



Long-term eelgrass monitoring in greater Puget Sound

DNR monitors abundance and depth distribution of eelgrass and other seagrass species to determine status and trends in greater Puget Sound through the Submerged Vegetation Monitoring Program (SVMP). Monitoring data are used by DNR for the management of State-owned Aquatic Lands and by the Puget Sound Partnership as one of the 25 Vital Signs used to track the health of Puget Sound. Eelgrass provides important habitat for young salmon and other ecologically important fish species. Between 2000 and 2019, the SVMP classified 14.2 million data points at 816 different sites (30% of Puget Sound). Some of the data is collected through inter-agency agreements with local governments and Tribes.



Schools of perch and salmonids in a subtidal eelgrass bed near Sequelitchew Creek, in South Puget Sound.

Why does this matter to DNR?

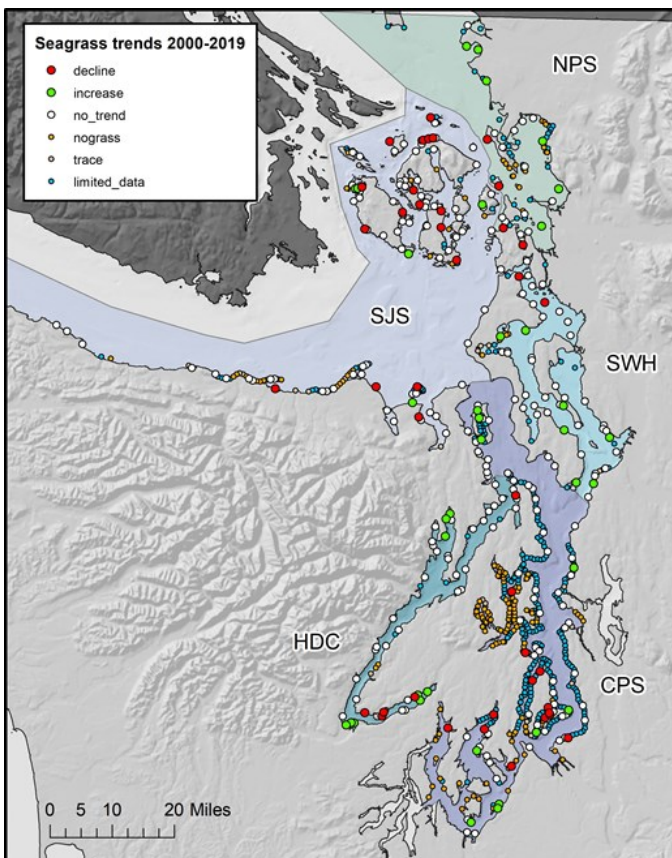
Eelgrass beds are an important component of nearshore ecosystems in the Pacific Northwest. These plants provide critical habitat for threatened species, including Chinook salmon and Pacific Herring.

DNR manages 2.6 million acres of State-owned Aquatic Lands for the benefit of current and future citizens of Washington. DNR's stewardship responsibilities include protection of eelgrass (*Zostera marina*), and surfgrass (*Phyllospadix spp.*).

The eelgrass monitoring data is publicly available and is used by other State Agencies, the federal government and by academia.

For more information

<https://www.dnr.wa.gov/programs-and-services/aquatics/aquatic-science/nearshore-habitat-eelgrass-monitoring>



Long-term site-level trends in eelgrass area based on SVMP data collected between 2000 and 2019.

Project Outcomes

Sound-wide eelgrass area has been relatively stable between 2000 and 2019. This sets the Puget Sound apart from many other developed areas, where substantial system-wide declines are ongoing. Eelgrass beds are widespread but have different characteristics depending on their location. Regional patterns are apparent in both the spatial and the depth distribution of eelgrass in greater Puget Sound.

While the majority of eelgrass sites in Puget Sound appear stable, the spatial pattern in site-level trends suggests that eelgrass beds are more susceptible to declines in certain areas of Puget Sound. We have documented several declines at locations with known or suspected water quality impairments. Locations of concern include the heads of Case and Carr Inlet, inner Quartermaster Harbor, and sites near a shallow outfall on Orcas Island.

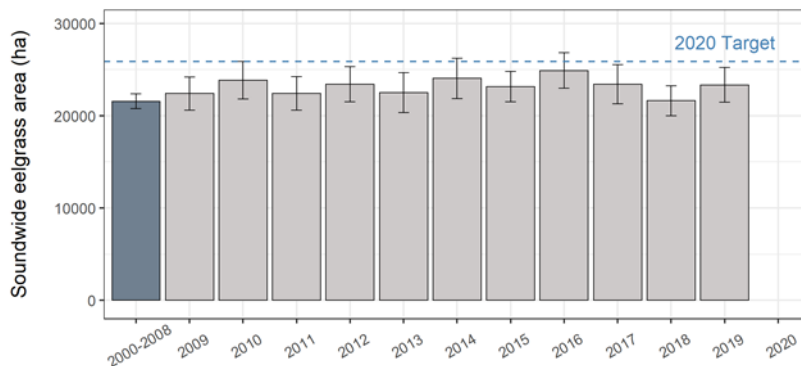
Future Opportunities

In 2020, DNR will continue its partnership with the Suquamish Tribe to expand monitoring in the central basin of greater Puget Sound ([NTA – West Sound Eelgrass Monitoring Program](#)).

Project Participants

The SVMP is enriched by collaborating with local governments and Tribes. Between 2014 and 2018, DNR partnered with the Suquamish Tribe, the City of Bainbridge Island and King County to comprehensively survey a large portion of the shoreline of the central basin in Puget Sound.

DNR employs Marine Resources Consultants (MRC) to collect towed underwater videography for the SVMP.



Annual estimates of sound-wide eelgrass area in greater Puget Sound, relative to a baseline calculated based on data from 2000 to 2008, and the 2020 recovery target set by the Puget Sound Partnership.

Project Outputs

Recent reports:

[2016-2017 Submerged Vegetation Monitoring Report](#)

[2015 Submerged Vegetation Monitoring Report](#)

[2014 Submerged Vegetation Monitoring Report](#)

[Eelgrass abundance and depth distribution in East Kitsap, Final Report to the Suquamish Tribe \(2018\)](#)

Data distribution:

[Eelgrass data viewer](#)

[Eelgrass monitoring GIS database and database manual](#)

Recent Presentations:

[Regional patterns in seagrass distribution, and their implications for management in greater Puget Sound. Salish Sea Ecosystem Conference, April 4-6 2018.](#)

[Potential impacts of nutrient over-enrichments on nearshore habitats, with a focus on eelgrass and kelp. Washington Department of Ecology - Nutrient Forum, Aug 22, 2018.](#)