

Olympic Coast Ocean Acidification Sentinel Site

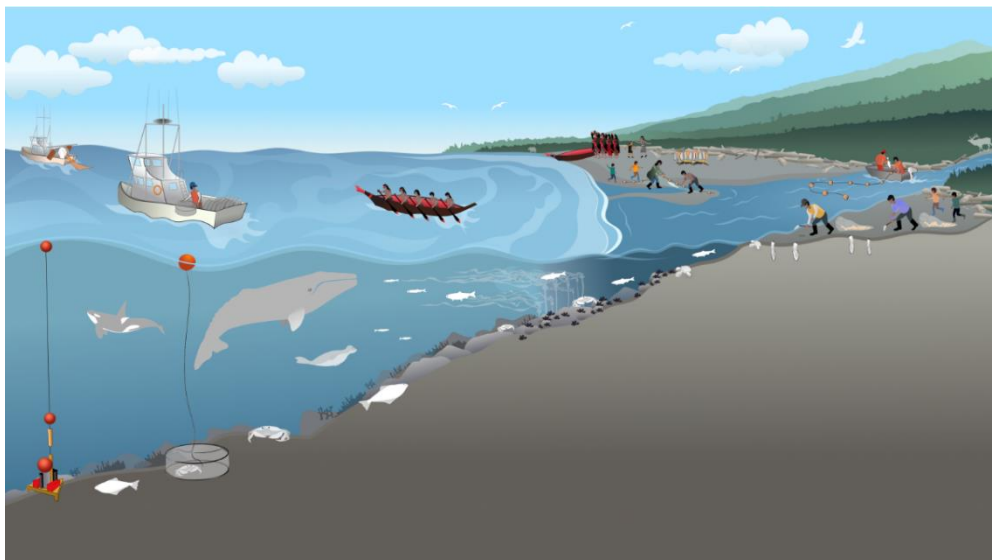
The burning of fossil fuels and land use change are increasing levels of carbon dioxide (CO₂) in the atmosphere, roughly a quarter of which is absorbed by our global ocean. As a result, ocean chemistry is changing through a process called ocean acidification. Along the Olympic Coast, marine heatwaves, hypoxia (low oxygen conditions), and ocean acidification are increasing in frequency and severity. Marine species, and the human communities that depend on them, have been showing signs of stress, prompting coastal resource managers and stakeholders to take action. Local, state, tribal, and federal representatives convened in 2016 to envision a collaborative approach to ocean change research, monitoring, and outreach in this region. The Office of National Marine Sanctuaries formally recognized the work of this partnership by designating Olympic Coast National Marine Sanctuary an Ocean Acidification Sentinel Site in 2019. The four coastal treaty tribes who are sustained by these waters - the Makah, Quileute and Hoh Tribes and the Quinault Indian Nation - together with the state of Washington, resolved to support this designation for the Washington coast. A roundtable-style steering committee was formed to guide Sentinel Site activities and ensure broad representation of coastal resource manager and stakeholder interests.



What is a Sentinel Site? Sentinel Sites are stations to keep watch; locations where coordinated observations and applied science by federal, tribal, state, academic, and community members enable early detection of ecosystem change in response to human or natural disturbance. Sentinel Site status promotes synergy by attracting, aligning, and amplifying capabilities for research, education, and outreach in order to raise awareness and inform our response to pressing environmental issues.

Vision The Olympic Coast Ocean Acidification Sentinel Site (OASeS) enhances our ability to understand, predict, and respond to CO₂-driven ocean change along the Olympic Coast by:

- focusing scientific attention on this remote but oceanographically significant region;
- enhancing coordination and cooperation among scientists and managers operating in this space;
- facilitating knowledge exchange with tribal nations and other coastal communities to ensure that scientific objectives are responsive to local information needs and priorities;
- making relevant scientific information and best management practices available to decision makers and other users in readily useable formats; and
- mobilizing public support for action by broadly communicating how ocean change is affecting Olympic Coast marine resources, communities, cultures, and economies.



The Olympic Coast as a Sentinel Site

The distinctive physical, biological, cultural, and governance attributes and vulnerability to acidification and other CO₂-related stressors make the Olympic Coast an excellent natural laboratory for studying ocean change and understanding its impacts on local communities. Its oceanographic influence on Puget Sound and coastal estuaries to the south underscore the 'sentinel' nature of these waters. The four sovereign tribal nations of the Olympic Coast have stood sentinel over these waters since time immemorial and co-manage marine resources with state and federal managers. Their continued well-being depends upon access to healthy marine resources that the U.S. government is obligated by treaty to protect. The history and breadth of scientific achievement in this region by federal, tribal, state, and academic institutions offers unique and important opportunities for cooperation. Fostering communication and collaboration among these partners will result in stronger science and more holistic management. Ultimately, an improved ability to understand, forecast, and communicate the environmental and societal impacts of ocean change on the Washington coast can serve as a model for the broader Pacific Northwest and coastal regions around the world.

The Way Forward

OASeS will address ocean acidification, warming, and hypoxia by supporting or recommending activities or investments in each of the following areas:

Science - Prioritize and coordinate research and monitoring efforts for acidification, ocean warming, and hypoxia on Washington's outer coast; studies that reflect coastal managers' information needs and place a premium on human dimensions; new technologies for field observations, remote sensing, modeling and data management

Management - Data sharing platforms that provide managers with useful information in a timely manner; opportunities for direct consultation between scientists and managers; co-development of management strategies to address ocean change

Leadership - Local to international leadership in innovative science-decision-making partnerships and approaches

Education - Formal and informal educational activities and programs that tie into OASeS research priorities

Outreach - A broad communication plan that leverages partners' capacity and reach; targeted outreach products and direct public engagement by OASeS partners

Development - Incentives to develop or strengthen OASeS partnerships; awareness campaigns to create or leverage funding for OASeS activities; sustained support for OASeS administration

For more information contact: oases.team@noaa.gov

