

WEST COAST REGIONAL PRIORITIES

Krill Harvest Prohibited along the West Coast

In August 2009, NOAA published a regulation prohibiting the harvesting of krill (small shrimp-like crustaceans key to the marine food web) in the Exclusive Economic Zone (EEZ) off the coasts of California, Oregon and Washington. While the three states currently have regulations prohibiting the harvesting of krill within three miles of their coastlines, there was no similar federal restriction within the EEZ, which stretches from three to 200 miles from the coast.

The krill prohibition was adopted as Amendment 12 to the Coastal Pelagic Species Fishery Management Plan, which was developed by the Pacific Fishery Management Council (PFMC) under the Magnuson-Stevens Fishery Conservation and Management Act. The krill harvest prohibition was originally proposed to the PFMC and NOAA Fisheries Service by the West Coast Region of the NOAA Office of National Marine Sanctuaries. It reflects strong teamwork within NOAA and a commitment to addressing the issues raised by the PFMC and the sanctuary advisory councils for national marine sanctuaries in California. The rule preserves key ecological relationships in the California Current ecosystem, which includes five national marine sanctuaries.

NOAA Partners Test New Research Vessel *Okeanos Explorer*

The Office of National Marine Sanctuaries' West Coast Regional Office has been assisting NOAA's Office of Ocean Exploration and Research in developing exploration targets of mutual interest in sanctuary waters to field test the new NOAA research ship *Okeanos Explorer* as part of general shakedown of the vessel. This effort culminated in July 2009 with a multi-day multibeam sonar mapping field trial off the central and northern California coast, during which researchers mapped approximately 2,200 square miles of the seafloor at high resolutions. Areas mapped included the deep portions of Cordell Bank and sections of Gulf of the Farallones and northern Monterey Bay national marine sanctuaries. In addition, areas adjacent to Cordell Bank and Gulf of the Farallones national marine sanctuaries were mapped. The location of the World War II-era ship USS *Independence* was also confirmed during this mission.

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2009 ACCOMPLISHMENTS



Olympic Coast National Marine Sanctuary spans 3,310 square miles of marine waters off the rugged Olympic Peninsula. The sanctuary is home to many marine mammals and seabirds, diverse populations of kelp and intertidal algae, and thriving invertebrate communities. This sanctuary is also rich in cultural resources, with more than 180 documented historical shipwrecks and the vibrant contemporary cultures of the Makah, Quinalt, Hoh and Quilteute Nations. Established July 16, 1994.



Collaboration in Management Plan Review: A New Model in Ocean Governance

Olympic Coast National Marine Sanctuary staff continued to make progress for the second year of review and revision of the sanctuary's 1994 management plan. Last year's scoping process brought over 1,500 comments from the public. In 2009, staff worked closely with the sanctuary advisory council and Intergovernmental Policy Council to prioritize issues and form goals for the new plan. Staff also hosted workshops and working groups to clarify issues and priorities and developed strategies that can be incorporated into the new plan.



Sanctuary a Catalyst in Regional Education

The NOAA Office of Education selected Olympic Coast National Marine Sanctuary to host to the newly created Pacific Northwest Bay-Watershed Education and Training (B-WET) Grants Program. B-WET programs in Chesapeake Bay, Hawai'i and California furnish funds for education organizations that engage students in field-based learning opportunities. Experiences in California and the Pacific Northwest are focused on sanctuary information and ocean literacy concepts, and provide opportunities for a direct connection to the sanctuary. Through the B-WET expansion into the Pacific Northwest, sanctuary staff are able to serve partner organizations, teachers and students throughout Oregon and Washington and improve the delivery of NOAA education products. During its first two years, Pacific Northwest B-WET grants have totaled more than \$1.2 million.



Understanding Dynamic Ocean Events: Seabird Die-offs and Plankton Blooms

In early September 2009, rough seas and unusually high densities of one species of plankton wreaked havoc on sanctuary seabird populations. The combination caused the deaths of thousands of birds including Western Grebes and Common Murres, listed as "species of concern," that live in near-shore zones of the sanctuary. Sanctuary staff and volunteers from the Coastal Observation and Seabird Survey Team surveyed beaches and documented hundreds of seabird mortalities, as well as the occurrence of soap-like foam created by the plankton breaking apart during intense storm and surf conditions. As the scale and complexity of the event became apparent, sanctuary staff, along with tribal, state, and federal resource agencies, coordinated data collection on water and bird samples, monitored oceanographic conditions, conducted overflights and organized bird rescue and rehabilitation efforts.

Ocean Acidification: Mobilizing for Monitoring and Research

Ocean acidification is the gradual shift in seawater acidity due to increasing levels of carbon dioxide absorbed in the ocean. As new information emerges, sanctuary researchers and their colleagues have mobilized to better document and understand trends in ocean chemistry and potential effects to marine organisms within the sanctuary, particularly species with calcium carbonate shells and skeletal structures. The sanctuary is well-situated to serve as a "sentinel" of changes in ocean processes.



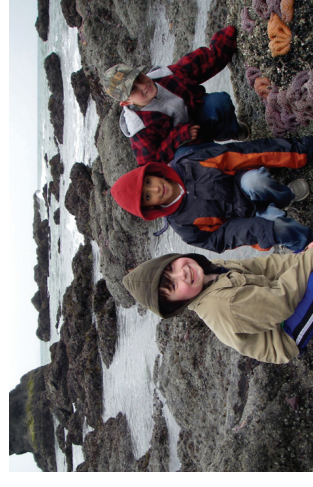
Deepwater Corals Featured in New Exhibit

In an effort to further educate the public on deep coral communities found during recent research expeditions, the sanctuary developed "Secrets of the Deep," an exhibit at the Olympic Coast Discovery Center featuring models of coldwater coral communities. The project challenged exhibit fabricators at BIOS, LLC, the exhibit contractor, to portray coral and rockfish species that have not been modeled for exhibits before, and therefore have not been seen by visitors to aquaria or science museums.



Local Partners Promote Hands-on Learning

Olympic Coast National Marine Sanctuary educators have increased their reach into local schools on the northern Olympic Peninsula through a partnership between the Olympic Coast Discovery Center and the Arthur D. Feiro Marine Life Center in Port Angeles, Wash. located adjacent to each other, the facilities offer complementary experiences for visiting K-12 students. Through the new program, over 1,200 students have studied marine biology, using activities developed around ocean literacy principles. The partnership continues to expand to include the Olympic Park Institute, the Clallam County Marine Resources Committee and several regional private foundations.



Seattle Aquarium Helps Promote Ocean Literacy

Olympic Coast National Marine Sanctuary continued its partnership with the Seattle Aquarium in 2009 to bring ocean science to elementary students in rural communities of the Olympic Coast. Students from the Quinalt, Quileute, Hoh and Makah Indian reservations have visited the Arthur Feiro Marine Life Center, Olympic Coast Discovery Center and Seattle Aquarium, in addition to studying marine biology on their local beaches. The project, funded by a NOAA Environmental Literacy Grant, is in its third year.



Sanctuary Collaborates on Oceanographic Study

Sanctuary research staff contributed to a groundbreaking report, "An Oceanographic Characterization of the Olympic Coast National Marine Sanctuary and Pacific Northwest," produced in collaboration with NOAA's National Centers for Coastal Ocean Science. The report combined data from remote sensing and other sources to create an overview of physical and oceanographic conditions in the sanctuary. This information provides a foundation for ongoing decision-making necessary for managing sanctuary resources. It also refines research questions and priorities and engages research partners in understanding ongoing trends, as well as conditions that emerge from climate change, ocean acidification and other processes.