



OLYMPIC COAST NATIONAL MARINE SANCTUARY

A Report for Sanctuary Advisory Council Members Reporting Period: Oct 1, 2020 – Jan 8, 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

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TREATY TRUST RESPONSIBILITIES

Olympic Coast National Marine Sanctuary Advisory Council and Intergovernmental Policy Council share priorities

In November 2020 Olympic Coast National Marine Sanctuary (OCNMS) Sanctuary Advisory Council (SAC) met with the Intergovernmental Policy Council (IPC) to review Office of National Marine Sanctuaries 2021 Key Priorities and 50th Anniversary planning; discuss IPC priorities, updates and areas of interest; SAC priorities, updates and areas of interest; OCNMS climate profile and planning; and potential areas of common interest between IPC and SAC.

COLLABORATIVE AND COORDINATED MANAGEMENT

Automatic Identification System (AIS) network used to investigate maritime safety concerns

Two incidents in Olympic Coast National Marine Sanctuary were researched last week. In one case, a bulk carrier was observed seven nautical miles off the coast in the southern part of the sanctuary. The vessel lingered off the coast for several days while coordinating with the Grays Harbor Pilot for passage into port. In the second case, several non-vessel Automatic Identification System (AIS) transponders were observed in, or adjacent, to the sanctuary's outer boundary. These were identified as non-FCC compliant AIS "net buoys" used in illegally marking fishing gear. Both of these situations were of concern from a maritime safety perspective. Large commercial vessels holding station close to the Olympic Coast is a concern due to the limited amount of time that would be available to respond to a loss of power or steerage. Marking multiple pieces of fishing gear with AIS gear causes confusion with offshore navigation and is counter to the purpose of the AIS network. These efforts were assisted by the Marine Exchange of Puget Sound, US Coast Guard, and NOAA Office of Law enforcement.

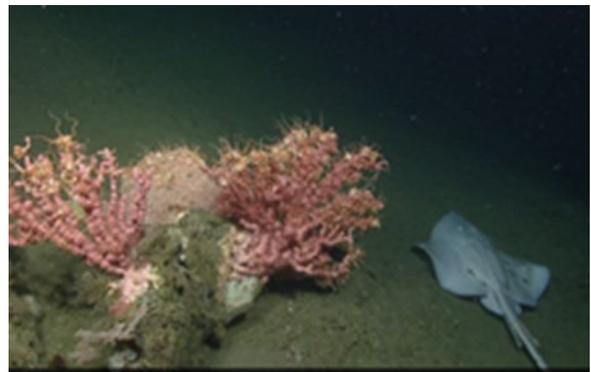
U. S. Navy and NOAA Fisheries consult with Olympic Coast National Marine Sanctuary

In accordance with requirements in section 304(d) of the National Marine Sanctuary Act, the Navy and NOAA fisheries have concluded a consultation with Olympic Coast National Marine Sanctuary (sanctuary) on Navy Northwest Training and Testing (NWTT) activities and related incidental take authorizations under the Marine Mammal Protection Act (MMPA). The sanctuary reviewed a sanctuary resource statement provided by the agencies and provided three recommended alternatives to minimize injury and to protect sanctuary resources.

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

Corals, sponges, seeps and space rocks delight viewers during E/V *Nautilus* expedition

The magic of ‘telepresence’ transported scientists and viewers alike to a deep sea world where a variety of habitats and resources sparked the imaginations of viewers across the globe, thanks to close collaboration between the Ocean Exploration Trust, Olympic Coast National Marine Sanctuary (OCNMS), Oregon State University, and NASA during a 12-day cruise on the Exploration Vessel *Nautilus* in September. Despite some challenging weather, the team was able to complete nine remotely operated vehicle dives in and around Quinault Canyon and Grays Canyon on the



Washington coast, and collect bathymetric, sidescan, and other seafloor mapping data for key parts of the Biogenic 2 Essential Fish Habitat area, one of several areas that was designated for protection in 2006 by the Pacific Fishery Management Council. Under permit from OCNMS, the team collected 149 samples during the mission, including sediment push cores, water samples for eDNA analysis, methane seep associated organisms, and deep sea corals and sponges, many of which were collected outside the sanctuary. Highlight reels from the mission are available at: <https://nautiluslive.org/cruise/na121>.

NOAA Marine Debris hosts Washington Marine Debris Action Plan update workshop

Olympic Coast National Marine Sanctuary staff participated in the Washington Marine Debris Action Plan (WA MDAP) update workshop hosted by NOAA Marine Debris Program. The all-virtual two-day meeting brought together partners from around Washington state to assess the strategic progress in preventing and reducing marine debris throughout Washington. MDAPs provide a strategic framework for partners across a specific state or region to address the problem of marine debris. The plan focuses on four tracks for marine debris mitigation: prevention, removal, monitoring, and coordination. Community updates were provided by lead organizations from several actions outlined in the WA MDAP over the last two years. These updates were followed by breakout groups focusing on Education and Outreach; Citizen Science and Monitoring; Aquaculture; Policy and Legislation; and Overcoming barriers to Marine debris success. Several working groups were established to meet over the next year focusing on direct actions that came out of the workshop. Annual meetings for updates will increase effectiveness.

NOAA Ship *Fairweather* surveys in Makah Usual & Accustomed Area

The NOAA Ship *Fairweather* conducted survey operations in the Strait of Juan de Fuca from October 24, 2020 to November 30, 2020, including a small area of Olympic Coast National Marine Sanctuary. The entire survey was within the Makah Usual and Accustomed Fishing Area. Sanctuary staff assisted our Office of Coast Survey colleagues with providing information on the survey to the Makah Tribe, a federally recognized tribe with treaty protected rights in the Strait and adjacent offshore waters.

IMPROVE OCEAN LITERACY

Ocean Guardian School Program celebrates student achievements

Ocean Guardian School Program celebrated the successes of 2019-20 programming by awarding six schools with official Ocean School Program status and banners, including Blue Heron School which is the first and only school to date to achieve Year 5 recognition. 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. The following

schools were recognized for their work in 2019-20: Year 5 - Blue Heron School (Port Townsend, WA); Year 4 - Siuslaw Middle School (Florence, OR) and Warrenton Prep (Warrenton, OR); Year 3 - Chimacum Elementary School (Chimacum, WA); and Year 1 - Olympic Peninsula Academy (Sequim, WA), Salish Coast Elementary (Port Townsend, WA). Nine schools were selected to participate in the Pacific Northwest 2020-21 Ocean Guardian School Program, including Chimacum Elementary School (Chimacum, WA), North Bend Middle School (North Bend, OR), Olympic Peninsula Academy (Sequim, WA), Quileute Tribal School (La Push, WA), Salish Coast Elementary School (Port Townsend, WA), Simpson Elementary School (Montesano, WA), Siuslaw Middle School (Florence, OR), Stevens Elementary School (Seattle, WA), and Warrenton Prep (Warrenton, OR).



Pacific Northwest B-WET 2021 Notice of Funding Opportunity announced

NOAA's Olympic Coast National Marine Sanctuary is seeking proposals under the Pacific Northwest Bay Watershed Education and Training (PNW B-WET) program. The PNW B-WET program is an environmental education program that supports locally relevant, authentic experiential learning in the K-12 environment. Funded projects provide Meaningful Watershed Educational Experiences (MWEEs) for students, related professional development for teachers, and help to support regional education and environmental priorities in the Pacific Northwest. The primary delivery is through competitive grants. This year, the PNW B-WET Notice of Funding Opportunity is modified to reflect the significant impact COVID-19 has had on the ability of environmental education providers to engage with schools and therefore meaningfully reach students and teachers. The resulting loss of programs will have lasting repercussions on the targeted audiences of these programs and to the institutions who provide these services. The NOAA B-WET program recognizes that support is needed to bridge this gap that has been created by the loss of revenue, the cancellation of programs, and the inequities that are being exacerbated by the pandemic. As a major contributor to environmental education programs, the NOAA B-

WET program is committed to responding to the immediate needs of this pandemic and supporting these critical institutions that provide meaningful experiences for youth at all levels. The full FY 2021 Notice of Funding Opportunity can be found at [Grants.gov](https://www.grants.gov) under funding opportunity number NOAA-NOS-ONMS-2021-2006747.

OCNMS AmeriCorps team up with CoastSavers to REthink holiday season waste

Olympic Coast National Marine Sanctuary Washington Service Corps AmeriCorps service members Holly Keedy and Cheyenne Palmo teamed up with Washington CoastSavers to contribute to the REthink series - a series of videos highlighting sustainable activities that reduce and reuse plastics and other “waste” from around our homes. As an extension of the initial REthink series, launched for Earth Day 2020, CoastSavers created a Holiday/Winter REthink segment, highlighting alternative, more sustainable ways to celebrate the holiday season. Using materials found around the neighborhood and string Cheyenne crafted her own wreath. Holly decorated holiday cards using moss and algae she found near her home and showcased the ease of using recycled paper materials, such as paper grocery bags, to wrap gifts. The team plan to continue to contribute to the REthink series for the remainder of their service term. You can watch the REthink videos here: <https://www.coastsavers.org/index.php/rethink-2020-holiday-season-edition/>

Quileute Tribal School students speak out about their Ocean Guardian School project

The National Marine Sanctuary Foundation featured a Q&A with Quileute Tribal School Ocean Guardian School Program. The Quileute Tribal School, located in La Push, WA, is recognized as one of NOAA’s Pacific Northwest Ocean Guardian Schools. The Ocean Guardian School program provides small grants to K-12 schools around the United States to carry out school and community-based stewardship projects that protect and conserve their local watersheds and the ocean including special ocean areas like national marine sanctuaries. Learn more about Quileute Tribal School’s Ocean Guardian School project through this question and answer dialogue at <https://marinesanctuary.org/blog/qa-with-quileute-tribal-school-students-on-being-ocean-guardians>



Planting trees and native plants as part of the Ocean Guardian project pre-COVID 19. From left to right: Kevin Ryan, Alice Ryan (science teacher) Chenoa Black, and Ruby Sheriff. Photo: Ben Nye/Quileute Tribal School



Prepping plants for planting. From left to right: Haily Payne, Maggie Macidonio, Liz Soto. Photo: Alice Ryan/Quileute Tribal School.

Students explore Ocean Acidification at home

Olympic Coast National Marine Sanctuary Washington Service Corps AmeriCorps service members Holly Keedy and Cheyenne Palmo partnered with Feiro Marine Life Center staff to provide 1,300 Ocean Acidification (OA) resource kits to 4th and 5th grade students in Port

Angeles and Sequim school districts as part of the B-WET funded NOW (North Olympic Watershed) Science program. NOW Science brings students together to conduct Meaningful Watershed Educational Experiences (MWEEs) focused on watershed and salmon health. Throughout the MWEE, students examine human impacts to the watershed including storm water pollution and ocean acidification. Due to new social distancing guidelines related to COVID-19, the program was reformatted for at-home learning, including take-home OA experiment kits. Each kit has all the supplies needed to complete the educational activities at home including color printed instructions, pH indicator, vinegar, antacids, baking soda, paper straws, and cups. Program partners for this effort include Feiro Marine Life Center, Dungeness River Audubon Center partnership (which includes the Jamestown S’Klallam Tribe and Olympic Peninsula Audubon Society), Olympic Coast National Marine Sanctuary, and Olympic National Park.



Olympic Coast National Marine Sanctuary recognizes 2020 Volunteer of the Year!



Olympic Coast National Marine Sanctuary (OCNMS) gratefully recognized their 2020 Volunteer of the Year, Dr. Jan Newton. Among her many contributions to OCNMS, she has been a vocal champion of the designation of the sanctuary as a sentinel site for ocean acidification (OASes), which was achieved in late 2019. Her contributions, along with other site selected volunteers were highlighted in a recent news story as our way of saying thank you to these extraordinary people who take time out of their lives for the betterment of America’s underwater parks.

Learn more at <https://sanctuaries.noaa.gov/news/dec20/2020-volunteers-of-the-year.html>

Olympic Coast National Marine Sanctuary works with partners to understand their sustainable tourism needs

Olympic Coast National Marine Sanctuary (OCNMS) Community Engagement Specialist presented an overview of the findings from the recent survey designed to assess sustainable tourism needs for businesses on the Olympic Peninsula. Responses from participating Olympic Peninsula Tourism Commission partners spanned the geographic range of the peninsula and a broad array of businesses. Key takeaways indicate wildlife viewing and outdoor recreation opportunities ranked high in perceived benefits of having a marine sanctuary nearby, however more could be done to increase visitor awareness of the sanctuary. Suggested products and/or activities OCNMS could provide highlighted by the survey include interactive outdoor activities, printed and digital information on where to go see particular animals or plants for self-guided tours, outdoor signage to interpret, local natural and culture resources, and opportunities to engage with sanctuary experts. More than 30% of respondents would be interested in a free energy/carbon footprint analysis with another 40% possibly interested. Habitat disturbance and trash were frequently cited concerns. Partners indicated they would be interested in a one-day workshop or pre-

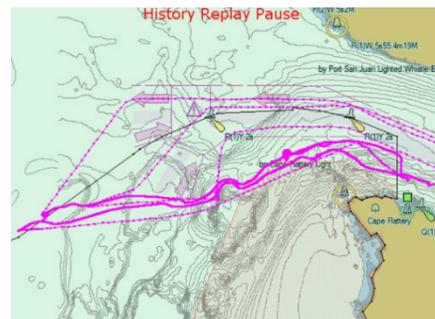


recorded presentations which would allow them to gain a clearer understanding of what sustainable tourism means, understanding opportunities for nature-based tourism, and natural history of marine life in the sanctuary.

CONSERVE NATURAL RESOURCES IN THE SANCTUARY

Pacific Crossing, Ltd. completes required fiber optic cable compliance survey

Under the requirements of a 2005 Olympic Coast National Marine Sanctuary (sanctuary) Authorization/Special Use Permit, Pacific Crossing Landing Corporation contracted with Global Marine to complete a compliance survey of two fiber optic cables that lay within the sanctuary. During October 5 through October 26, the Cable Vessel *Cable Innovator* conducted a 100% remotely operated vehicle survey of 65km of cable in the sanctuary. Originally installed in 1999-2000, with sanctuary segments reinstalled in 2006, the Pacific Crossing PC-1 network, is a ring connecting Washington state to Japan, Japan to California, and back to Washington. Sanctuary permit conditions require monitoring for both the condition of the cable and the recovery of the seafloor from the installation. A pending report will compare the as-laid with the current condition cable burial to determine permit compliance. Areas of non-compliance, with exposed and suspended cables are known to exist.



Virtual oil spill drill in shared waters

Sanctuary staff observed the CANUSPAC 2020 Virtual Exercise. This was a two-day exercise of the Canada - US Joint Marine Pollution Contingency Plan which documents how the United States Coast Guard - District 13 and the Canadian Coast Guard - Western Region would work together during a transboundary oil spill. The drill included discussions about the International Coordination Officer role, the Environmental Unit, lessons learned from previous CANUSPACs, information sharing, and indigenous and tribal engagement. The spill scenario included a tanker that loses propulsion in Canadian waters north of Port Angeles, drifts towards shore and is hit by a vessel exiting the traffic lanes. The drill trajectory had the oil impact the U. S. side of the strait, heading toward Olympic Coast National Marine Sanctuary.

NATURAL HISTORY

Harmful algal bloom extends Washington coast shellfish harvest closure to January 2021

High sea surface temperatures across the northeast Pacific have contributed to the presence of high levels of domoic acid in water samples from the Washington coast, prompting state and tribal managers to extend closure of the razor clam harvest for another month in an effort to protect human health. This necessary precaution has produced negative cascading effects within coastal communities as described in a recent NPR story, and the move is especially vexing because razor clams are experiencing a population boom higher than anything recorded during the past three decades. Learn more about it through the voices of tribal and state managers, Joe Schumacker and Dan Ayers, both of whom serve on the Sanctuary Advisory Council for Olympic Coast National Marine Sanctuary. <https://www.knkx.org/post/economy-traditions-suffer-toxic-algae-shuts-down-clamming-washington-coast>

Domoic acid levels surge off Washington Coast

The coastal waters of Olympic Coast National Marine Sanctuary abound with shelled delicacies such as Dungeness crab and razor clams. Both species contribute significantly to local and state economies. Both species can accumulate marine neurotoxins such as domoic acid without ill effect, however humans often experience severely harmful or even fatal outcomes if infected shellfish are consumed. Washington State Department of Fish and Wildlife (WDFW) closed Washington ocean beaches to razor clam harvest for the months of November and December 2020 when testing indicated domoic acid levels exceeded the state thresholds of 20ppm. Then on Dec. 28, 2020, WDFW announced expanded harvest closures over a 70 km stretch between Point Chehalis (south of the sanctuary) to the Queets River due to unsafe elevated levels of domoic acid in crab. Sustenance, recreational, and commercial harvesters are impacted by these higher toxin levels. The Quinault Indian Tribe has voluntarily recalled nearly 29 tons of live and un-eviscerated Dungeness crab harvested in the previous week. Local tourism providers are also facing reduced visitor counts as a result of the closures. <https://wdfw.wa.gov/news/central-washington-coast-grays-harbor-willapa-bay-closed-crab-fishing-due-marine-toxins>

SANCTUARY PERMITTING

Issued Permits and Authorizations

OCNMS-2005-013-A4 Kurt Johnson, PC Landing Corp

Project Title: Operation, Maintenance, Reinstallation and Removal of PC-1 Fiber Optic Cables in the Olympic Coast National Marine Sanctuary

Proposed Permitted Activity: Continued authorization for the ongoing placement, operation and maintenance of two submarine cables.

Requested Permit Duration: Requested start date of November 4, 2020 through November 4, 2025.

Comment: The current permit for PCL expires in 2025. A burial compliance was completed in December 2020 and seabed recovery survey is being planned for 2021.

OCNMS-2020-008 Daniel Stabbert, Pacific Survey Group LLC

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

Proposed Permitted Activity: ROV and AUV surveys focused on the Juan de Fuca Canyon, potential crush car locations, and the meteorite fall site.

Requested Permit Duration: Requested start date of November 1, 2020 through November 1, 2021.

Comment: The primary purpose of this season's mission is to test bathymetry and bottom imagery technology through HISAS Sonar, LIDAR, Magentometer, and high-resolution video and photography.

Pending Permits and Amendments

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

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

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

Requested Permit Duration: Requested start date of May 1, 2021 through August 31, 2021.

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

REGIONAL/NATIONAL MARINE SANCTUARY SYSTEM NEWS

NOAA's Office of National Marine Sanctuaries releases annual *Earth is Blue Magazine* <https://sanctuaries.noaa.gov/magazine/5/>

NOAA's Office of National Marine Sanctuaries released an online edition of the 2020 *Earth is Blue Magazine*, the fifth volume of the annual publication. Through vivid images and engaging articles, the magazine showcases special ocean and Great Lakes places of national marine sanctuaries and marine national monuments to increase public awareness and support. Featured stories highlight heritage, exploration, recreation, science, and life within these marine protected areas. The magazine is part of the Earth is Blue campaign created to inspire the public to help care for our ocean and Great Lakes. The campaign also includes a daily photo and weekly videos shared through ONMS social media platforms. <https://sanctuaries.noaa.gov/earthisblue.html>.

MPA Center hosts webinar covering the importance of connectivity to MPAs and highlighting recent reports

<https://nmsmarineprotectedareas.blob.core.windows.net/marineprotectedareas-prod/media/docs/2020-ecological-connectivity-for-mpas.pdf>

On October 14, the MPA Center, in partnership with OCTO; the Center for Large Landscape Conservation; and the IUCN WCPA Connectivity Conservation Specialist Group, hosted a webinar entitled "Connecting Our Blue Planet: Building Ecologically Connected Marine Protected Area Networks". The webinar was presented by Gary Tabor of IUCN, J. Wilson White of Oregon State University, Barbara J. Lausche of Mote Marine Laboratory, and Zac Cannizzo of the MPA Center and covered the importance of ecological connectivity to MPAs and marine conservation. The webinar included a case study that included Channel Islands National Marine Sanctuary and highlighted the IUCN's "Guidelines for conserving connectivity through ecological networks and corridors" <https://portals.iucn.org/library/node/49061> and the MPA Center's new brief "Ecological Connectivity for Marine Protected Areas."

2020 winners of our annual *Get Into Your Sanctuary* photo contest!

Photographers submitted over 200 photos this year to four categories highlighting the diversity of your National Marine Sanctuary System. View winning photos at <https://sanctuaries.noaa.gov/earthisblue/photo-contest-winners-2020.html>

National Marine Sanctuaries featured in Television Series <https://intotheoutdoors.org/>

In partnership with the National Marine Sanctuary Foundation, the National Marine Sanctuary System was highlighted in a public and online streaming television series, *Into the Outdoors*. *Into the Outdoors* is a youth focused education network that creates educational video resources and accompanying lesson plans on earth science. The Emmy-winning television series is broadcast on 22 stations in seven states, online, and through social media. The television episode, titled "Into National Marine Sanctuaries", featured four "Stories From the Blue"

<https://sanctuaries.noaa.gov/stories/> segments, filmed and developed by NOAA's Office of National Marine Sanctuaries.

Hawaiian Islands Humpback Whale National Marine Sanctuary Humpback Whale Monitoring contributes to rare within season humpback whale fluke id match between Hawaii and Mexico wintering grounds

On April 6, 2018 the Hawaiian Islands Humpback Whale National Marine Sanctuary's Health and Risk Assessment program obtained the fluke identity of an adult male humpback whale in a competition group. Recently, Happywhale, a digital fluke catalog that uses AI to match individual humpback whale flukes, matched the animal to a sighting off of Guerrero, Mexico by the Whales of Guerrero, a nonprofit whale research organization in Mexico, on February 16 that same season. The rare sightings, just shy of 3,000nm straight-line distance apart and separated by 49 days, represents just one of two sightings of humpback whales on different breeding grounds within the same season in the North Pacific. The sightings support findings from Wave Glider missions lead by Jupiter Research Foundation and Whale Trust on the presence and possible migration of humpback whales between the Hawaii and Mexico breeding/calving grounds. The sanctuary has a Memorandum of Agreement with Happywhale and a large consortium of whale researchers to collaborate using the fluke IDs of humpback whales. The sanctuary has submitted thousands of fluke images, representing more than 1400 individuals, from its monitoring and research efforts. The sanctuary will collaborate with Whale Trust, Jupiter Research Foundation, Whales of Guerrero, and Happywhale to pursue a paper on this unique and rare finding.

State of Papahānaumokuākea Marine National Monument Report Released

<https://sanctuaries.noaa.gov/news/oct20/state-of-the-monument.html>

NOAA published a peer-reviewed report on the State of Papahānaumokuākea Marine National Monument (PMNM), jointly produced by the Co-Trustees of the monument (NOAA, U.S. Fish and Wildlife Service, Hawaii Department of Land and Natural Resources, and the Office of Hawaiian Affairs). The report provides a snapshot of status and trends of the physical environment, living resources, and historical and cultural archaeological resources, valuable information that will support future management planning, the identification of Monument research priorities, and decision making on permitted activities. This report will also prove useful to scientists and others studying phenomena such as regional or archipelagic climate change effects. It also provides a framework that can inform discussions among managers, researchers, communities, and stakeholders about preserving the integrity of PMNM.

Thunder Bay National Marine Sanctuary Assists with replacement of meteorological equipment

Thunder Bay National Marine Sanctuary (TBNMS) maritime archaeologist and vessel operator supported scientists from NOAA's Great Lakes Environmental Research Laboratory to replace the communications box at the Real-Time Meteorological Observation Station on Thunder Bay Island. The meteorological station provides critical wind speed, direction, and temperature data utilized by all mariners, including TBNMS. While there, he documented several known archaeological sites that date back to the Island's long history with the US Life Saving Service, US Lighthouse Service, and the



USCG. Of note is the historic US Life Saving Service boathouse where lifeboats were staged to respond to many shipwreck incidents in the area. The documentation efforts will inform regional restorative efforts, including the Thunder Bay Island Lighthouse Preservation Society

A Story of Diversity in Scientists and Coral at Flower Garden Banks National Marine Sanctuary

<https://sanctuaries.noaa.gov/news/oct20/changing-tides.html>

While exploring banks in the northwestern Gulf of Mexico in 2016, Flower Garden Banks National Marine Sanctuary researchers noted an unusual black coral occurring along a ridge line at Elvers Bank. In 2017, researchers collected several whole colonies of this coral, now identified as a new species, *Distichopathes hickersonae*, named for the sanctuary's research coordinator, Emma Hickerson. The collection and genetic characterization of this new species was supported by Team Black Coral – a group of undergraduate minority student researchers from Dr. Mercer Bruglers laboratory at City University New York. The sanctuary supports student opportunities, especially ones that support building a more diverse and inclusive workforce, and collaborates with Dr. Brugler to continue to provide ship time and bunk space on the cruises for him and his students. The discovery was published this year, accompanied by a news article released in October, "Changing Tides: Inspiring underrepresented minorities through ocean exploration and black coral discovery".

MPA Center Publishes Ocean Space Use Profiles

<https://marineprotectedareas.noaa.gov/media/docs/20201113-mpa-specialuse-final.pdf>

The MPA Center has published *Visualizing the Three-Dimensional Footprint of Ocean Uses: A Guide to Building and Applying Space Use Profiles for Ocean Management*. The report introduces a new framework to help ocean planners, managers, and stakeholders envision the full three-dimensional space requirements of different ocean uses, and to understand how their spatial footprints can create conflicts with other ocean uses in the same area. The space use profiles include a description of the use; space requirements across horizontal and vertical zones; the importance of and space occupied by the functional components of a use (e.g. people, vessels, anchors, moving gear and installed infrastructure); how uses can interfere with or exclude other uses; and other spatial constraints. This information was derived from a combination of public sources and expert advice from specialists, industry, scientists, and others familiar with the uses as part of a study for the Bureau of Ocean Energy Management.

Sanctuaries showcased at DEMA 2020

In partnership with the National Marine Sanctuary Foundation we participated in the 2020 virtual the "Diving Equipment & Marketing Association" trade show aka DEMA by hosting a virtual booth and hosting a DEMA sponsored webinar with Reef World. Twelve sanctuaries provided photos and content to showcase their sites as places to dive and explore!



Olympic Coast National Marine Sanctuary

You might be lucky enough to have an encounter with some of Olympic Coast National Marine Sanctuary's most charismatic residents - sea lions! It's important to give wildlife their space, but these curious creatures will often swim right up to divers...



Hawaiian Islands National Marine Sanctuary

Humpback whales travel to Hawaiian Islands Humpback Whale National Marine Sanctuary each winter to mate and give birth - the only place in the United States where they do so. This is one dive location that wildlife lovers just can't miss!...

Grow business productivity through better environmental practices

The demand for sustainable travel and adventure is growing. NOAA's Office of National Marine Sanctuaries and The Reef-World Foundation collaborated to bring viewers the latest intel in increasing their marketability while integrating environmental sustainability within their business. The session shared the 20+ years' experience of United Nations Environmental Programme (UNEP) and Reef-World's internationally operational Green Fins initiative and NOAA Sanctuaries' Blue Star Program - by sharing lessons learned and showcasing successes. Attendees heard from the leaders and industry participants on how to increase their bottom line while supporting environmental stewardship practices. Businesses and customers enjoy the benefits that come from lower environmental impact operations which include healthier marine life, higher retention of staff, and increased return customers.

Ocean Guardian Schools support national effort, 'Unwrap the Waves'

<https://marinelife.org/2020/09/30/unwrap-the-waves-2020/>

Each year in the U.S., more than 600 million pounds of candy are purchased for Halloween with the majority of candy wrappers ending up in landfills. 'Unwrap the Waves' is an annual initiative that works with Terracycle, a company that collects and recycles the wrappers, to bring greater awareness to the issue of holiday waste and single-use plastic with the help of community partners and schools. This year the collection/recycling competition was opened to schools beyond Florida, where the initiative was founded. Two of NOAA's Ocean Guardian Schools in participated in 'the competition. Oppe Elementary School, an Ocean Guardian School in Galveston, Texas and a first time participant collected a total of 9,498 candy wrappers - more than any other participating school in 2020. In total, this year's initiative collected more than 101,000 candy wrappers.

Sister Marine Sanctuaries in American Samoa and Palau

<https://sanctuaries.noaa.gov/news/dec20/tale-of-two-sanctuaries.html>

Two islands in the Pacific – American Samoa and Palau – sit nearly 4,000 miles apart, but are united by the rich ocean waters that surround them. In September, NOAA's Office of National Marine Sanctuaries signed a memorandum of understanding (MOU) with Palau International Coral Reef Center (PICRC), which honors this inherent connection and opens the door for international collaboration. Representatives from NOAA and Palau spoke at a virtual event announcing the agreement between the two countries' marine sanctuaries on December 15th.

Our favorite NOAA Education photos from 2020

<https://www.noaa.gov/education/photos-images/our-favorite-noaa-education-photos-from-2020>

2020 was the year we celebrated NOAA's 50th anniversary while also hunkering down and learning how to adapt to education in the time of COVID-19. Over the course of only a few weeks, NOAA educators across the nation had to pack up their hands-on demonstrations and find new ways to reach the public from behind a computer screen. Educators from across the agency share their most exciting recent photos – plus a "blast from the past" in honor of NOAA's 50th.

Channel Islands National Marine Sanctuary Partners with BOEM on New Ocean Alert Mobile App

Ocean Alert is a new mobile data collection app for sightings of marine megafauna, including sea turtles, sharks, and whales which supports citizen science engagement in national marine sanctuaries. Community scientists can use Ocean Alert to upload images and other sightings information via the app to provide data to Flukebook and other repositories for resource

managers. Federal agencies can also disseminate information, such as speed restrictions to boaters, making dynamic ocean management a reality. The app is an outgrowth of the pioneering Whale Alert app developed at Stellwagen Bank National Marine Sanctuary and is also part of the Marine Mammal Passive Acoustics and Spatial Ecology (MAPS) Project - a cooperative agreement between BOEM and the University of North Carolina Wilmington.

REGIONAL/NATIONAL MARINE SANCTUARY FOUNDATION NEWS

National Marine Sanctuary Foundation urges policymakers to keep effective measures protecting Pacific marine monuments

<https://marinesanctuary.org/news/national-marine-sanctuary-foundation-urges-policymakers-to-keep-effective-measures-protecting-pacific-marine-monuments/>

Following the release of the 2020 State of the Monument report, which showed that Papahānaumokuākea Marine National Monument benefits from limits on human impact but remains a fragile ecosystem, the National Marine Sanctuary Foundation and hundreds of supporters urged policymakers to keep in place restrictions on commercial fishing within Pacific marine monuments.

Coral restoration project at Eastern Dry Rocks awarded \$5 million grant

<https://marinesanctuary.org/news/coral-restoration-project-at-eastern-dry-rocks-awarded-5-million-grant/>

The National Fish and Wildlife Foundation (NFWF) and NOAA awarded a grant of \$5 million through the National Coastal Resilience Fund to the National Marine Sanctuary Foundation in partnership with Mote Marine Laboratory & Aquarium and Coral Restoration Foundation™ to restore Eastern Dry Rocks, one of seven iconic reefs located in the Florida Keys National Marine Sanctuary.

National Marine Sanctuary Foundation welcomes six new members to its Board of Trustees

<https://marinesanctuary.org/news/national-marine-sanctuary-foundation-welcomes-six-new-members-to-its-board-of-trustees/>

“It is a pleasure to welcome the newest Trustees to the Board of the National Marine Sanctuary Foundation. They all bring valuable perspective and passion for ocean and Great Lakes conversation to the Board,” said James Hnat, Chair of the National Marine Sanctuary Foundation Board of Trustees. “We’re fortunate to have their breadth of knowledge to help guide this organization and I am excited to work with all of them to protect America’s treasured underwater places.

FY21 omnibus appropriations bill includes support for National Marine Sanctuaries and coral restoration

<https://marinesanctuary.org/news/fy21-omnibus-appropriations-bill-includes-support-for-national-marine-sanctuaries-and-coral-restoration/>

Congress passed omnibus appropriations legislation to fund the government for Fiscal Year 2021 and provide economic relief to families, businesses, and communities due to COVID-19. The bill includes a total of \$59.5 million for critical ocean conservation and education work within our national marine sanctuaries and \$8.5 million for innovative coral restoration projects, including Mission: Iconic Reefs, an unprecedented effort to reverse the decades-long decline of one of America’s national treasures, the Florida Reef Tract.

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 Data Buoy Center http://www.ndbc.noaa.gov/rmd.shtml	Washington's Ocean Resources http://www.ecy.wa.gov/programs/sea/ocean/index.html
National Ocean Service http://oceanservice.noaa.gov/	NOAA Pacific Marine Environmental Laboratory http://www.pmel.noaa.gov/	Northwest Association of Networked Ocean Observing Systems http://www.nanoos.org/
Office of National Marine Sanctuaries http://sanctuaries.noaa.gov/	CoastWatch – West Coast Regional Node http://coastwatch.pfel.noaa.gov/	NOAA Online Media Library http://sanctuaries.noaa.gov/photos
NOAA Ocean Explorer http://oceanexplorer.noaa.gov/	NOAA Marine Debris Program http://marinedebris.noaa.gov/	Encyclopedia of National Marine Sanctuaries http://www8.nos.noaa.gov/onms/park/

Happy holidays from Olympic Coast!

Enjoy our holiday video (no singing!) at https://youtu.be/2_OTdggZQMl



OLYMPIC COAST NATIONAL MARINE SANCTUARY

LEARN MORE ABOUT YOUR SANCTUARY

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

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

OFFICE OF NATIONAL MARINE SANCTUARIES (ONMS)

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

Visit the ONMS website at:
<http://sanctuaries.noaa.gov/>.

Get Involved!

To learn how to get involved in the sanctuary visit:
<http://olympiccoast.noaa.gov/involved/welcome.html>

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