

PUGET SOUND VITAL SIGNS

VITAL SIGN EELGRASS



Fringing beds and meadows of eelgrass (*Zostera marina*) provide important habitat functions and services. Eelgrass, a marine plant in the shallow waters of Puget Sound, serves as food source, nursery and shelter for many species. It also filters sediments and nutrients, improving water clarity, and protects shorelines from erosion. Eelgrass is a valuable ecosystem indicator because it is sensitive to stressors such as pollution, sediment inputs and physical damage, and it allows tracking of both gains and losses in area. This Vital Sign tells us about progress toward recovering healthy eelgrass habitat in greater Puget Sound.

Reporting Lead

Bart Christian (DNR).
Reviewed by the PSEMP
Nearshore workgroup.
Bart.christiaen@dnr.wa.gov

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VITAL SIGN > INDICATOR	PROGRESS	STATUS
Eelgrass		
Sound-wide eelgrass area		

Key Messages

- There is approximately 57,000 acres of eelgrass in greater Puget Sound. Approximately half of all eelgrass grows in small beds that fringe the shoreline. The remainder grows on broad tidal flats. The largest eelgrass beds are found in Padilla, Samish and Skagit Bays.
- Soundwide eelgrass area has been relatively stable since 2000, as has overall eelgrass area in herring spawn locations during the last forty years. This is reassuring and sets Puget Sound apart from other developed areas where large scale declines are ongoing.
- Although eelgrass populations appear to be stable soundwide, there is greater variability at smaller spatial scales, with individual sites increasing or decreasing. Declines are more common in certain areas, such as South Puget Sound and the San Juan Islands. Heads of bays and inlets, where water exchange is reduced, are locations of particular concern. Local declines are likely due to a variety of stressors, such as physical damage, local water quality impairments, and eelgrass wasting disease.
- Eelgrass health is linked to the [Marine Water Quality Vital Sign](#). Excessive input of nutrients and organic matter can lead to algae blooms, and overgrowth by epiphytes and nuisance macroalgae. These organisms shade eelgrass beds, and lower density and the maximum depth to which eelgrass grows.
- Climate change and ocean acidification pose a threat to nearshore ecosystems in Puget Sound. By consuming carbon dioxide during photosynthesis, eelgrass has a positive influence on local water chemistry, and could play a role in mitigating ocean acidification while providing refuge for a variety of organisms under changing ocean conditions.



Eelgrass and shiner perch (Photo DNR)

Strategies, Actions, And Effectiveness

- [Recovery Strategy](#) for this Vital Sign
- [Actions proposed in the Action Agenda](#) that advance this Vital Sign (*let us know if we missed any!*):
 - [West Sound Eelgrass Monitoring Program](#)
 - [Implement salmon habitat recovery in Quartermaster Harbor](#)
 - [Effectiveness of regulatory mitigation to preserve critical salmon habitat in Puget Sound](#)
 - [A comprehensive survey of salmon habitat in nearshore areas of WRIA8 and WRIA9](#)
- Restoration and protection projects funded by the National Estuary Program that are associated with the Eelgrass Vital Sign (*in the Puget Sound Info [National Estuary Atlas](#)*)
 - [Strategic West Central Water Type and eDNA Assessment](#)
 - [Support and Analysis for Tulalip Tribes Participation in Pilot Study for EPA Triple Value Simulation Project](#)
- [Eelgrass \(*Zostera marina*\) Restoration in Puget Sound](#). Washington State Department of Natural Resources, Nearshore Habitat Program (Gaeckle 2019)
- What is working to improve nearshore habitat in Puget Sound? View effectiveness [fact sheets](#) for nearshore restoration and protection activities.

Background Documents

- [Leadership Council Resolution 2011-01, Adopting an ecosystem recovery target for eelgrass \(PDF\)](#)
- [Eelgrass Indicator Target briefsheet](#)
- [Developing Indicators and Targets for Eelgrass in Puget Sound: A Science Assessment \(2010\)](#)

Other Resources

- Regulatory framework for eelgrass protection: [Hydraulic Code Rules, Shoreline Management Act, Section 404 of the Clean Water Act](#)
- Articles related to [eelgrass](#) in the [Encyclopedia Of Puget Sound](#)
- [Eelgrass data viewer](#) DNR
- [Long-term trends](#) of eelgrass in herring spawn areas in greater Puget Sound (Shelton et al. 2016)
- Eelgrass surveys by [Island County MRC](#)

Contributing Partners

The Washington State Department of Natural Resources [Submerged Vegetation Monitoring Program](#) monitors eelgrass throughout Puget Sound.

