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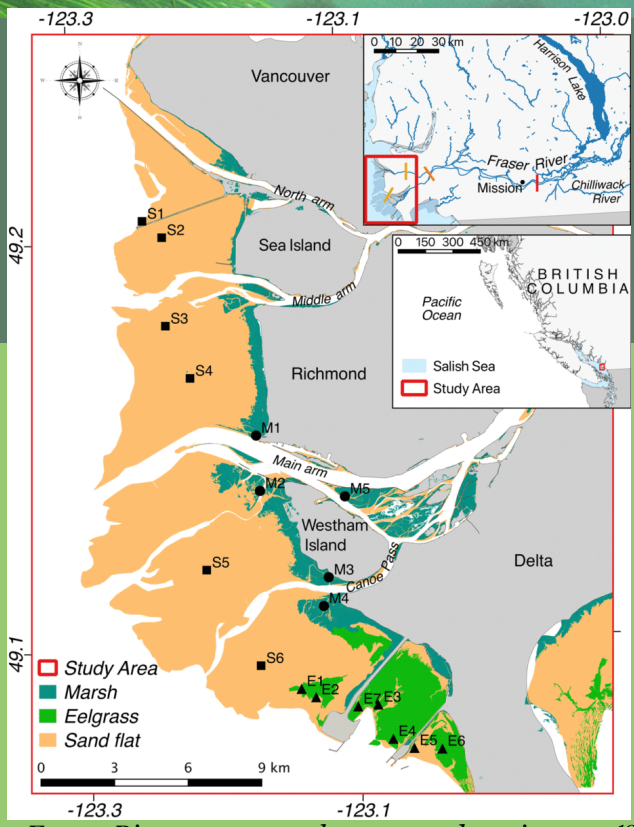
Eelgrass Conservation:
A Critical Consideration

Executive summary:

Eelgrasses, vital marine plants, are under threat. An estimated 15% of eelgrass meadows are declining across Canada, and more are at risk[1]. Without these plants many species would lose safe habitat, affecting biodiversity, fisheries, and communities worldwide.

What is eelgrass?

Eelgrasses are seagrasses of the genus *Zostera,* and they occur along the Pacific from Mexico to Alaska. Two species of eelgrass are found in British Columbia, *Zostera marina* and the smaller *Zostera japonica*. Eelgrasses typically grow in estuaries or bays in nearshore environments. These plants grow along the coast of British Columbia, with one of the largest eelgrass meadows in the world located at the mouth of the Fraser[1].



Fraser River estuary; eelgrass meadows in green[10]

Why is eelgrass important?

Eelgrass has huge **ecological** and **socio-economic** importance.

Ecological

Eelgrasses are bioengineers that create 3D **habitats and nurseries** for thousands of species, as well as providing food for coastal ecosystems[1,2,3].

They play an important role in the global carbon cycle by acting as **carbon sinks**; eelgrass can store up **90 times more carbon** than forests[4].

Eelgrasses also help to **filter water** and **cycle nutrients** through marine ecosystems[4].

Socio-Economic

Eelgrass meadows are a **nursery for, and critically support, species** like herrings, rockfish, salmon, and Dungeness crabs[2,5].

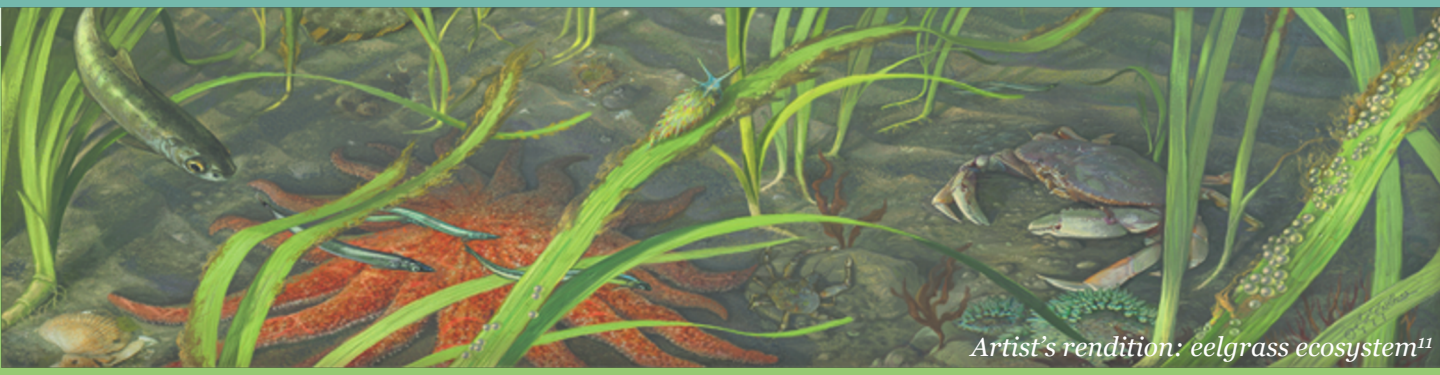
People worldwide rely on these species for **food** and value them for their **cultural significance[2,5].**

It has been estimated that through their role as a nursery habitat, **seagrasses support 20% of the world's fisheries productivity[5].**

Threats to eelgrass

- **Habitat loss and degradation:** Human caused habitat degradation, such as pollution of coastal water, declining water quality, and sea filling for development projects are all major threats to eelgrass[5].
- **Invasive species:** Invasive species like the European green crab are causing declines in eelgrass populations in British Columbia[6].
- **Climate change:** Rising sea surface temperatures, ocean acidification, marine heatwaves, and other ocean-wide threats are negatively impacting eelgrasses.[7]
- **Lack of public awareness:** Despite their importance, eelgrasses are not a charismatic species. Lack of recognition and understanding in the general public means that eelgrass conservation efforts are often short of public support[5].

Eelgrasses have "low species diversity but high ecosystem service value"[5], putting them in a position where species-specific threats can have cascading effects on the entire community that relies on eelgrass.



Artist's rendition: eelgrass ecosystem[11]

Recommendations

- **Further research and mapping efforts:** The more we know about eelgrass the better we can target efforts to help it. Mapping and assessing health of eelgrass populations is the first step in restoration and conservation. Mapping efforts in BC should focus on areas with decreasing populations and lower samples sizes, such as the Strait of Georgia.[5]
- **Stop sea filling and polluting near-shore environments:** The best way to help at risk species is to stop damaging them, both by avoiding construction on eelgrass meadows and limiting marine pollution as much as possible.
- **Continue restoration and reclamation efforts:** Organizations like SeaChange are working to remove debris and set up no-anchor zones in eelgrass meadows. Supporting and funding projects like this is critical to eelgrass conservation.[8,9]
- **Build public awareness and connection:** By increasing access to nature and providing easy access to education, people will build a connection with eelgrass and the species they support. This in turn motivates people to speak up for and support eelgrass conservation.[5]

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