Salish Sea bull kelp restoration research: local, regional and international collaborations

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Restoration Research:
local, regional and international collaborations

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NCES Study area 2011-15

Hornby Island, British Columbia, Canada

Denman Island
Hornby Island
Maude Reef
Wild kelp bed
eastern Vancouver Island
Kelp restoration research

Bull kelp has been in decline in many areas, including central Strait of Georgia.

We are trying to learn:

• What is limiting local wild kelp populations (south Denman Island)? [Monitoring & mapping]

• How best to grow kelp ‘artificially’? [Culture & monitoring kelp performance]

• Can cultivated kelp reproduce and become self-sustaining? (And perhaps recolonize parts of the former habitat?)
Kelp culture grid, Maude Reef
Kelp restoration
Growing kelp

- The seeded spools of string are taken to the planting site and wound onto the culture rope that is to be attached to the grid.

- Then we hope for the best!

- We monitored by SCUBA each 2 months at the grid and at the Denman kelp bed.
Collaboration with Project Watershed and SFU
Population genetics with UW-Milwaukee
What do we know about temperature/time effects?

- Sori production: May to October in “cooler years” (esp. May-June) but none in warmer years.

- Sporophyte upper temperature tolerance: 18°C over 30-35 days

- Spore release: drops off >17°C, but rises if lower temperatures return (Braeden SFU)

- Gametophyte upper temperature tolerance: 23°C for 2 weeks (tom Dieck 1993)
Next steps: sea urchin exclusion experiment
Questions?