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

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local, regional and international collaborations

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Acknowledgements

- NCES (Nile Creek Enhancement Society)
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- Pacific Salmon Foundation (financial support 2011-2017)
- Fisheries and Oceans Canada (sonde equipment loan and financial support 2017-18)

NCES Study area 2011-15

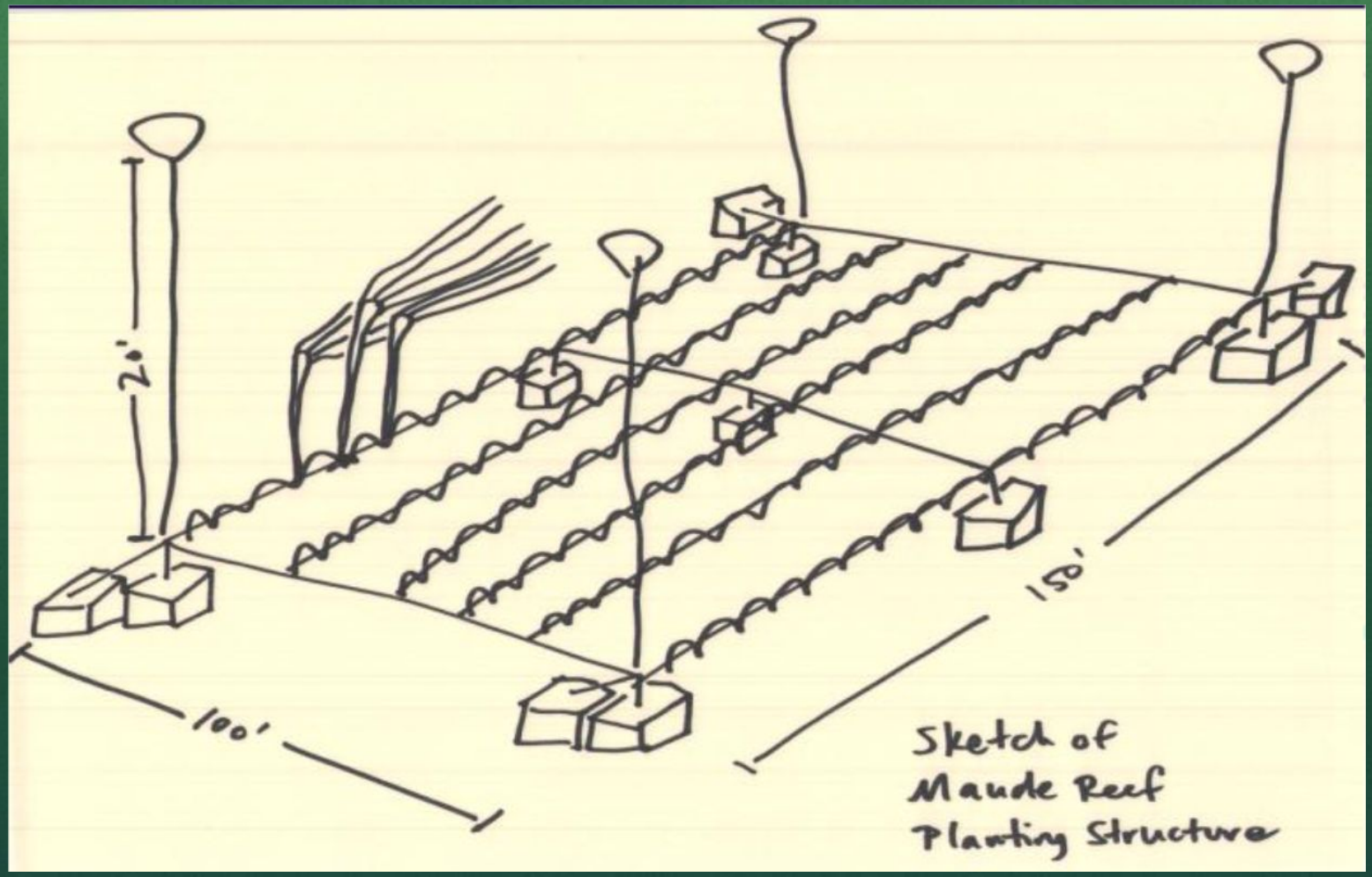
Kelp restoration research

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

We are trying to learn:

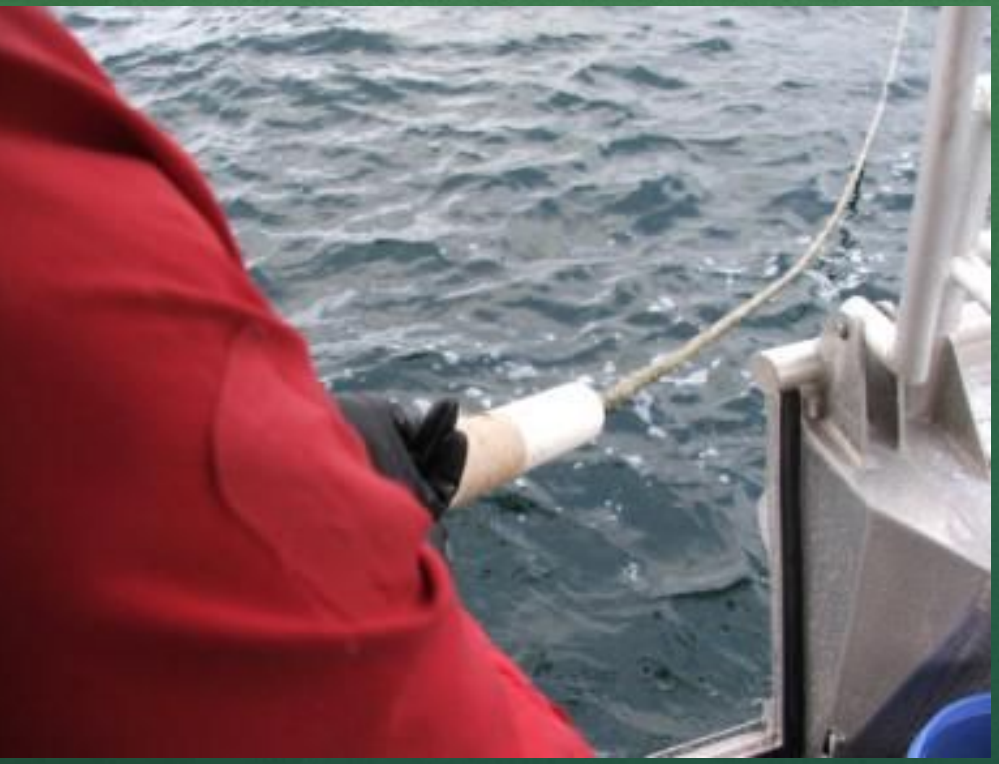
- What is limiting local wild kelp populations (south Denman Island)? [Monitoring & mapping]
- How best to grow kelp 'artificially'? [Culture & monitoring kelp performance]
- Can cultivated kelp reproduce and become self-sustaining? (And perhaps recolonize parts of the former habitat ?)

Kelp culture grid, Maude Reef



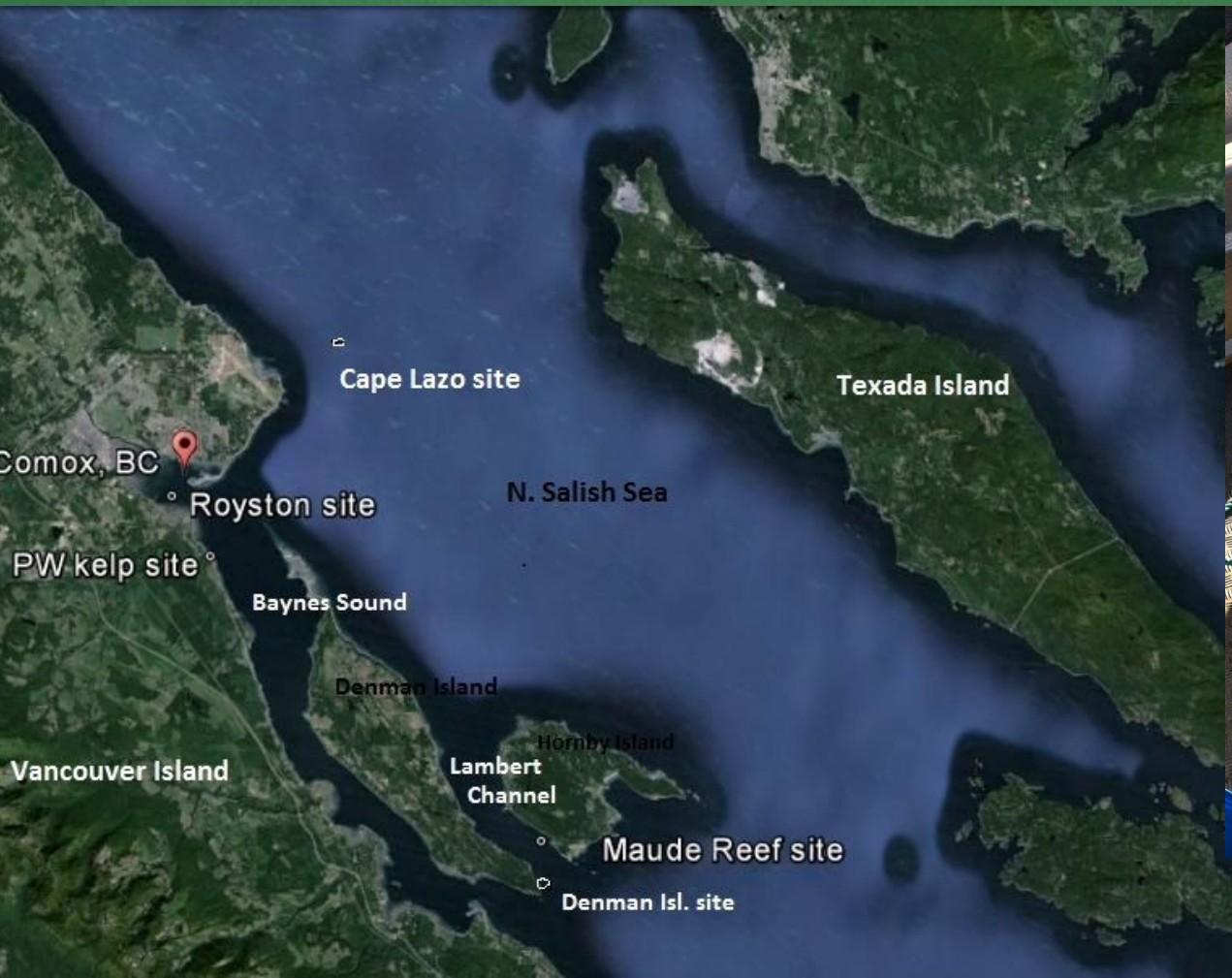
Kelp restoration

Growing kelp

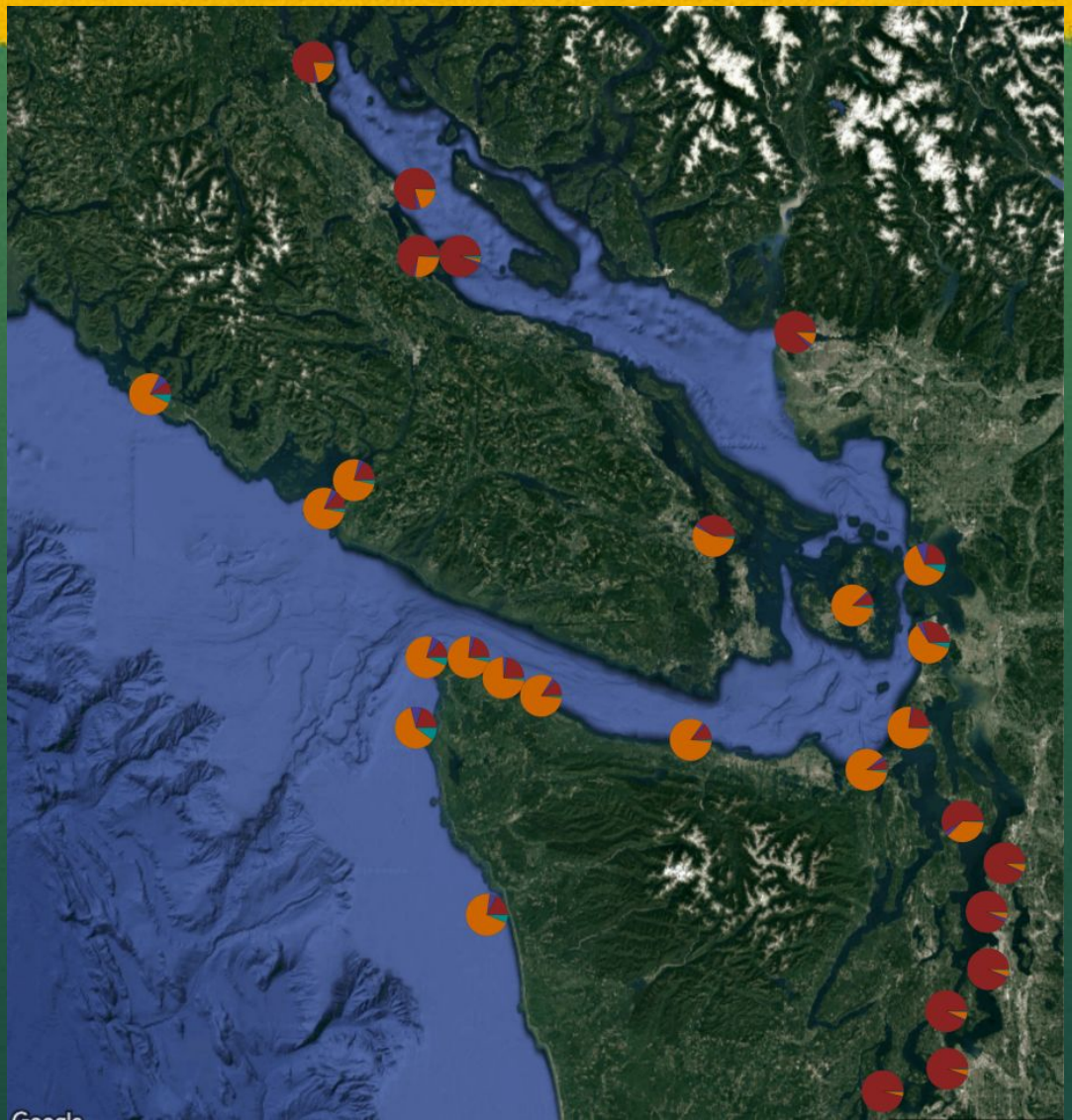


- The seeded spools of string are taken to the planting site and wound onto the culture rope that is to be attached to the grid.
- Then we hope for the best!
- We monitor ed by SCUBA each 2 months at the grid and at the Denman kelp bed.

Collaboration with Project Watershed and SFU



Population genetics with UW-Milwaukee

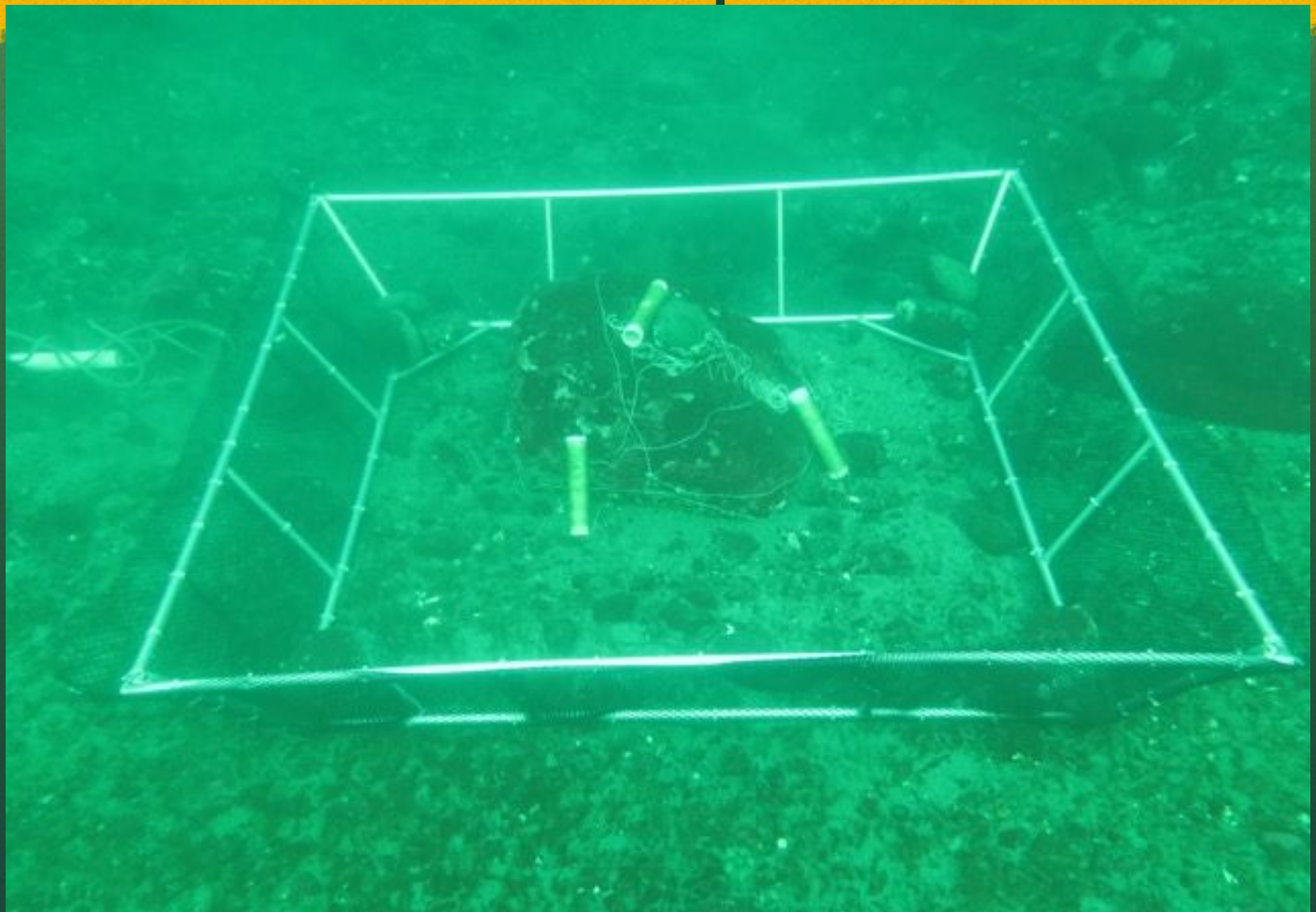


2017

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: 18C 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?