Topography's Influence on the Distribution of a Non-Native Seagrass

Native Eelgrass

What is Dwarf Eelgrass?

Dwarf eelgrass (*Zostera japonica*) is a seagrass - a rooted, marine flowering plant. It is closely related to our most common native seagrass, eelgrass (*Zostera marina*). Dwarf eelgrass is native to Asia, and was likely introduced to the Pacific Northwest with oyster aquaculture.

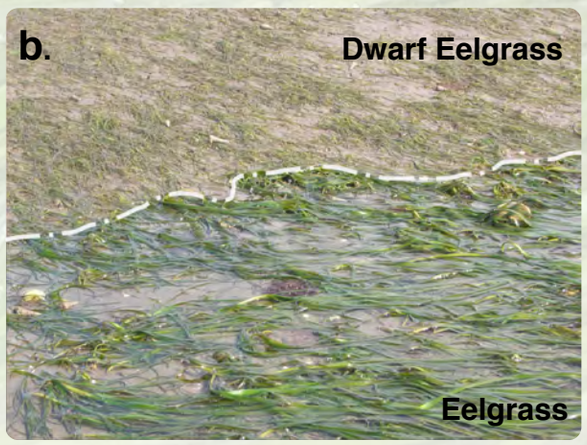
Both the native and introduced eelgrasses inhabit sandy and muddy tideflats in the Puget Sound. Dwarf eelgrass is smaller than our native eelgrass, and tends to grow at higher tidal elevations.

Dwarf Eelgrass

Questions:

How does topography influence the interaction of eelgrass and dwarf eelgrass?

What limits dwarf eelgrass's lower extent?



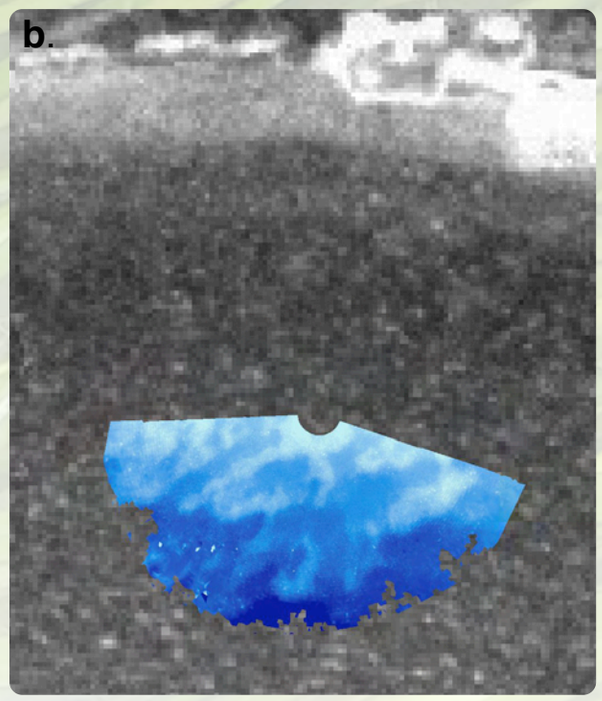
a. Field site on the southern shore of Samish Island, where shallow pools are home to eelgrass, and mounds host dwarf eelgrass. b. Closeup illustrates the sharp transition between species.

Background

On expansive mud flats, topographic relief of only a few centimeters can create very different low-tide habitats. At such a site on the southern shore of Samish Island, Wa, eelgrass and dwarf eelgrass co-occur in a patchy mosaic. Using traditional survey techniques and cutting-edge laser scanning, I've mapped this microtopography. This has shown that where the two species co-occur, dwarf eelgrass grows on subtle mounds, while the native eelgrass grows in adjacent pools.

Future Work

Future work aims to explore environmental factors that may drive the patterns at this site. I will compare a suite of physical and chemical characteristics of pool and mound habitats, and determine if these may prevent dwarf eelgrass invasion here, and at other sites in the Puget Sound.



Measuring intertidal elevation with a level and transit (a), and the results of a ground based laser scan of the same site (b).

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