

Eelgrass Habitats on the U.S. West Coast: State of the Knowledge of Eelgrass Ecosystem Services and Eelgrass Extent

A Synopsis

Eelgrass, a type of marine flowering plant, can serve as a biological indicator of ecosystem health and is threatened by numerous human activities. This report provides a synthesis of the state of scientific knowledge of U.S. West Coast estuary eelgrass habitats and the ecosystem services they provide, as well as identifies knowledge gaps for future research. The Pacific Marine and Estuarine Fish Habitat Partnership (PMEP) also compiled a geodatabase of presence and extent data for eelgrass within 444 estuaries along the West Coast.

Overall, we found that eelgrass occurs in 162 (36 percent) of 444 U.S. West Coast estuaries.

Numerous reports document existing and emerging threats to eelgrass. We identified 19 threats specific to the U.S. West Coast. Four, that were identified in all four ecoregions, are discussed in the report.

- increased sedimentation,
- coastal development,
- sea level rise, and
- sea temperature changes.

This report discusses known information on four ecosystem service categories – supporting, regulating, provisioning, and cultural and amenity services. For all ecosystem services reviewed, a key challenge remains that few studies capture the value of these services quantitatively.

Ecosystem Function and Service
Supporting Services
Primary production
Habitat provision and food web support
Regulating Services
Shoreline protection and sediment stability
Climate change regulation
Improvement of water quality
Provisioning Services
Fish and shellfish as food
Eelgrass as food source
Insulation and fertilizer
Cultural & Amenity Services
Opportunities for recreation
Aesthetic Values
Existence and bequest

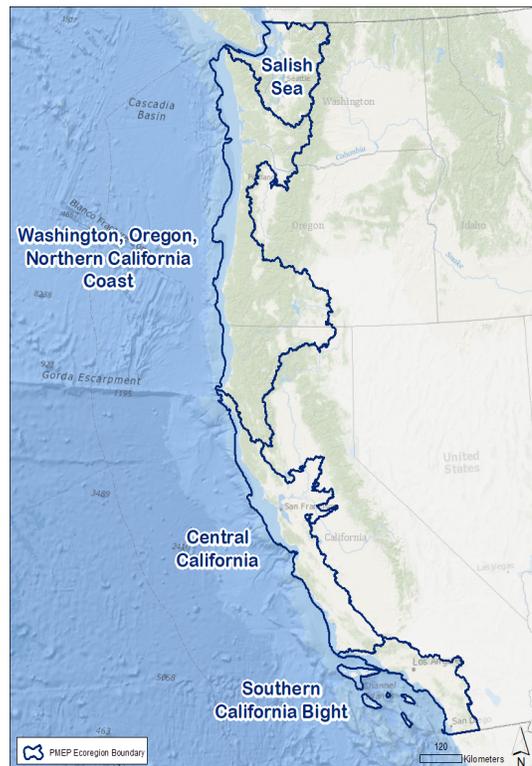


Ecoregion	Salish Sea	Washington, Oregon, Northern California	Central California	Southern California Bight
Estuaries with eelgrass present (%)	59%	21%	17%	36%
Estuaries with eelgrass absent/unsuitable habitat (%)	6%	17%	39%	49%
Estuaries with no data (%)	35%	50%	44%	15%
Nearshore eelgrass?	Present	NA	Present	Present
Species present	Zostera marina, Zostera japonica	Zostera marina, Zostera japonica	Zostera marina	Zostera marina, Zostera pacifica (Channel Islands, nearshore mainland)
Depth range	Eelgrass (both Zostera marina and Zostera japonica): -11m to +1.4m MLLW	Zostera marina: -2.1m to +2.1m MLLW; Zostera japonica: +1.5m to +1.8m MLLW	Zostera marina: -4m to 0.4m MLLW	Zostera marina (in estuaries): -3.7 to +0.1m MLLW; Zostera marina (in nearshore of Channel Islands and mainland): -22m to -3m MLLW
Eelgrass extent data availability	Well documented extent throughout Salish Sea	Limited extent data	Well documented extent for a few estuaries, Limited extent data for many estuaries	Well documented extent for a few estuaries, limited extent data for many estuaries
Other eelgrass data	Well documented (Shorezone, WDFW Herring Spawning Surveys, SeagrassNet)	Shorezone (Washington and Oregon only)	NOAA ESI	NOAA ESI

The report also recommends management strategies to conserve and restore eelgrass habitats and their ecosystem functions:

- Use more standardized approaches to data collection to enhance our knowledge of ecosystem service values.
- Consider the entire estuarine and nearshore landscape when planning for restoration, including the desired ecosystem service values in a restored area.
- Incorporate public outreach about the value of eelgrass ecosystem services into future management strategies.

More detailed recommendations can be viewed in the report. The information in this report can serve as a guide for future research on U.S. West Coast eelgrass habitats and the ecosystem services and functions they provide.



To View/Download the Report visit:
<http://www.pacificfishhabitat.org/assessment-reports/>

To View/Download Eelgrass Data visit:
<http://www.pacificfishhabitat.org/data>