Island

Permit Duration: October 1, 2018 through March 31, 2023

Comment: Fly below 2,000 feet to land on Destruction Island to service the Coastal-Automated Marine Network (C-MAN) weather station. This operation will be supported by a U.S. Coast Guard helicopter.

OCNMS-2018-011 – Paul Matthias, Woods Hole Oceanographic Institution

Project Title: Ocean Observatories Initiative (OOI) - Endurance Washington Inshore Moorings and Glider Operations

Permitted Activity: Deployment and maintenance of an oceanographic mooring and the deployment of two autonomous underwater vehicles (Teledyne-Webb Slocum Gliders).

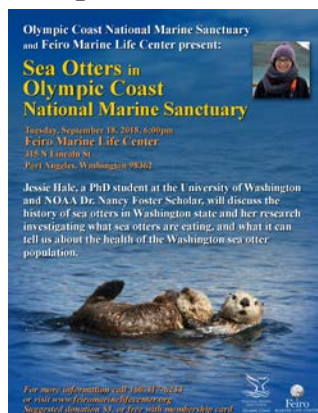
Project Location: The mooring is in the southern portion of the sanctuary, and the gliders will operate throughout the sanctuary.

Permit Duration: Requested October 1, 2018 through September 30, 2023

Comment: This is an ongoing activity currently covered by an OCNMS research permit; the new permit changes the responsible permit holder and extends the time period of the permit.

LEARN ABOUT YOUR SANCTUARY / NATURAL HISTORY

Co-Sponsored 2018-19 Speaker Series Kicks off with Otters!



On September 18, 2018, OCNMS and Feiro Marine Life Center will kick off the 2018-19 Speaker Series. These organizations work together to bring experts on marine topics of interest to the public forum using a variety of venues.

This season's initial talk will be held at Feiro beginning at 6 pm. The first speaker will be Jessie Hale, a PhD student at the University of Washington and a NOAA Dr. Nancy Foster Scholar. She will discuss the history of sea otters in Washington state and her research investigating what sea otters are eating, and what it can tell us about the health of the Washington sea otter population.

REGIONAL / NATIONAL MARINE SANCTUARY SYSTEM NEWS

West Coast Region Resource Protection Coordinators meet in the Channel Islands

Sanctuary staff, tasked with resource protection coordination, from the five west coast national marine sanctuaries, West Coast Regional Office, and the Office of National Marine Sanctuaries met in Channel Island National Marine Sanctuary to report on progress on previously identified regional priorities and to discuss future plans. This year the group which meets annually, was joined by the acting ONMS Resource Protection Coordinator, Paige Doelling, who is on detail from the NOAA Office of Response and Restoration. Some of the topics discussed included marine transportation, maritime incidents, marine mammal ship-strikes and entanglements, wildlife disturbance, enforcement, and emergency response.

National Marine Sanctuaries celebrated National Ocean Month by engaging over 21,000 people

National marine sanctuaries celebrated Ocean Month this June, an internationally recognized celebration of our world's ocean. Throughout communities adjacent to national marine sanctuaries, more than 21,000 people were impacted by participating in events such as shoreline cleanups, virtual reality presentations, and interactive festival booths. Many of these events were held on World Oceans Day, an

UN designated day to acknowledge our world's shared ocean and our personal connection to the sea. This year's theme for World Oceans Day, preventing plastic pollution and encouraging solutions for healthy ocean, brought awareness to the current state of our ocean and helped share stories from national marine sanctuaries.

Scientists unable to identify "smoking gun" in 2016 coral mortality event at Flower Garden Banks National Marine Sanctuary

<https://sanctuaries.noaa.gov/news/aug18/flower-garden-banks-coral-mortality-symposium.html>

This localized mortality event was unlike anything sanctuary researchers had ever seen before. The coral reefs of Flower Garden Banks National Marine Sanctuary are some of the healthiest in the world, and this patch of dying reef at East Bank looked unlike any known coral disease or damage. Sanctuary staff quickly alerted scientists from around the world. The scientific community mobilized, conducting surveys on the mortality site a week later and the following year. This February, the sanctuary, in partnership with the Gulf of Mexico Coastal Ocean Observing System (GCOOS) and the U.S. Integrated Ocean Observing System (IOOS), brought together 40 researchers from different disciplines to discuss possible causes of the mortality event. A [new report](#) summarizes their findings.

MPA Center and NCCOS Support Workshop on Marine Spatial Planning and Seasketch in Bogor, Indonesia July 2-6, 2018

A team from NOAA's NCCOS, MPA Center, and University of California Santa Barbara's Marine Science Institute in conjunction with USAID's SEA project team supported a July 2-6 workshop on using Marxan with Zones and Seasketch as decision support tools for the staff of Indonesia's Ministry of Marine Affairs and Fisheries spatial planning division. Participants were trained in various aspects of the Marxan with Zones tool, including ways to improve analysis and outputs. Participants then explored the use of Seasketch, including developing surveys and forums to collect data inputs, inputting and mapping data, as well as exploring the reporting tools for creating outputs on mapping plans. Both tools will help engage stakeholders in participatory analysis, which will be the focus of a future workshop.

NOAA sponsors National Marine Educators Conference in Long Beach, California

The NOAA Office of Education was the leading sponsor for the annual conference of the National Marine Educators Association (NMEA) in Long Beach, California. Claire Fackler provided four formal presentations at this conference with sessions focused on bringing the ocean into classrooms with national marine sanctuaries where teachers learned about our free Science, Technology, Engineering, and Math (STEM) resources and hands-on field experiences to increase ocean and climate literacy with their students. She also hosted a session focused on our evaluation efforts and one on the youth-based LiMPETS citizen science project. In total, 76 participants attended the presentations and having participated in the sessions, 78 percent are very interested in learning more about national marine sanctuary education programs. 65 percent of participants plan to integrate the content from these sessions in their work within the next year.

ONMS and Hispanic Access Foundation collaborate on Latino Conservation Week tweetchat

On Thursday, July 19, ONMS and Hispanic Access Foundation teamed up to hold a 90-minute tweetchat discussion for Latino Conservation Week. The tweetchat featured current Dr. Nancy Foster Scholar Alexandra Avila and scholarship alumnus Dr. Jan Vicente, answering questions about their experiences as Latinx people in STEM fields. The tweetchat reached more than 84,000 people.

Superintendent presents at Preservation Leadership Forum webinar

Last week, the National Trust for Historic Preservation's Preservation Leadership Forum hosted a webinar about national marine sanctuaries. Jeff Gray, superintendent of Thunder Bay National Marine Sanctuary,

and Sammy Orlando, Chesapeake Bay regional coordinator, discussed garnering support for the national marine sanctuaries at Thunder Bay and Mallows Bay, a resource on the Potomac River in Maryland, and one of the National Trust for Historic Preservation's National Treasures, which is in the process of being designated.

Dr. Nancy Foster Scholars touch on different research at national marine sanctuaries

Nancy Foster Scholar, Nissa Kreidler, kicked off the orientation week communication skills lecture with her research on deep sea coral off the coast of Southern California. Jessica Hale followed Kreidler with her examination into sea otter populations and the regrowth of their species in the Pacific Northwest. Samara Haver discussed how sound pollution affects different marine mammals and the understanding of how sound travels in water. Alex Avila capped off the evening with her look into a specific rockfish population for fishing, eating, and the fishes environmental impact.

REGIONAL / NATIONAL MARINE SANCTUARY FOUNDATION NEWS

Blue Star dive operators remove over one ton of marine debris from reefs in Florida Keys National Marine Sanctuary as part of Goal: Clean Seas Florida Keys

<https://marinesanctuary.org/news/goal-clean-seas-update-1/>

“Healthy reefs are critical to sustaining biodiversity and a strong recreation and tourism economy in Florida,” Kris Sarri, President and CEO of the National Marine Sanctuary Foundation. “Through Goal: Clean Seas Florida Keys we hope to engage local residents and businesses in efforts to conserve the reef and bring statewide and national attention to the need to protect this natural treasure.”

National Marine Sanctuary Foundation awards \$120,000 grant to Center for Coastal Studies to engage local fishing community in research and conservation

<https://marinesanctuary.org/news/depredation-grant/>

The National Marine Sanctuary Foundation announces a grant to the Center for Coastal Studies (CCS) to study bycatch and depredation in sink gillnet fisheries in and adjacent to Stellwagen Bank National Marine Sanctuary. The research performed by commercial fishermen, CCS, and partners at Woods Hole Oceanographic Institution will allow for a better understanding of the interactions between gillnet fisheries and predators such as dogfish and seals.

OCNMS Online

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

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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 Pacific Marine Environmental Laboratory

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

OLYMPIC COAST NATIONAL MARINE SANCTUARY

OCNMS Staff

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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