

A Report for Sanctuary Advisory Council Members Reporting Period: July 3 – Sep 10, 2021

ABOUT THE SANCTUARY

Olympic Coast National Marine Sanctuary spans 3,188 square miles of marine waters off the rugged Olympic Peninsula coastline. The sanctuary extends 25 to 50 miles seaward, covering much of the continental shelf and several major submarine canyons.

The sanctuary protects a productive upwelling zone home to numerous marine mammal and seabird species, diverse populations of kelp and intertidal algae, and thriving invertebrate communities. The sanctuary is also rich in cultural resources, with over 200 documented historical shipwrecks and the vibrant contemporary cultures of the Makah, Quileute, and Hoh Indian Tribes and the Quinault Indian Nation.

OLYMPIC COAST NATIONAL MARINE SANCTUARY NEWS AND PROGRAM UPDATES

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

Table of Contents

- Treaty Trust Responsibilities 1
- Collaborative and Coordinated Management 1
- Conduct Collaborative Research, Assessments, & Monitoring to Inform Ecosystem-Based Management 2
- Improve Ocean Literacy4
- Natural History.....10
- Sanctuary Permitting..... 11
- Regional/National Marine Sanctuary System News .. 11
- Regional/National Marine Sanctuary Foundation News 13
- Contact Information 15

TREATY TRUST RESPONSIBILITIES

Olympic Coast National Marine Sanctuary (OCNMS) seeks to work directly with the Coastal Treaty Tribes on a government-to-government basis to promote a healthy ecosystem in the waters adjacent to the Olympic Peninsula for the support and enhancement of tribal treaty rights and resources, cultural resources and activities, tribal self-determination, and sovereignty. OCNMS supports and works with the Olympic Coast Intergovernmental Policy Council to obtain guidance and the collective views of the Coastal Treaty Tribes and the state of Washington on maintaining a healthy marine ecosystem in the waters off the Olympic Peninsula for the benefit of all citizens and for future generations.

COLLABORATIVE AND COORDINATED MANAGEMENT

Sanctuary leadership provides vessel tour to Deputy Secretary of Commerce and Representative Jayapal

On September 3rd, sanctuary leadership and staff met with Deputy Secretary of Commerce Don Graves and Congresswoman Pramila Jayapal (Washington state 7th District) in Edmonds, Washington as well as Ron Willie, the President of All-American Marine (AAM). The purpose of the visit was to tour NOAA’s newest sanctuary research vessel, the R/V *Storm Petrel*. The goal was to share the important role that small boats and research vessels have in supporting NOAA’s mission, specifically managing national marine sanctuaries. While aboard the vessel, sanctuary staff highlighted the important role of partners, like AAM, in supporting NOAA’s missions to research and manage our oceans and coasts.



Figure 1: ONMS and governmental representatives tour the R/V Storm Petrel

New research vessel launched for Olympic Coast National Marine Sanctuary



Figure 2 R/V Storm Petrel initial launch



Figure 3 R/V Storm Petrel initial mooring

All American Marine, based in Bellingham, WA, launched a 52' research catamaran – Research Vessel (R/V) *Storm Petrel* - for Olympic Coast National Marine Sanctuary (OCNMS). The vessel will serve as a valuable asset to support the on-water mission requirements of NOAA and national marine sanctuaries.

R/V *Storm Petrel* has a capacity of 18 persons. It includes a large working space on the aft deck, both a wet laboratory for examining specimens and a dry laboratory for processing data, a conduction wire winch, hauling winch, a deck crane, and a j-frame/pot hauler. The main deck features a 5,000 pound “A-frame” for launching scientific equipment. This new research platform can therefore provide support for research concentrating on climate change and ocean acidification monitoring (including data collection on near shore oceanographic conditions), seafloor mapping, habitat characterization, as well as monitoring the health of ocean resources and marine wildlife. In addition to research, R/V *Storm Petrel* can support a range of at-sea activities including technology testing, derelict gear recovery, and marine education and outreach activities, among others. OCNMS accepted delivery of the vessel in August of 2021.

Olympic Coast National Marine Sanctuary welcomes Captain Marshall Stein

In August 2021, Olympic Coast National Marine Sanctuary welcomed Captain Marshall Stein. Capt. Stein has over 17 years of maritime experience, including 10 years as a US Coast Guard-licensed captain. He has worked primarily on recreational and commercial fishing vessels as well as some experience with harbor dredge companies. Over the past 5+ years he has served as a contracted captain and mate (through Cardinal Point Captains) on the NOAA vessels *R/V Fulmar* and *Shearwater* for national marine sanctuaries in California. He recently moved to Port Angeles, Washington, to serve as the Lead Vessel Captain of Olympic Coast National Marine Sanctuary's *R/V Storm Petrel*. In his personal time, you can usually find him fishing or playing a round of golf.



Figure 4 Lead Vessel Captain Marshall Stein

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

Cross-NOAA partnership completes kelp forest dive surveys on the Olympic Coast

A partnership between NOAA's Northwest Fisheries Science Center (NWFS) and the Office of National Marine Sanctuaries (Olympic Coast and Monterey Bay National Marine Sanctuaries) managed to complete a full set of ecosystem surveys at all five locations along the Olympic Coast during the last week of July 2021, despite several challenges. The team, which has been conducting surveys since 2015, visited shallow (5 meter) and deep (10 meter) locations in five kelp forests between Destruction Island and Neah Bay. The team used standardized protocols to quantify seafloor

habitat, record the composition of kelp forest algal species, and estimate fish and invertebrate populations along transects. The team was eager to return to the sites after the gap year of 2020. They worked together closely with creativity and dedication to overcome the many challenges that arose during the week along this remote coastline, including mechanical issues with both support vessels and a broken belt on the air compressor used to fill scuba tanks each evening. Thanks to leadership of LTJG Anna Hallingstad, captain of R/V *Tatoosh*, Nick Tolimieri, NWFSC diving supervisor, and the numerous contributions of all members of the collaboration, the team was able to accomplish the full suite of planned operations in a safe and efficient manner. Data from the project is available to the public.

OCNMS staff conduct annual intertidal monitoring at tribal beaches in Washington

On August 9th and 10th, Olympic Coast National Marine Sanctuary (OCNMS) staff joined Dr. Melissa Miner, Pacific Northwest lead for the Multi-Agency Rocky Intertidal Network, at the coast during morning low tides for annual intertidal monitoring following a gap year in 2020. Sites monitored by the team include Kydikabbit Point on the Makah Tribal reservation and Point Grenville on lands of the Quinault Indian Nation, both of which required extra coordination and special permission due to the continued closure of reservations to non-tribal members. Four additional sites along this wilderness coastline are monitored each summer by partners from Olympic National Park, using standardized protocols that allow for comparisons across time and across west coast sites stretching from Southern California to Sitka Alaska. Intertidal data from all six, long term monitoring locations on the Olympic Coast are featured prominently in the OCNMS 2020 Condition Report due out this fall. Additional data and publications resulting from this collaboration are available from MARiNe: <https://marine.ucsc.edu/>.



Figure 5: Dr. Melissa Miner assesses long term barnacle plots at Pt Grenville and relays findings to OCNMS' Katie Wrubel, who records information directly into an iPad for rapid transfer to the group's online database.

Olympic Coast National Marine Sanctuary and Pacific Marine Environmental Laboratory deploy autonomous plankton samplers for eDNA project

During routine operations of Olympic Coast National Marine Sanctuary's (OCNMS) long term coastal mooring program, staff from OCNMS and Pacific Marine Environmental Laboratory (PMEL) collaborated on the first deployment of two autonomous plankton samplers to collect biological samples adjacent to the sanctuary's long term 42-meter ocean monitoring sites at Cape Elizabeth and Teahwhit Head. The autonomous plankton samplers are programmed to collect and filter water samples every 36 hours at noon and midnight for five weeks. This will allow researchers to analyze the genetic information in the samples and utilize eDNA techniques to describe the diversity of life detected therein, in association with water column data collected by sanctuary moorings. Over time the process will detect and quantify changes in the biological community present on the Olympic Coast, as changing ocean conditions continue to unfold on this remote and rugged coastline. This region is home to Washington's four Coastal Treaty Tribes who hold treaty-protected rights to marine resources in this region. The team will also conduct Conductivity – Temperature - Dissolved Oxygen (CTD) casts at the deployment sites, along with collection of 10 replicate Niskin bottle water samples taken from the target deployment depth for complementary validation data. The test deployment is being done in preparation for more routine deployments planned to begin next year so to better associate changes in ocean conditions with impacts to living resources in the sanctuary over time.

Sanctuary teams up with NOAA Dive Center to rescue data from the seafloor

In early September, five expert divers from the NOAA Dive Center joined members of the sanctuary research team on the R/V *Storm Petrel* in a mission to recover two “SoundTrap” moorings, along with their valuable data, from the seafloor. The moorings had been deployed as part of a multi-year collaboration to record underwater sound at four locations along the Olympic Coast. However, they did not surface as expected when release mechanisms were triggered during previous recovery attempts. NOAA divers, called in to assist with recovery, were delivered directly to the target locations and were able to safely clip recovery lines to the moorings, which made it possible for the team to bring the gear to the surface once the divers were safely back on board. Successfully recovered gear included the SoundTrap recording devices themselves, which appeared to be intact upon preliminary examination and were quickly returned to partners at the Naval Postgraduate School for analysis. Olympic Coast National Marine Sanctuary staff are extremely grateful for the expert and professional assistance of NOAA Dive Center partners, and for their extreme flexibility in working through the multiple challenges presented by a remote environment, a new research vessel, and a global pandemic.

IMPROVE OCEAN LITERACY

NOAA Science camp highlights whale talk in Olympic Coast

Building on their successes from last summer, NOAA Science camp held their 2021 summer camp virtually through NOAA Live! Webinars and at home activities during two weeks in July. Camp participants were provided the opportunity to join four interactive webinars, as well as a series of at-home activities hosted by NOAA scientists. Targeting grades 6-8, the [NOAA Live! NOAA Science Camp webinars](#) were presented through a partnership between NOAA's Regional Collaboration Network, Woods Hole Sea Grant, NOAA Fisheries Alaska Fisheries Science Center, Washington Sea Grant, and Olympic Coast National Marine Sanctuary. The four NOAA Science Camp webinars featured a different NOAA expert/topic and a moderated live Q&A with participants. These webinars and activities were designed to provide safe online interaction for students while sharing scientific content, demonstrating possible career paths, and providing fun and engaging information. Sanctuary staff led one of the four webinars this summer on Olympic Coast National Marine Sanctuary, the National Marine Sanctuary System, and the science of sound and whale acoustics, reaching 75 students.

Jr Oceanographer's go under the sea to explore ocean habitats.

Olympic Coast National Marine Sanctuary AmeriCorps Members, Cheyenne Palmo and Holly Keedy, joined Feiro Marine Life Center staff to conduct week one of the highly anticipated “Jr. Oceanographer Summer Camp,” located in Port Angeles, Washington. The camp, *Under the Sea: Exploring Ocean Habitats*, focused on educating nine 5-6 years old campers on multiple habitats in the sanctuary in a completely outdoor camp setting. Throughout the week campers participated in a variety of activities, including intertidal creature relay races, bird observation walks, explorative beach time, and a make-your-own binoculars craft. In addition to the structured activities, campers were encouraged to develop and strengthen their interpersonal skills after a year without “normal” in-classroom instruction, like sharing, working together, and listening. COVID-19 precautions were taken throughout the program, including mandatory masks for all campers and instructors, social distancing, and frequent hand washing.



Figure 6 OCNMS AmeriCorps Cheyenne Palmo with a “leave there beach art” orca made from beach kelp.



Figure 7 OCNMS AmeriCorps Holly Keedy playing freeze dance with campers

Junior Oceanographer campers explore the ocean’s web

Olympic Coast National Marine Sanctuary (OCNMS) AmeriCorps Members, Cheyenne Palmo and Holly Keedy, joined Feiro Marine Center for week 2 of the Jr. Oceanographer Summer Camp. The camp, *Ocean’s Web: Exploring the Marine Food Web*, was provided for twelve 7-9 years old campers and focused on connecting the wide variety of marine life to the dynamic Washington coastal food web. Throughout the week, campers participated in a variety of activities, including relay races that explored different bird beaks, an obstacle course that represented the salmon life cycle, and a plankton competition in which campers had to build neutrally buoyant “plankton” using everyday household items.

At the end of the week, campers reflected on their camp experiences: what they learned, sharing their newfound plankton and bird knowledge and the role humans play in the marine food web. Campers and instructors were able to enjoy an in-person all outside camp this year while following all COVID-19 precautions, including mandatory masks, social distancing, and frequent hand washing.



Figure 8: OCNMS AmeriCorps Holly with campers at Hollywood Beach, Port Angeles

Washington Alliance for Better Schools’ Access STEM program dives into NOAA resources

Olympic Coast National Marine Sanctuary (OCNMS) education staff supported the virtual 2021 Access STEM (Science Technology Engineering Math) teacher professional development hosted by the Washington Alliance for Better Schools (WABS), engaging 35 Seattle area teachers from eight school districts in the Puget Sound area. Access STEM recruits teachers to learn about local industries and organizations. The teachers then create science and technology units based on the information they learned during their placements. This year, teachers had access to three days of 90-minute NOAA sessions and presentations to learn about STEM topics and NOAA careers and resources. OCNMS staff provided information and resources on the many sanctuary education resources and lesson plans including the Ocean Acidification Communication Toolkit: Dungeness Crab Case Study, the Deep Coral Communities Curriculum, Virtual Dives in Olympic Coast, and upcoming Mini-Teacher Professional Development opportunities with OCNMS and NOAA’s Office of Ocean Exploration and Research.

North Olympic Watershed Science workshop prepares teachers to support salmon from headwaters to ocean.

North Olympic Watershed (NOW) Science partners hosted a four-day teacher workshop exploring the watersheds of the North Olympic Peninsula from the headwaters to the ocean. Olympic Coast National Marine Sanctuary (OCNMS) education staff joined Dungeness River Audubon Center, Feiro Marine Life Center, and Olympic National Park (ONP) on a journey down the watersheds while introducing field science tools and data collection protocols implemented in the varied land use examples around our local watersheds. Starting in the protected headwaters of ONP and ending at the ocean, where all watersheds lead, teachers increased their understanding and confidence in providing environmental science education through hands-on field science. Participants explored data collection, making observations, asking questions, making connections, and conducting experiments that can all be replicated on their school grounds. Twelve local educators participated in the in-person, all outside Workshop. Teachers were provided time to plan how to implement this material into their classrooms over the next year and presented their ideas to the group as we continue to build the professional learning community in our area.

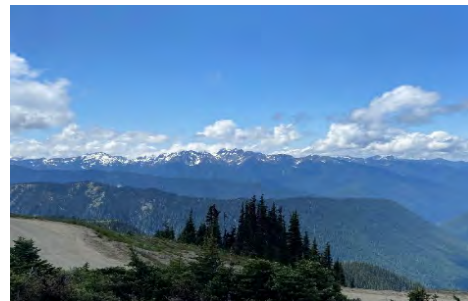


Figure 9: View from Hurricane Ridge in Olympic National Park

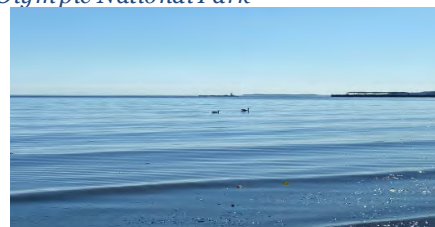


Figure 10: View from Hollywood Beach in Port Angeles, WA

Olympic Coast National Marine Sanctuary’s Get into Your Sanctuaries webinar event Features Janine Ledford in Journey to the Beginning of the World



Figure 11: Carved figures on the ground of the Makah Museum

As part of the “Get into Your Sanctuary” virtual webinar series, 133 members of the interested public, tourism and recreation industries registered for the *Journey to the Beginning of the World* presentation by Janine Ledford, Executive Director of the Makah Cultural and Resource Center. This virtual event showed how important protecting the ocean and its resources is to the Makah tribe. Sixty-seven people attended the live presentation to learn more about the Makah people and their long-standing relationship with the ocean. National marine sanctuaries are places everyone can go to experience the power and beauty of the of the ocean, plus form lasting

memories. The experience was especially meaningful since Makah Indian Reservation has been closed to visitors since March 2020 due to the pandemic. All *Get Into Your Sanctuary* virtual offerings will be available on-demand and captioned at <https://sanctuaries.noaa.gov/visit/giys.html>

Pacific Northwest schools recognized as Ocean Guardian Schools

An Ocean Guardian School makes a commitment to protect and conserve its local watersheds, the ocean, and special ocean areas, such as national marine sanctuaries. Despite multiple challenges associated with the global pandemic, including distance learning, six schools were officially recognized by NOAA’s Office of National Marine Sanctuaries and the National Marine Sanctuary Foundation as Ocean Guardian Schools during the 2020-2021 school year. Each school demonstrated that the program requirements were met and will receive an official [Ocean Guardian School banner](#). One award went to Warrenton Prep, in Oregon, which achieved Year 5 status!

Ocean Shores Coastal Interpretive Center new sanctuary exhibit and grand opening attracts federal and local leadership

A new Olympic Coast National Marine Sanctuary (OCNMS) exhibit is now featured in Ocean Shores, Washington. Over the last year, the Coastal Interpretive Center worked closely with sanctuary staff to design and construct a full room exhibit focusing on national marine sanctuaries, the habitats, and organisms of OCNMS, as well as sanctuary science and stewardship. The center attracts over 20,000 guests during the summer season, as well as hundreds of regional school children throughout the school year. On August 4, 2021 the Coastal Interpretive Center held a grand opening after 14 months of closure due to the COVID-19 pandemic. Sanctuary Resource Protection staff attended the grand opening to give guided tours of the sanctuary exhibit and provide Coastal Interpretive Center staff and docents with sanctuary-specific talking points and content to use in future tours. Congressman Derek Kilmer, Ocean Shores Mayor Crystal Dingler, and Grays Harbor County Commissioner Vickie Raines were in attendance and very engaged during the guided tour of the sanctuary.



Figure 12: New OCNMS room in the Coastal Interpretive Center



Figure 13: Dignitaries help to kick off the exhibit's grand opening



Figure 14: New OCNMS habitat mural



Figure 15: Visitors attend the unveiling

What's Up Down Under webinar rocks with six sanctuaries sharing banks and seamounts

Olympic Coast National Marine Sanctuary (OCNMS) joined Papahānaumokuākea Marine National Monument and Cordell Bank, Grays Reef, Stellwagen Bank, and Thunder Bay National Marine Sanctuaries to showcase a few of the banks and seamount features of sanctuaries around the US. The webinar, part of the Get Into Your Sanctuary virtual series, had over 120 registrants and 67 live attendees dive into the geologic history, habitat, and species of the six showcased areas. Olympic Coast focused on Swiftsure Bank, a small but mighty part of the sanctuary and one of the most abundant fishing grounds for coho and chinook salmon on the west coast, as well as a rich and productive area for marine mammals and seabirds. Attendees of the webinar received six sanctuary passports as part of the Get Into Your Sanctuary event, and now know a little bit more about banks and seamounts in our one big ocean.

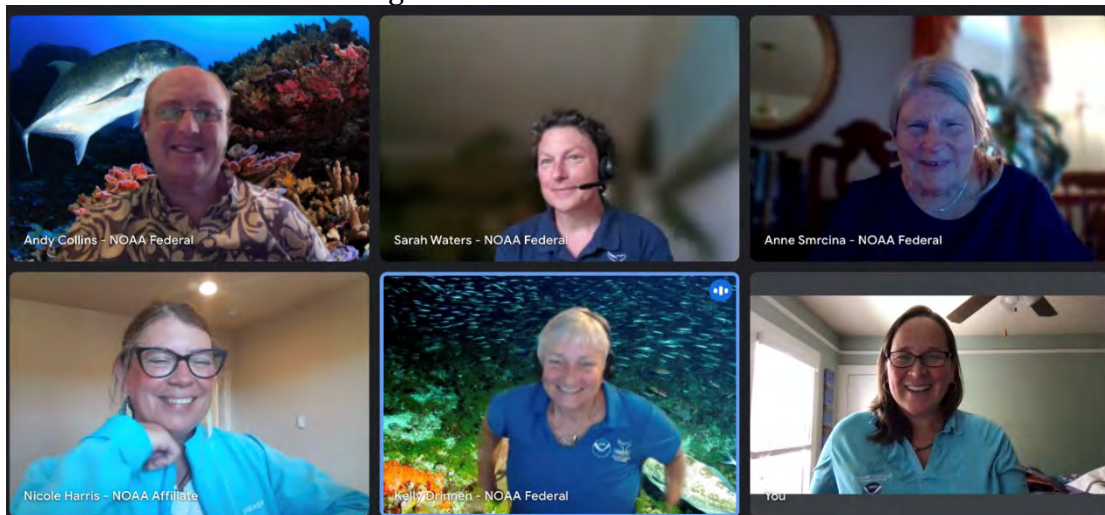


Figure 16: Staff from six national marine sanctuaries showcase banks and seamounts across the system.

Olympic Coast National Marine Sanctuary's Get into Your Sanctuaries Tidepool Takeover is an In-person event

Olympic Coast National Marine Sanctuary (OCNMS) education and outreach staff stormed the beach in a for a Tidepool Takeover with Olympic National Park (ONP)! OCNMS take took charge of ONP's regularly scheduled guided tidepool walk at Kalaloch Beach 4 on Sunday August 8th at 7am. Visitors were able to get into their sanctuary as they explored the amazing world of the intertidal zone while learning about this productive and diverse marine protected area.



Figure 17: Visitors head to tidepools, which teem with invertebrates, including ochre sea stars and spawning aggregating anemones

Olympic Coast National Marine Sanctuary offers virtual experience with Makah Tribe: Journey to the Beginning of the World!

Olympic Coast National Marine Sanctuary, working in partnership with Makah Tribe and Makah Cultural and Research Center, completed a virtual video experience “360° Journey to the Beginning of the World with the Makah Tribe”. The video, narrated by Maria Parker Pascua of Makah Tribe, provides insight into the longstanding relationship the Makah people have with the ocean. The video provides an opportunity for virtual visitors to take a breathtaking 360 tour of Makah territory including Cape Flattery, known as the beginning of the world! Located on the Makah Indian Reservation, at the northwestern-most point in the lower 48 United States, Cape Flattery offers sweeping views of Olympic Coast National Marine Sanctuary, Tatoosh Island, and Cape Flattery Lighthouse. <https://sanctuaries.noaa.gov/vr/olympic-coast/makah-tribe/>

Olympic Coast welcomes new AmeriCorps Kennedy Cameron and Anna Marchand

Olympic Coast is excited to welcome Kennedy Cameron and Anna Marchand as the newest Washington Service Corps AmeriCorps members at Olympic Coast National Marine Sanctuary. They will be serving as education and stewardship specialists from September 2021 through July 2022.

Kennedy was born and raised in Port Angeles, Washington before moving to Seattle to attend the University of Washington. At the University of Washington, they completed a Bachelor of Science in Oceanography with a focus on education and ocean policy. Kennedy is very excited to take what they learned at school and the opportunity to apply it at home with Olympic Coast National Marine Sanctuary. When not at the beach, you can find Kennedy crocheting sea creatures and reading fantasy novels.

Anna is serving as a Washington Service Corps AmeriCorps member at Olympic Coast National Marine Sanctuary as Education and Stewardship Specialist. She was raised in Seattle and has lived in a variety of locations (and climates) from Scotland to Hawaii. Anna graduated from the University of Puget Sound with a Bachelor of Science in Biology and minors in English and Neuroscience. Before joining the sanctuary team, she served as an AmeriCorps member at Fort Worden Historical State Park in Port Townsend, Washington. She is passionate about making science accessible to everyone, and hopes to eventually pursue a career in writing. In her spare time, Anna is likely to be found hiking or playing Dungeons and Dragons with her friends.



Figure 18: Kennedy Cameron, 2021-2022 AmeriCorps Education and Stewardship Specialist



Figure 19: Kennedy Cameron (Top) and Anna Marchand (Bottom), 2021-2022 AmeriCorps Education and Stewardship Specialists

Ocean Science teacher workshop explores ocean benefits

Olympic Coast National Marine Sanctuary (OCNMS) education staff partnered with Pacific Education Institute (PEI) to conduct outdoor field investigations as a follow up to last summer’s virtual Healthy Ocean Healthy You workshop. Eleven 3rd – 5th grade teachers went into the rocky intertidal and sandy intertidal environments to investigate and explore habitats and organisms while learning from ocean industry specialists on economy and recreation. Habitat, economy, and recreation are all ocean benefits that participating teachers learned about through an Ocean Benefits performance task in the virtual summer 2020 workshop. The Ocean Benefits performance task is an English Language Arts

(ELA) exercise leading to a student written persuasive argument around an environmental topic using evidence gleaned from several sources including text, video, posters, and field investigations. Teachers practiced nature journaling techniques to use as a complement to field collected data, and discussed ways to use school yards and neighborhoods as alternative investigation locations as they continue to adapt to the dynamic Covid-19 environment.



Figure 20: Workshop participants observe, record, and explore marine habitats.

NOAA's Olympic Coast National Marine Sanctuary announces Ocean Guardian School projects in Washington and Oregon for 2021-2022 school year

NOAA's Olympic Coast National Marine Sanctuary announced that eight K-12 schools in Washington and Oregon were selected to participate in the Pacific Northwest Ocean Guardian School program to promote ocean conservation at the school or in their local community during 2021 - 2022 school year. Selected schools make this commitment by proposing and implementing a school or community-based conservation project. Funded schools receive grant amounts ranging from \$1,000 to \$4,000 per school depending on the project and overall available funding. Schools, particularly those located outside of the areas eligible for grants, may also participate without funding. All projects must support one of five project pathways: watershed restoration, marine debris, schoolyard garden/habitat, reduce/reuse/recycle/rot/refuse/rethink, or energy and ocean health. The 2021-2022 program participants are:

- Chimacum Elementary School (Chimacum, WA / \$1,000, Year 5)
- Quileute Tribal School (La Push, WA / \$3996, Year 1 extension)
- Olympic Peninsula Academy (Sequim, WA / \$3987, Year 2 extension)
- Salish Coast Elementary School (Port Townsend, WA / \$4000, Year 2)
- Simpson Elementary School (Aberdeen, WA / \$2985, Year 2)
- Stevens Middle School (Port Angeles, WA / \$3955, Year 1)
- Recess Outdoor Adventure School (Seal Rock, OR / \$3998, Year 1)
- Stevens Elementary School (Seattle, WA / unfunded, Year 1 extension).

NATURAL HISTORY

Pacific Northwest heatwave and extreme low tides prompt mass mortality event among intertidal shellfish in Salish Sea

The recent unprecedented heatwave in the Pacific Northwest, which for the inland Salish Sea was combined with extreme low tides during the hottest part of the day, has prompted mass mortality among shellfish species, including mussels, clams, and other valued shellfish. Throughout British Columbia and Washington State, scientists and shellfish operations have documented mass mortality among exposed shellfish that were unable to shelter from the extreme conditions and essentially roasted alive. Animals on shaded surfaces fared better and exhibited less mortality. Thanks to earlier high tides on the Olympic Coast and other Pacific coast beaches, intertidal animals on the Washington

coast were submerged and are believed to have survived the mortality event, as reported through personal communications with coastal shellfish experts who sampled razor clams during the heat event and since. OCNMS' annual intertidal monitoring efforts using quantitative protocols from the Multi-Agency Rocky Intertidal Network (MARINE) are planned for Olympic Coast sites in early August.

SANCTUARY PERMITTING

Issued Permits and Authorizations

MULTI-2021-009 Upwell Turtles

Project Title: Application of un-crewed aircraft systems (UAS) for surveying Western Pacific leatherbacks in critical foraging habitat off the Pacific Coast, USA

Permitted Activity: Low overflight at a minimum altitude of 10 meters above sea level (ASL) by un-crewed aircraft systems (UAS) for up to 6 flights per day for approximately 30 field days per year within NOAA regulated overflight zones in OCNMS, GFNMS, and MBNMS to conduct aerial surveys to obtain Pacific leatherback sea turtle estimates and information on habitat utilization.

Permit Duration: September 13, 2021 through December 31, 2025

Pending Permits and Amendments

OCNMS-2021-010 Global Diving and Salvage

Project Title: Survey and removal of sunken 48' Pacemaker motor vessel

Proposed Permitted Activity: Global Diving and Salvage has located the MV Unwind and are proposing to salvage the vessel by safely lifting the hull clear of the water to a deck barge while minimizing the potential for release of possible pollution.

Requested Permit Duration: Requested start date of July 1, 2021 through October 31, 2021

Comment: The vessel was located 5 miles offshore of La Push in 130 feet of water. We are hoping there will be a sufficient weather window to remove the vessel this calendar year

REGIONAL/NATIONAL MARINE SANCTUARY SYSTEM NEWS

NOAA Designates the Wisconsin Shipwreck Coast National Marine Sanctuary

The 962-square mile area of Lake Michigan, named Wisconsin Shipwreck Coast National Marine Sanctuary, was designated this month by NOAA with widespread support from a diverse coalition of organizations and individuals at local, state, regional, and national levels. The sanctuary will protect and celebrate the region's maritime cultural heritage while creating unique research, educational, recreational, and tourism opportunities. The collection of shipwrecks within Wisconsin Shipwreck Coast National Marine Sanctuary is considered a national treasure because of the excellent preservation and archaeological condition of the shipwrecks, their diverse roles in the development of the Midwest and the rest of the nation, and their location on a historically significant transportation corridor. An estimated 60 ships may yet to be discovered within the boundaries of the new sanctuary, in addition to the 36 known shipwreck sites. The designation will officially take effect following publication of the action in the [Federal Register](#) and a 45-day review by Congress and the governor of Wisconsin.

Boater Outreach for Whale Watching in Stellwagen Bank National Marine Sanctuary

Stellwagen Bank National Marine Sanctuary (SBNMS) staff recently conducted a successful Boater Outreach for Whale Watching mission (BOWW). The goal of BOWW is to provide on-the-water education about whales and safe whale watching practices to recreational boaters in the sanctuary. Recreational vessel strikes and unintentional or intentional harassment by recreational whale

watchers is a serious concern in SBNMS. Staff approach and greet recreational vessels, start a conversation about whales, whale behaviors and safe whale watching, give boaters the opportunity to ask questions, and share a packet of educational materials including the NOAA Fisheries Whale Watching Guidelines. BOWW has an immediate, direct positive impact on large whales in SBNMS by reducing the likelihood of a vessel strike and alleviating vessel pressure on whales through education and outreach. The BOWW team engaged with 21 recreational vessels and connected with 108 visitors. All interactions with boaters were very positive.

ONMS publishes Draft Environmental Impact Statement for proposed Lake Ontario sanctuary



On July 7, NOAA released for public comment a draft plan for a national marine sanctuary in eastern Lake Ontario and the Thousand Islands region of the St. Lawrence River. In partnership with the state of New York, the proposed sanctuary would manage a nationally significant collection of maritime heritage resources, including shipwrecks, and provide a national stage for promoting heritage tourism and recreation. Within the proposed boundary lie 64 known shipwrecks and one aircraft representing events spanning more than 200 years of our nation's history. This proposed sanctuary would offer opportunities to collaborate with Indigenous nations and tribes, and provide a diversity of perspectives

for appreciating North America's earliest cultures through education and outreach efforts. Establishing new national marine sanctuaries directly addresses Executive Order 14008, which calls for the U.S. to conserve at least 30 percent of U.S. lands and waters by 2030.

Part 1 of Blue Carbon in Marine Protected Areas released

NOAA's Office of National Marine Sanctuaries has released [Blue Carbon in Marine Protected Areas: Part 1, A Guide to Understanding and Increasing Protection of Blue Carbon](#), a report describing how blue carbon ecosystems help mitigate climate change by removing carbon dioxide from the atmosphere and transporting it into sediments or deep waters, where it can remain indefinitely if undisturbed. Accounting for these processes, and how they can help to achieve global carbon mitigation and emission reduction goals, is an emerging area of focus for marine protected area management. Led by Greater Farallones National Marine Sanctuary, with support from the Greater Farallones Association, this review is Part 1 of a series to inform and guide marine protected area (MPA) managers in the assessment, protection, and management of blue carbon habitats and processes. Part 2 of this series, scheduled for release in September, will focus on a case study for Greater Farallones National Marine Sanctuary.

Nancy Foster expedition concludes with great success

A team of scientists aboard the NOAA Ship *Nancy Foster* completed the first multipurpose research expedition at Gray's Reef National Marine Sanctuary since 2019. The team accomplished a significant amount in their nine days at sea, compiling 206 dives (97 hours of bottom time), completing 59 fish and habitat surveys, including 22 biodiversity hotspot sites in collaboration with NOAA Fisheries. Partners from Georgia Southern University surveyed macroalgae for distribution and abundance and collected samples for pressing and genetic analysis. Approximately 60 sediment samples and 30 water samples were collected for microplastics analysis. Lionfish, marine debris, sea turtle and vessel

sightings were logged as well. The *Nancy Foster* also mapped 31.3 km² of high-priority benthic habitat areas outside the Sanctuary at one-meter resolution to improve understanding of live-bottom habitats in the South Atlantic Bight and fill gaps in mapping the U.S. EEZ.

Tagging White Sharks in Stellwagen Bank National Marine Sanctuary

<https://sanctuaries.noaa.gov/earthisblue/wk330-white-sharks-scavenging.html>

Stellwagen Bank National Marine sanctuary (SBNMS) scientists, along with Massachusetts Division of Marine Fisheries and the University of Massachusetts Amherst recently completed the tagging of five great white sharks, the first to be tagged in the sanctuary. The sharks were feeding on the carcass of a deceased 1.5-year old humpback whale. The feeding presented an unusual opportunity, and allowed scientists to tag the sharks with an acoustic tag that emits an individual-specific coded signal each 60-100 seconds. The signal can be picked up when a shark passes within a few hundred meters of the nearly 200 receivers spaced throughout coastal Massachusetts waters.



Figure 21: White shark scavenging humpback whale carcass

Additional receivers exist throughout the eastern seaboard of the US and Canada. The tags have a life-span of approximately 10 years and will provide a wealth of data on the movement of these hard to study apex predators. Information on top predators such as white sharks is essential to understanding predator/prey relationships, energy transfer and ecosystem function. NOAA and collaborators are investigating the cause of death for the humpback whale.

REGIONAL/NATIONAL MARINE SANCTUARY FOUNDATION NEWS

National Marine Sanctuary Foundation Applauds Introduction of Legislation to Restore and Protect Kelp Forests

<https://marinesanctuary.org/news/national-marine-sanctuary-foundation-applauds-introduction-of-legislation-to-restore-and-protect-kelp-forests/>

The National Marine Sanctuary Foundation is committed to supporting protection and restoration of kelp forests, including the Farallones Kelp Recovery Program that promotes national, regional, state, and local partnerships to advance kelp restoration, monitoring, research, and community engagement. Efforts to map kelp forest coverage and loss using drone technology, conduct large-scale urchin removals, and plant young kelp in cleared areas are ways we and our partners are working towards a healthy kelp forest ecosystem on the west coast.

Statement on the Passing of Senator Carl Levin

<https://marinesanctuary.org/news/statement-on-the-passing-of-sen-carl-levin/>

The National Marine Sanctuary Foundation expresses its deepest condolences on the passing of Sen. Carl Levin, a tireless champion of conservation and national marine sanctuaries, particularly his home-state Thunder Bay National Marine Sanctuary. He embraced the idea of sanctuaries as a means to protect his beloved Great Lakes, playing an integral part in building support for future sanctuaries, including Wisconsin Shipwreck Coast National Marine Sanctuary, which he saw designated last month, and the proposed Lake Ontario National Marine Sanctuary, currently in the designation process. Sen. Levin envisioned a network of connected Great Lakes national marine sanctuaries that celebrate both the region's brilliant natural and maritime heritage treasures and enhance educational opportunities and economic prosperity for lakeshore communities.

OCNMS Online

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

Visit our website at:

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

Comments and suggestions can be sent to:

jacqueline.laverdure@noaa.gov.

Follow us on Facebook and Twitter!



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



<https://twitter.com/olympiccoast>

Ocean-Related Websites

| | | |
|--|--|--|
| National Oceanic and Atmospheric Administration http://www.noaa.gov/ | National Data Buoy Center http://www.ndbc.noaa.gov/rmd.shtml | Washington's Ocean Resources http://www.ecy.wa.gov/programs/sea/ocean/index.html |
| National Ocean Service http://oceanservice.noaa.gov/ | NOAA Pacific Marine Environmental Laboratory http://www.pmel.noaa.gov/ | Northwest Association of Networked Ocean Observing Systems http://www.nanoos.org/ |
| Office of National Marine Sanctuaries http://sanctuaries.noaa.gov/ | CoastWatch – West Coast Regional Node http://coastwatch.pfel.noaa.gov/ | Office of National Marine Sanctuaries – Earth is Blue https://sanctuaries.noaa.gov/earthisblue.html |
| NOAA Ocean Explorer http://oceanexplorer.noaa.gov/ | NOAA Marine Debris Program http://marinedebris.noaa.gov/ | National Marine Sanctuary Foundation https://marinesanctuary.org/ |

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/welcome.html>

OFFICE OF NATIONAL MARINE SANCTUARIES (ONMS)

Olympic Coast National Marine Sanctuary is one of the marine protected areas in the National Marine Sanctuary System encompassing more than 600,000 square miles of marine and Great Lakes waters from Washington state to the Florida Keys and from Lake Huron to American Samoa. The system includes 14 national marine sanctuaries 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

Kevin Grant – Deputy Superintendent for Operations & Administration

George Galasso – Deputy Superintendent for Policy & Programs

Anna Hallingstad - NOAA Corps Officer, Vessel Operations Coordinator

Jenny Waddell – Research Coordinator

Katie Wrubel – Resource Specialist

Marshall Stein – Lead Vessel Captain

Kathy Hough – Survey Technician

Chris Butler-Minor – Community Engagement Specialist

Jacqueline Laverdure – Education & Outreach Coordinator

Nicole Harris – Education Specialist

Robert Rountree – Visitor Services Specialist

Carey Floyd – Graphic & Web Designer

Kennedy Cameron – Washington Service Corps AmeriCorps member Education and Stewardship Specialist

Anna Marchand – Washington Service Corps AmeriCorps member Education and Stewardship Specialist

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

