

Office of National Marine Sanctuaries  
National Oceanic and Atmospheric Administration

OLYMPIC COAST NATIONAL MARINE SANCTUARY



## Condition Report Quick Look

Status and Trends of Resource Condition and Ecosystem Services  
2008-2019



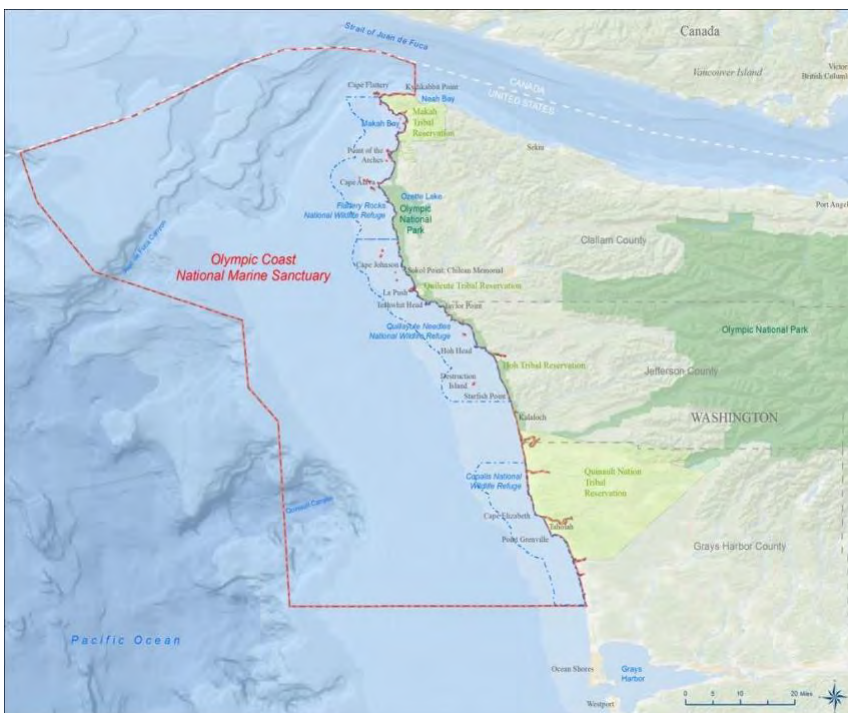
<https://olympiccoast.noaa.gov>

# OLYMPIC COAST NATIONAL MARINE SANCTUARY

## CONDITION REPORT QUICK LOOK

### Meet Olympic Coast National Marine Sanctuary

Olympic Coast National Marine Sanctuary (OCNMS) is a 3,188 square mile area of the Pacific Ocean off the Olympic Peninsula of Washington state. The sanctuary protects thriving intertidal zones, kelp forests, and deep-sea communities. The sanctuary also lies within the boundaries of the legally defined usual and accustomed fishing areas of four coastal tribes with reserved treaty rights, the Hoh, Makah, and Quileute tribes and the Quinault Indian Nation (Coastal Treaty Tribes).



### Human Pressures on the Sanctuary

When assessing the condition of national marine sanctuaries, it is important to take note of the various pressures that impact sanctuary resources. In the Olympic Coast, significant pressures include changing ocean conditions (increasing temperature, ocean acidification, low oxygen, etc.), sound from commercial shipping, ship strikes to marine life, oil spills, vessel discharges, exhaust gas cleaning systems, submarine cables, fishing, derelict fishing gear, entanglement, military activities, marine debris, research activities, invasive species, and increased visitation.

### What are Condition Reports?

Condition reports routinely document the condition of the U.S. national marine sanctuaries. This report uses the best available information for the Olympic Coast to assess status and trends of resources and the benefits of sanctuaries to humans and the environment.

### How are Condition Reports Drafted?

The condition report was drafted in collaboration between federal and state agencies, Coastal Treaty Tribes, and other subject matter experts with knowledge of the Olympic Coast, and in close partnership with NOAA's National Centers for Coastal Ocean Science and Integrated Ecosystem Assessment Program. This report updates and enhances the former 2008 report by including more explicit communication of confidence for the findings, incorporating cultural and ecosystem services, and weaving more Indigenous voices and knowledge throughout the report.

### How will this Condition Report be Used?

Condition reports help sanctuaries determine whether management goals are being achieved. This report will be used in combination with the OCNMS Climate Vulnerability Assessment (currently underway) to inform the management plan review process that begins in 2023. Reports may also be used by those wanting to learn about sanctuaries and sanctuary management.

# OLYMPIC COAST NATIONAL MARINE SANCTUARY

## CONDITION REPORT QUICK LOOK

Condition reports use the best available science and information to assess the status and trends of critical components of the sanctuary's ecosystem, the pressures affecting them, and changes in the benefits and services they provide to society. The reports guide sanctuary management and inform issues that may need to be addressed during the sanctuary's management plan review.

### Drivers/Pressures



Drivers



Human Activities and Water Quality



Human Activities and Habitats



Human Activities and Living Marine Resources



Human Activities and Maritime Heritage Resources

### Water Quality



Eutrophic Conditions



Human Health Risks



Climate Conditions



Other Stressors



Integrity of Major Habitats



Contaminant Concentrations

### Habitat

### Living Marine Resources



Keystone and Foundation Species



Other Focal Species



Non-Indigenous Species



Biodiversity

### Maritime Heritage



Maritime Heritage Resources

### Ecosystem Services



Heritage



Sense of Place



Consumptive Recreation



Non-Consumptive Recreation



Science



Education



Commercial Harvest



Subsistence Harvest



Ornamentals



▲ = Improving    — = Not Changing    ▼ = Worsening    ⬆ = Mixed

? = Undetermined    N/A = Not Applicable    NR = Not Rated

# What are the Conditions and Trends of Sanctuary Resources?

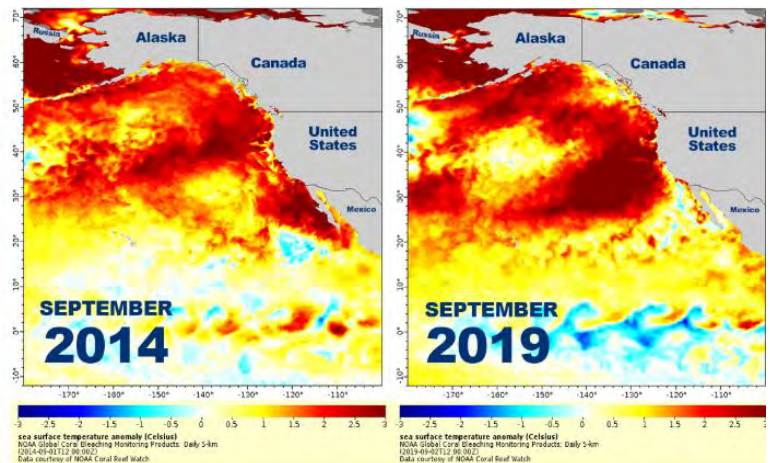
## How are Sanctuary Resources Doing at Olympic Coast?

The remote and rugged Olympic Coast is a place of stunning beauty, where Indigenous peoples have long recognized the reciprocal relationship between humans and the environment during thousands of years of continuous residence. OCNMS is located within a highly productive coastal ecosystem fueled by seasonal upwelling of cold, nutrient-rich water that supports the marine food web. The condition report for Olympic Coast National Marine Sanctuary documents the status and trends of water quality, habitat, living resources, and maritime heritage resources from 2008–2019. Severe degradation in some, but not all, sanctuary ecosystems due to climate-related changes is of great concern to experts involved in this assessment.

### Water Quality

Ratings of water quality in OCNMS vary based on location and pressures. Eutrophication has not been a problem, as there is a lack of excess nutrients in the sanctuary. Water quality-related health problems have been localized and episodic, and though harmful algal blooms (HABs) have occurred in OCNMS, frequent testing occurs and no serious human health risk has been identified.

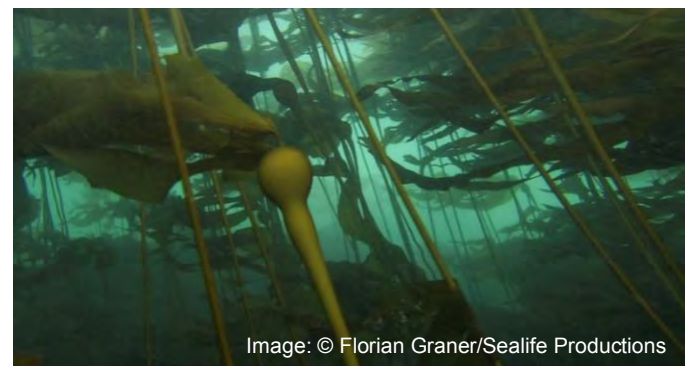
Recent, accelerated changes in climate have altered water conditions, leading to the report's only "fair/poor and worsening" rating, which reflects recent water temperature increases, marine heatwaves, low oxygen conditions, and ocean acidification. Warmer waters have also led to more frequent and intense HABs as well as temporary reductions in productivity.



Sea surface temperature anomalies showing two marine heatwaves in the North Pacific in 2014 and 2019. Image: NWFSC, 2020

### Habitat

Habitats in OCNMS are in fair condition overall, with pelagic habitats degrading due to climate-related changes, but many habitats, like kelp forests, in stable condition. The sanctuary's remote location and shorelines offer protection from many direct human impacts, which allows many habitats to remain healthy. Data gaps exist, however, for many habitat types, including the deep-sea and shallow sandy seafloor.



# What are the Conditions and Trends of Sanctuary Resources?

## Living Marine Resources

A diverse marine community can be found in OCNMS. Keystone species, such as sea stars, kelp, and sea otters, and foundational species, such as mussels and anchovies, are critical to maintaining ecosystem structure. Focal species like razor clams, Dungeness crabs, groundfish, salmon, marine mammals, and seabirds are important not only to ecosystem function, but to local tribal cultures as well as fishing and tourism economies.

There has been measurable, though not severe, degradation of living resources due to climate change and the arrival of invasive species. Sea star declines due to sea star wasting disease began in 2013. Mussel shells have thinned due to ocean acidification. Krill populations have experienced temporary declines due to marine heatwaves. On the other hand, populations of rockfish, sea otters, and razor clams have increased.

Successful collaboration between the Coastal Treaty Tribes, West Coast states, the Pacific Fishery Management Council, NOAA Fisheries, and fishermen resulted in the successful rebuilding of stocks of many rockfish species between 2008 and 2019. However, in 2015 and 2016, fisheries disasters were declared for ocean salmon and sockeye fisheries in many tribal communities and the state of Washington due to changing ocean conditions.



Image: Jessie Hale



Image: Harold Everett



Image: Robert Schwemmer Maritime Library

## Maritime Heritage Resources

One hundred and ninety-seven vessel losses have been reported in OCNMS as of July 2015. Of these, nine have been located and seven have been assessed. However, maritime heritage resources include both tangible and intangible resources and are more than just shipwrecks. Local tribal communities' value ancient canoe runs and traditional canoe routes, which continue to be used during annual Tribal Canoe Journeys.

The status of maritime heritage resources is rated as "good/fair," recognizing both the inevitable natural degradation of shipwrecks, but the continued use of traditional canoe routes. However, more information on both tangible and intangible maritime heritage resources is needed.

# How do People Benefit from the Sanctuary?

## What are Ecosystem Services?

Ecosystem services are the ways that humans benefit from the existence of natural ecosystems, the organisms that live in them, and in the case of national marine sanctuaries, the maritime heritage they contain. Think of them as gifts from the ocean, like food, fun, history, knowledge, and a place to enjoy the outdoors. In this section, the status and trends of both **cultural services** (non-material benefits such as heritage, education, science, non-consumptive and consumptive recreation, and a sense of place) and **provisioning services** (material benefits such as harvest and ornamentals) are described.

### Heritage

There are significant heritage resources in OCNMS, with the Coastal Treaty Tribes inhabiting this area since time immemorial. Heritage benefits are considered acceptable, but worsening, as evidenced by declining harvests of culturally important salmon runs. However, many cultural activities continue to be practiced, including language revitalization, subsistence harvest, fishing, and canoeing.

### Sense of Place

The Coastal Treaty Tribes are inextricably tied to the Olympic Coast and have unique relationships with nature, driven by a deep and inseparable connection. Though not rated like other services due to the diversity of perspectives among residents and visitors, the sense of place for Olympic Coast is viewed favorably due to high levels of recognition and appreciation for its qualities and resources.



Image: Jenny Waddell/NOAA



Image: Larry Workman

### Consumptive Recreation

Recreational fisheries contribute significantly to local economies. Fishing has remained steady or increased for most species. However, trends are mixed, as some important or iconic salmon stocks remain depressed with harvest at a fraction of what it was in the 1970s-80s.

### Non-consumptive Recreation

OCNMS supports non-consumptive recreation like wildlife viewing and sightseeing, which are primarily shore-based. Uncertainty about the sustainability of increasing use and its effects on resources and visitor experiences at some locations suggests the need for caution.

### Science

New research programs in OCNMS include enhanced monitoring for ocean acidification, kelp forest surveys, deep-sea exploration, and underwater sound monitoring. Scientific collaborations are also improving. However, the ability to meet many persistent science needs is compromised by limited capacity and infrastructure.

### Education

Broad-ranging education and outreach activities have increased and continue to grow within OCNMS, contributing to public awareness of the sanctuary.

# How do People Benefit from the Sanctuary?

## Commercial Harvest

While OCNMS does not manage fisheries, commercial harvests are supported by the high productivity of this region. However, harvests have been highly variable for some species because of changing ocean conditions. The variability is showcased by both high catches and fishery disasters. Fishery disasters could be particularly devastating to tribal communities, given their dependence on these resources for income, food, and cultural practices. There have also been significant achievements by federal, state, and tribal co-managers in rebuilding several rockfish stocks since the previous report.



Image: David Ruck/NOAA

## Subsistence Harvest

Trends for subsistence harvest species have been mixed, with declining numbers of some salmon runs, clams, and others raising concerns about food security. Fortunately, trends for other species, including Pacific halibut, razor clams, and rockfish, have increased in OCNMS.



Image: Karlyn Langjahr

## Ornamentals

Though the distribution and abundance of some ornamental resources are changing and could affect availability, and for some their status is unknown, they continue to be used for decorative, aesthetic, and ceremonial purposes.

## What Did We Learn from this Condition Report?

- Highlighting the reciprocal relationship between humans and the ocean, and weaving Indigenous voices and perspectives into the report, was essential to the success of the process and final product.
- Critical issues and human activities occurring within and beyond OCNMS were identified, discussed, and evaluated. Each warrants attention, tracking, study, and, in some cases, management action.
- Currently, impacts to the ocean environment in the sanctuary stemming from the changing state of the climate are the biggest concern of the sanctuary.
- Addressing identified issues, threats, and challenges to sanctuary resources and communities will require participation by, and coordination with, a variety of agencies and organizations.
- OCNMS is fortunate to work with partners that contribute to managing human activities, addressing marine conservation issues, and protecting invaluable natural and cultural treasures.

# What Can You Do to Help OCNMS?

## Participate in the management plan process

Learn about the [management plan review process](#) and submit comments during public comment periods. View [comments](#) submitted by tribal governments, the public, and stakeholders.

## Visit the sanctuary

Check out Olympic Coast National Marine Sanctuary's [website](#) to find visitor information and education, science, and maritime heritage resources.

## Volunteer

Did you know you can volunteer at Olympic Coast National Marine Sanctuary? Find out more about how you can get [involved!](#)

## Follow NOAA Sanctuaries on social media

Like to keep in contact and stay up to date with all things ocean? Follow [@noaasanctuaries](#) on Instagram, [@usolympiccoastgov](#) on Facebook, and [@OlympicCoast](#) and [@sanctuaries](#) on Twitter for updates.

## Learn how we can address climate change to mitigate ocean warming

Learn from NOAA's top [climate scientists!](#)

## Learn more about recreational and commercial fisheries management

Learn about how fisheries are managed by [NOAA Fisheries](#).

Image: Katie Wrubel/NOAA