

eelgrass

SNOHOMISH COUNTY MARINE FACT SHEET



For more information on this topic or to learn how you can help, please call Snohomish County Public Works, Surface Water Management at 425-388-3464 (TTY: 425-388-3700) or check www.co.snohomish.wa.us/mrc.htm

Overview

Eelgrass (*Zostera marina*) is an underwater grass present throughout Puget Sound, the Pacific and Atlantic coasts and Europe. Eelgrass communities provide a valuable habitat for many marine animal and plant species along the shoreline.

Life history/ecology

Eelgrass is a perennial plant (not a seaweed) that grows submerged or partially floating in salt water. Eelgrass reproduces by vegetative growth—by spreading rhizomes (roots)—and by seed germination. Most growth of eelgrass in the Pacific Northwest is by spreading roots, which eventually creates large colonies or beds. Eelgrass blooms from June to August. The long slender leaves grow to 1/2 inch wide and about 3 feet long. Eelgrass grows on muddy, sandy bottoms in the shallow subtidal zone down to about 22 feet, especially in the estuaries and in areas without strong wave action. Eelgrass meadows build up in the spring and summer, then decay in the fall and winter.

Status

Washington State has lost an estimated 33% of its eelgrass beds. The Department of Natural Resources has compiled data that shows the general extent of eelgrass beds along the Puget Sound shoreline. In Snohomish County, eelgrass beds are known to exist along most of the shoreline, but additional mapping is planned to determine the specific location of the beds.

Functional value

- **Base of the food web**—Eelgrass leaves and meadows provide a base for the complex nearshore food web. Waterfowl, snails, and urchins eat the leaves. Bacteria, fungus and detritus (dead animal and plant matter) form a brown coating on the leaves, which then provides food for small invertebrates (like worms, sea stars and clams). These invertebrates in turn provide food for fish, crabs, and birds. Herring are especially dependent on eelgrass for spawning (they lay eggs on eelgrass leaves) and protecting their young. Herring is a major food source for salmon, seabirds, seals, and other marine mammals. Eelgrass leaves, when they die, provide an abundant food source for bacteria and fungi, helping to start the cycle over again.
- **Protection**—During low tides, eelgrass shelters small animals and plants from extreme temperatures. On tideflats, eelgrass beds hold moisture like a sponge, offering additional protection for small creatures.
- **Erosion Control**—Eelgrass meadows cushion the impact of waves and currents, preventing erosion. Eelgrass roots hold sediments in place. This protection helps preserve the highly productive bacteria in the sediments which nourish many invertebrates.
- **Economic**—Fish and shellfish, which depend on eelgrass for all or part of their life cycle, account for a multimillion dollar industry in Washington State.



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Human impacts on eelgrass:

- **Human uses of eelgrass**—Eelgrass has historically been used by humans for food (seeds and roots), animal bedding, insulation, diarrhea medicine, compost and many other uses.
- **Habitat alteration and pollution**—Nearly half of the people in the U.S. live near shorelines. Recreational, industrial, commercial and residential development continue to exert pressure on the shallow protected bays, lagoons and estuaries required for eelgrass growth. Some of the major impacts:

Dredging for navigation and hydraulic clamming can destroy eelgrass beds.

Logging can increase sedimentation and turbidity in estuaries, which can smother eelgrass.

Shoreline construction can increase erosion and turbidity (cloudy water). Structures built over the water prevent eelgrass from getting enough light to grow.

Seawater cooling systems used in power plants result in warmer water temperatures, which can kill eelgrass.

Spilled oil causes eelgrass plants to lose their leaves.

Decreased water quality—too many nutrients accelerate other plant growth on eelgrass blades, blocking out light.

Herbicides used on coastal land can kill or damage eelgrass.

Invasive plants, such as *Spartina*, crowd and displace native plants.

Protection efforts

- **Local protection efforts**—The Snohomish County Marine Resources Advisory Committee (MRC) is a citizen-based advisory committee created to address local marine issues. The MRC wants to protect eelgrass and other valuable marine vegetation. The MRC is investigating eelgrass habitat and issues related to eelgrass in the Snohomish County area.

- **Regulatory**—The Clean Water Act and other local, state and federal laws have slowed the loss of eelgrass, but the pressure of development still continues. Since the 1980's, habitat managers have increased protection for eelgrass due to its importance as habitat for fish and wildlife and its vulnerability to shoreline development. Currently, resource managers have adopted a "no net loss" policy for eelgrass.

Mitigation—To offset the impacts of shoreline development, dredging and pollution, transplantation of eelgrass is being tested. Developers and scientists have attempted to construct new eelgrass beds adjacent to project sites. However, creation of a large-scale meadow that has all of the complex functions and inter-relationships of a natural eelgrass system has yet to be achieved.

- **Voluntary**—Use alternative construction practices for docks that allow sunlight to reach eelgrass beds. Minimize shoreline alterations to preserve natural shoreline conditions.

How you can get involved

The Snohomish County Marine Resources Advisory Committee (MRC), was formed to recommend remedial actions to local authorities, and build local awareness of the issues and support for remedies. The MRC meets on a monthly basis and welcomes public participation.

Sources

- Port Townsend Marine Science Center Eelgrass fact sheet
- Washington Department of Ecology web site, www.ecywa.gov
- Plants of the Pacific Northwest Coast, Jim Pojar and Andy MacKinnon, Redmond, WA 1994

Resources

- MRC web site: www.co.snohomish.wa.us/mrc.htm



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