## *Eelgrass is not a seaweed…* but

**a flowering marine plant belonging to the seagrass family. Seagrasses evolved on land and migrated to the sea in relatively recent geologic times.**

**Of 11 species of eelgrass worldwide, 2 - the native *Zostera marina* and the introduced *Zostera japonica* - are in our local mudflats. The Greek word zoster means belt for the long, bright green, ribbon-like leaves.**

*Zostera* is found in shallow, saline waters and sandy mudflats and is very light dependent. *Zostera*'s extensive root system helps to stabilize mudflat beaches and prevent erosion of shorelines.

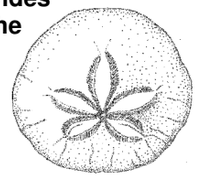
Eelgrass beds are an emerald ribbon found intertidally to about 50 feet deep. This zone contains the most diverse and abundant fauna of all of Boundary Bay.

## *Eelgrass is a marine food factory!*

Eelgrass is very efficient at converting solar energy into plant tissue and concentrating numerous elements that occur only sparingly in the sea. With its high productivity and rapid growth, eelgrass forms the food base for fish, shellfish and waterfowl in shallow seas. From predator to increasingly large predator the food chain that began with eelgrass ends on our dinner tables.

Eelgrass blades support a coating of diatoms to which bacteria and other algae are then able to attach. This seemingly insignificant "brown felt" is of immense importance to grazers that feed many larger organisms.

Eelgrass blades offer surface area for over 350 species of macro-algae and 91 species of micro-algae. **Eelgrass detritus provides the food for consumers in the open ocean as deep as 10,000m.**



Waterfowl, juvenile salmon & herring, jellyfish, shellfish, shrimp, crab, seas stars, moon snails, sand dollars, sea urchins, diatoms, nematodes, sponges, bryozoans, annelids and flatworms (124 species of invertebrates) find protection and food in eelgrass meadows.

The eelgrass nudibranch, limpet and **bay pipefish, a seahorse relative,** require eelgrass habitat to survive.

**It has been estimated that seagrasses account for 34% of benthic global oxygen production—the air you breathe.**

**Eelgrass beds are important nursery and spawning sites for herring, lingcod, rockfish, salmon and home to Dungeness crabs. 80% of commercially important fish and invertebrates are dependent on eelgrass for part of their life.**

### *Discovery of Eelgrass Importance*

*In the 1930s, along the Atlantic coast, a naturally occurring marine slime mold spread throughout eelgrass meadows resulting in its near disappearance. The exact cause is unknown.*

*Almost immediately birds, fish and shellfish disappeared. The oyster industry was ruined; fisheries were closed. Beaches and sandbanks eroded away. The economic ramifications were in the millions of dollars. It took many decades for eelgrass beds to recover and some never have.*

***Worldwide eelgrass is in decline.***

**Photosynthesis is most important in June and July when eelgrass stores energy. Disturbance and shading impacts should be avoided at this time.**

**15% of the world's total seagrass areas have been lost.** The trend towards habitat degradation continues as population increases in coastal regions.

***Dredging*** removes the entire ecosystem; it also poses one of the greatest threats to eelgrass by suspending silt that blocks light on which *Zostera* depends, causing beds to fragment or even disappear.

***Docks*** create shading problems. Boat anchoring in an eelgrass meadow can disturb the rhizomes, while boat propellers cut eelgrass blades in shallow water.

***Pollution*** increases growth on eelgrass blades blocking the sun which it needs to survive. Herbicide runoff can kill or damage eelgrass plants.

D*igging activities*, such as shellfish harvesting, clamming and sandcastle building can damage sensitive underground roots called rhizomes and destroys invertebrates.

**Under the federal Fisheries Act**, "fish habitats" are defined as those parts of the environment on which fish depend, directly or indirectly, in order to carry out their life processes. The Act also defines "fish" to include all the life stages of "fish, shellfish, crustacean, marine animals and marine plants". Fisheries and Oceans Canada's long-term policy objective is the achievement of an overall net gain of the productive capacity of fish habitats. The "no-net loss" principle guides the department to balance unavoidable habitat losses with habitat replacement on a project-by-project basis.

## The Boundary Bay Area

Five rivers, numerous creeks, estuaries, salt marshes, mudflats, and **expansive eelgrass beds** encircle **Boundary Bay**, part of the globally significant Fraser River Delta.

It exceeds global, continental and national standards for the diversity & numbers of birds it supports, over 333 species, some rare and endangered. It is the top rated Important Bird Area in Canada of 600 sites. The Fraser River Delta is globally recognized as a "Hemisphere Reserve", a critical link on the Pacific Flyway for migratory shorebirds needing protection.

Boundary Bay provides critical habitat for salmon, herring, coastal cut-throat trout, flounder & sole & Grey whales frequent the bay during their spring migration.

Great Blue Heron nesting colonies are present & they forage for fish among the eelgrass beds year round.