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Salish Sea Ecosystem Conference

2014 Salish Sea Ecosystem Conference  
(Seattle, Wash.)

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Apr 30th, 3:30 PM - 5:00 PM

## **Bull Kelp Restoration Project at Hornby Island, BC, Canada**

William Heath

*Nile Creek Enhancement Society*, [billh895@gmail.com](mailto:billh895@gmail.com)

Kayt Chambers

*Nile Creek Enhancement Society*

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*Salish Sea Ecosystem Conference*. 18.

<https://cedar.wwu.edu/ssec/2014ssec/Day1/18>

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# Bull Kelp Restoration Project, Hornby Island, BC

Bill Heath, Ph.D and Kayt Chambers, B.Sc  
Nile Creek Enhancement Society  
Vancouver Island, BC, Canada

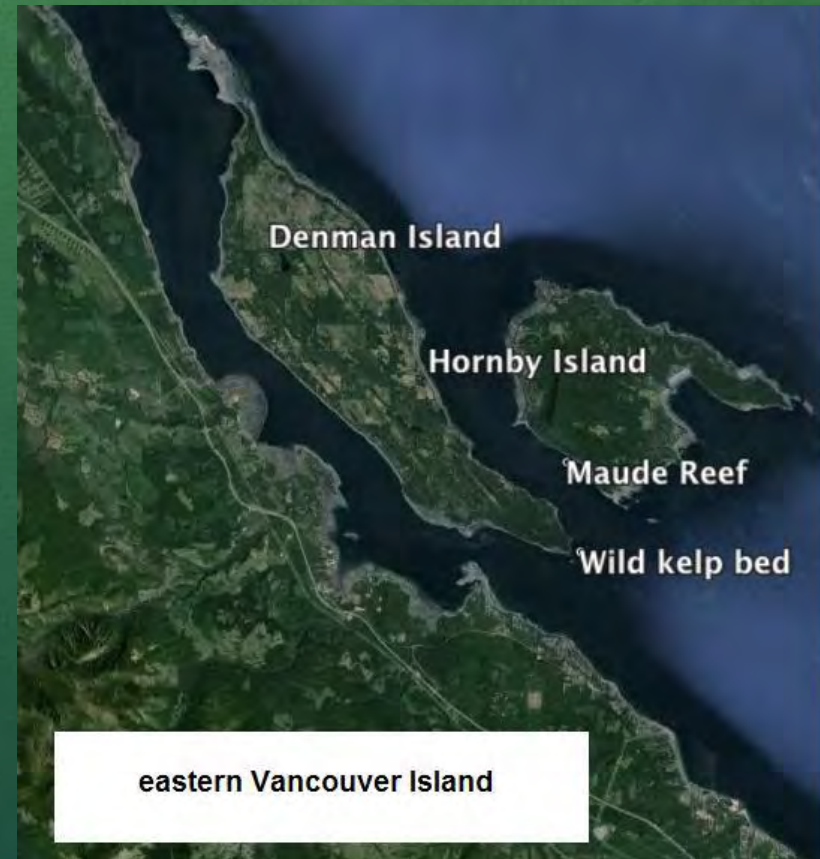


# Acknowledgements

- Project of Nile Creek Enhancement Society <nilecreek.org>
- Canadian Kelp Resources Ltd., Island Scallops Ltd., VIU Deep Bay Marine Station, Vancouver Aquarium, Conservancy Hornby Island
- Amanda and Rob Zielinski, Hornby Island Diving
- Kayt Chambers (Project Co-ordinator)
- Pacific Salmon Foundation (financial support 2011- 2013)
- Puget Sound Restoration Fund (support to attend SSEC)
- Fisheries and Oceans Canada



# Study area





# Kelp restoration

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

We are trying to learn:

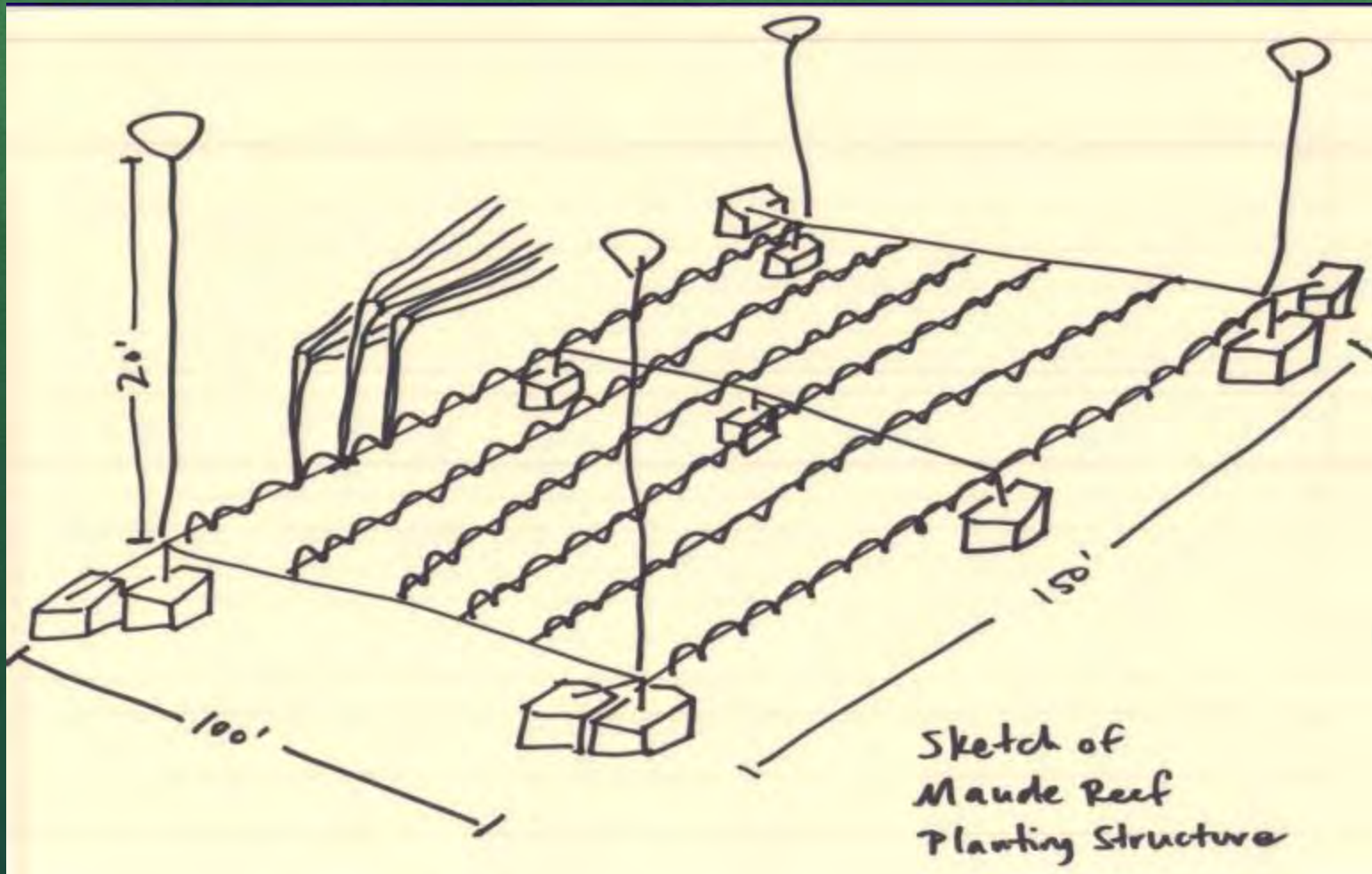
- What is happening with local wild kelp populations (south Denman Island)? [Monitoring & mapping]
- How best to grow kelp 'artificially'? [Culture & monitor]
- Can cultivated kelp reproduce and become self-sustaining? (And perhaps recolonize parts of the former habitat with some help?)

# Growing kelp

- The system we are using to grow kelp is based on the system used by Dr. Louis Druehl of Canadian Kelp Resources Ltd.
- We designed and built a submerged grid structure (30m x 45m) at Maude Reef, Hornby Island (site of former kelp bed).
- Our intention is that the structure is strong enough to support mature kelp plants, can be used for multiple years, and is removable when the project is complete.



# Growing kelp

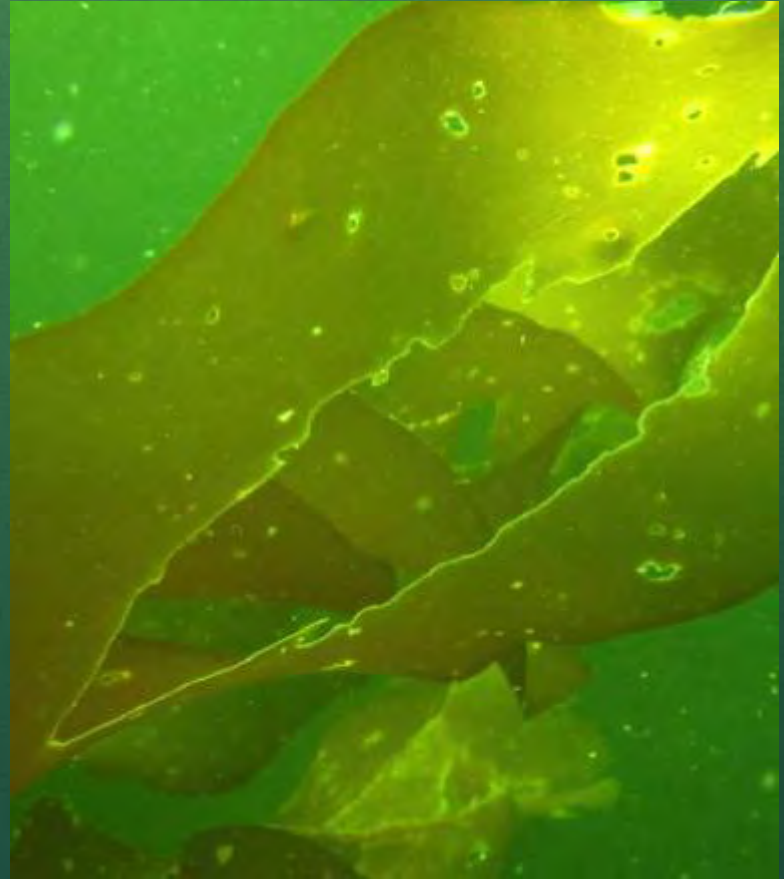
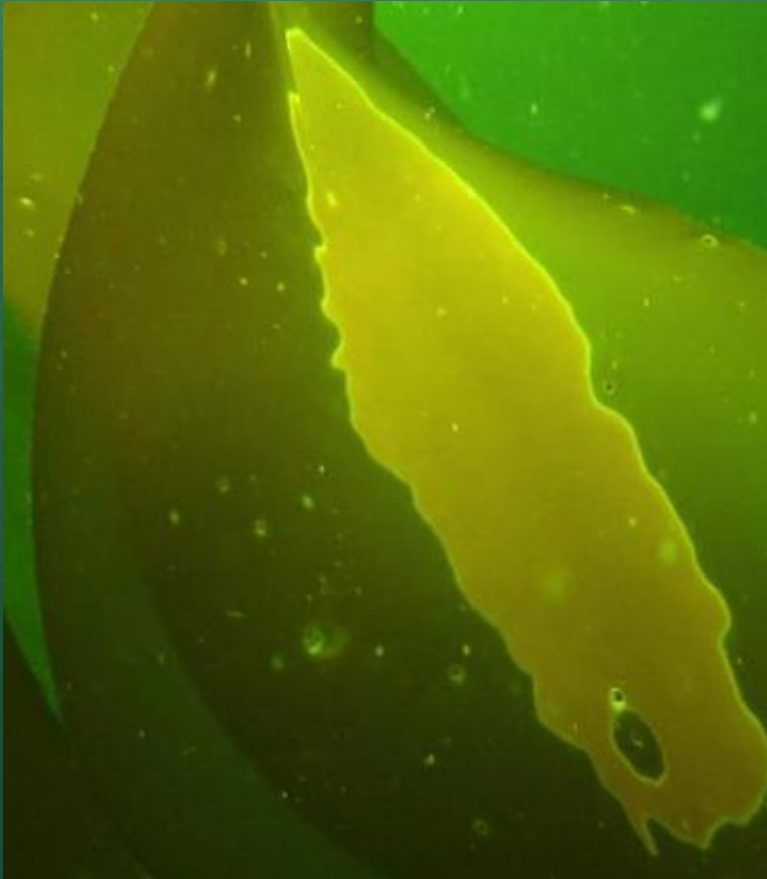


# Kelp restoration





# Sori



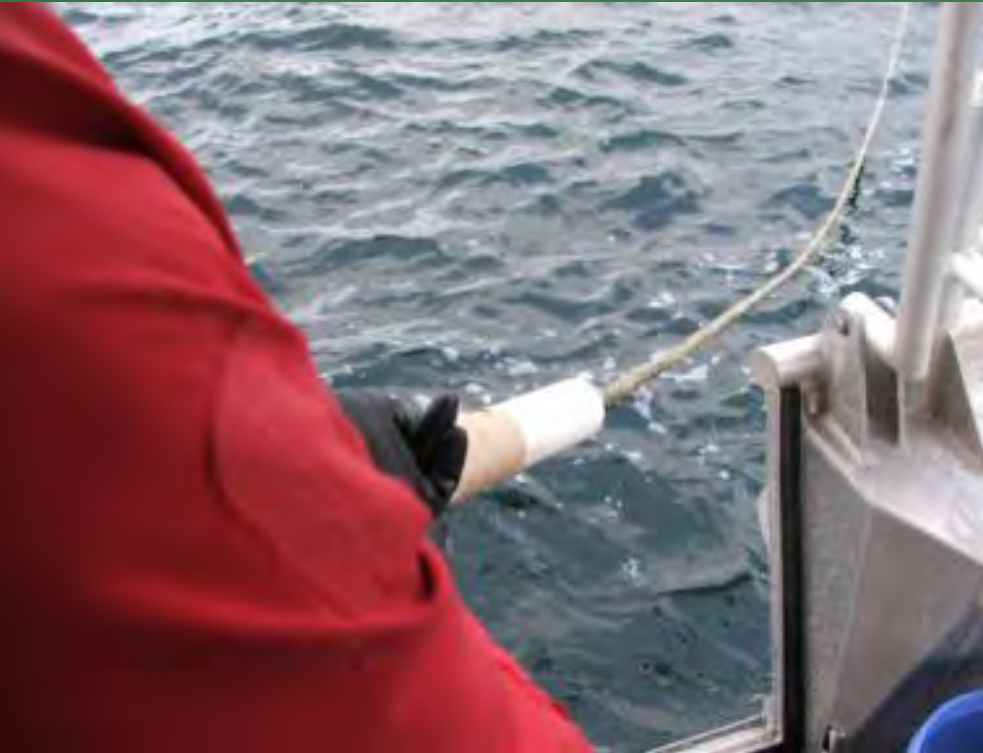
# Growing kelp

- Sori are collected from wild kelp
- They are taken to Canadian Kelp Resources where they are grown through the gametophyte stage
- New sporophytes are grown on fine string that is wound onto a short piece of pipe





# Growing kelp



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

# Temperature and Light Intensity

2 sites (S. Denman Island and  
Maude Reef, Hornby I.)

2 depths (Bottom at 20' below  
MLW; and at MLW)

Onset HOBO data loggers for  
Temperature (C) and Light  
Intensity (Lux)

15 minute sampling interval

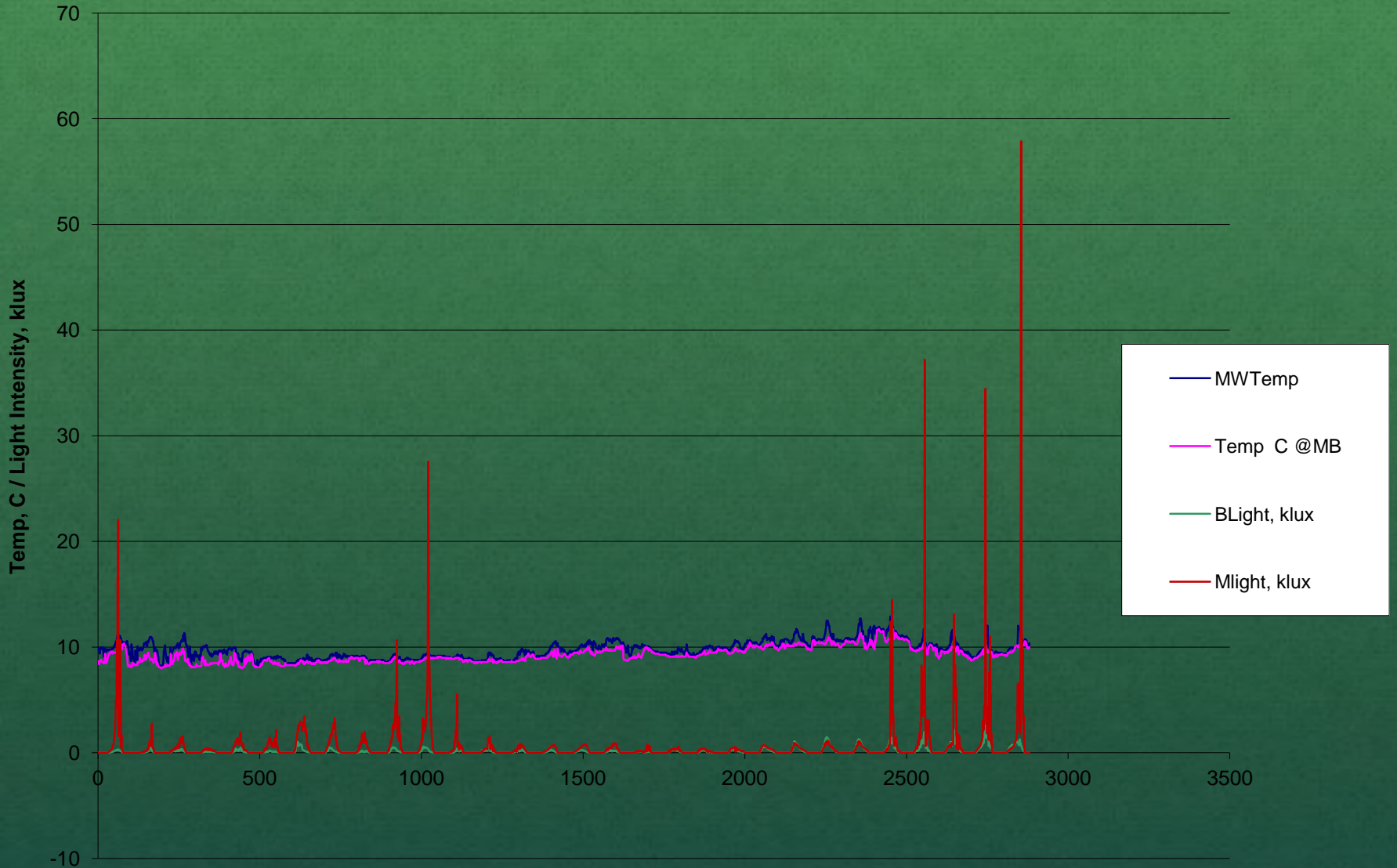
Checked and cleaned every 2  
months

Downloaded at end of Fall for  
analysis



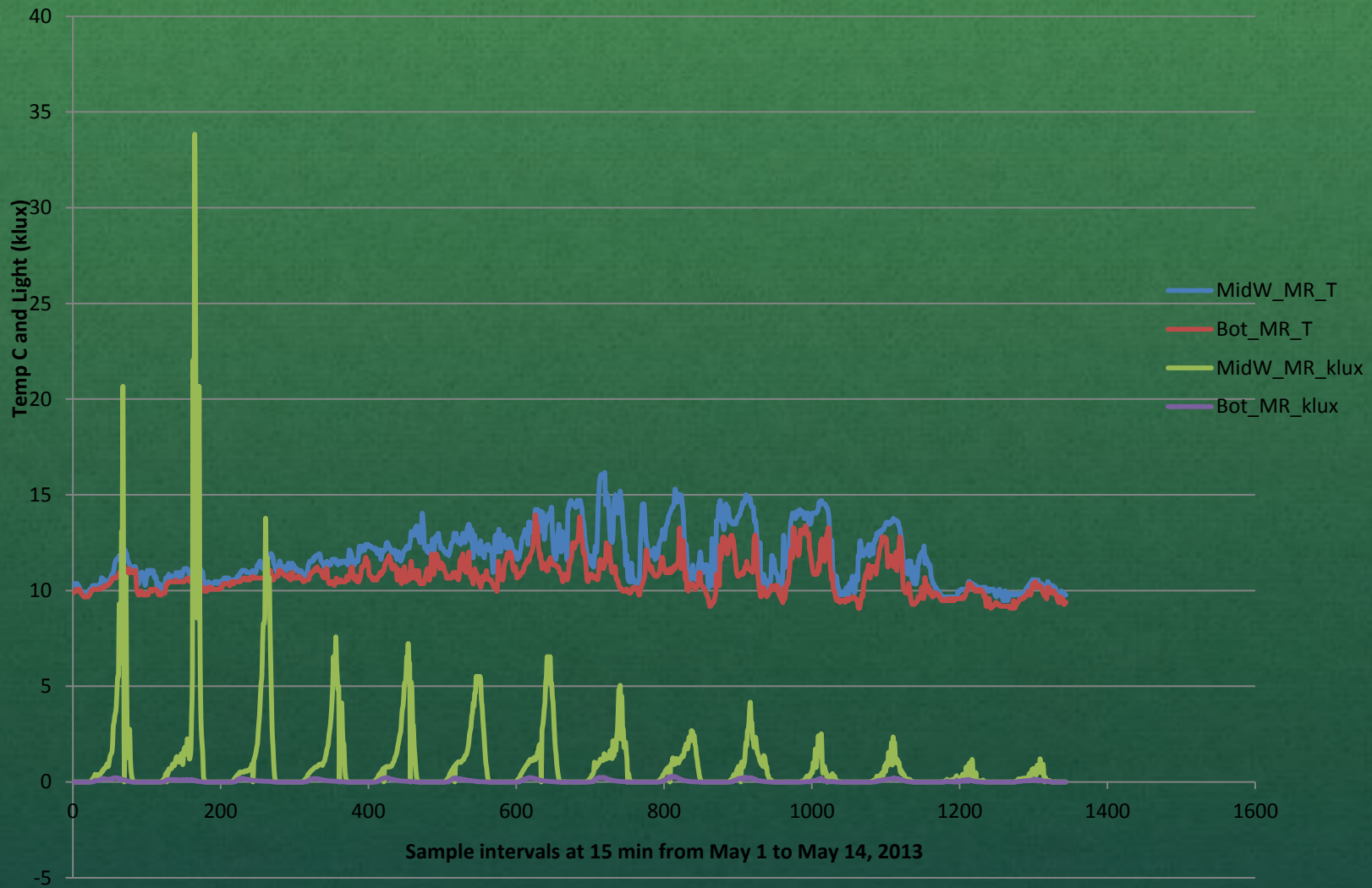


# Temperature and Light Intensity at Mid-water and Bottom depths at Maude Reef Kelp Grid, April 2013



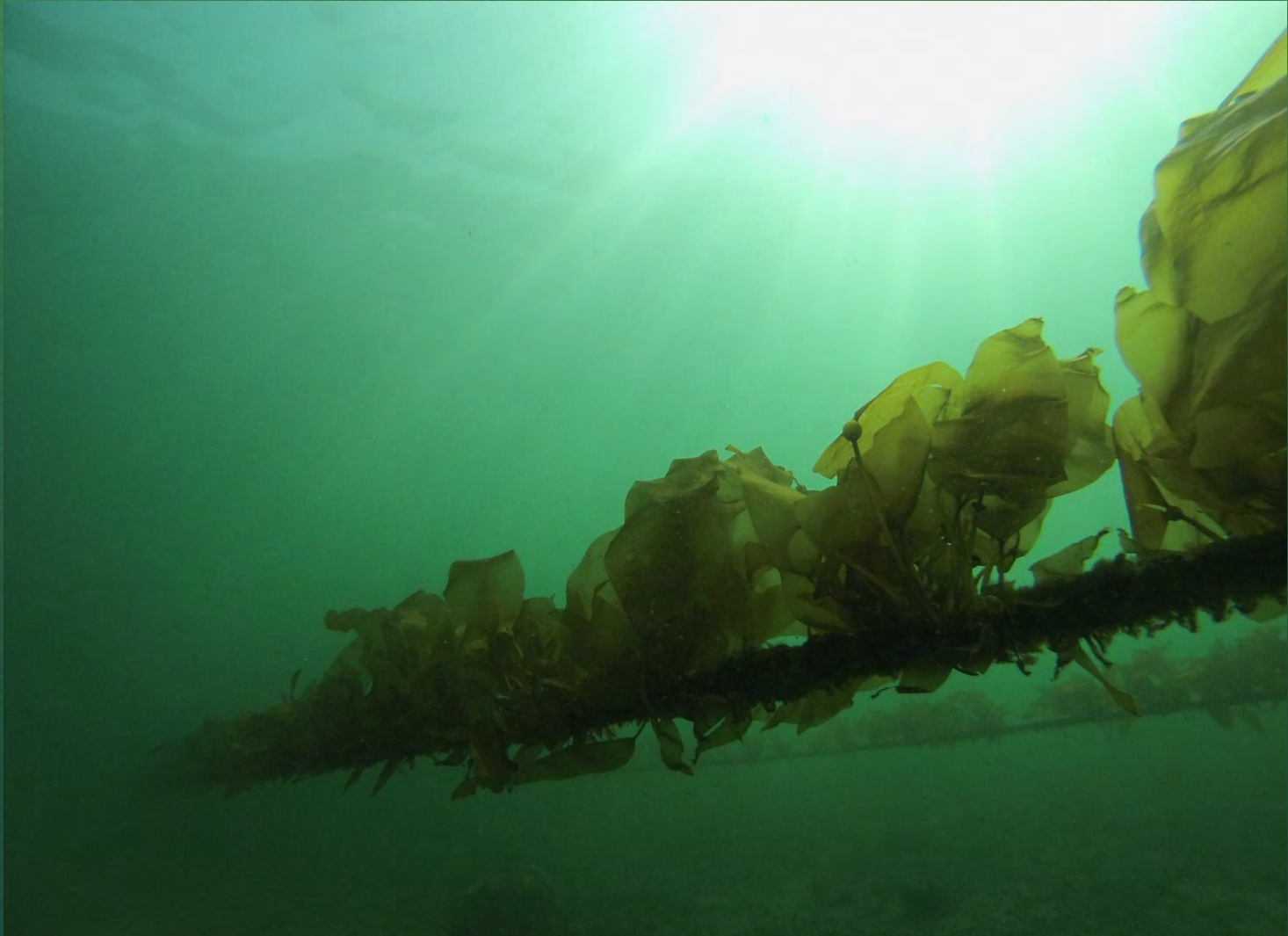
Sampling events at 15 minute intervals with Hobo data loggers at bottom and 20 ft above

# Combined Temperature and Light Data at Maude Reef for May 1-14, 2013





# New growth in 2014 on the culture grid









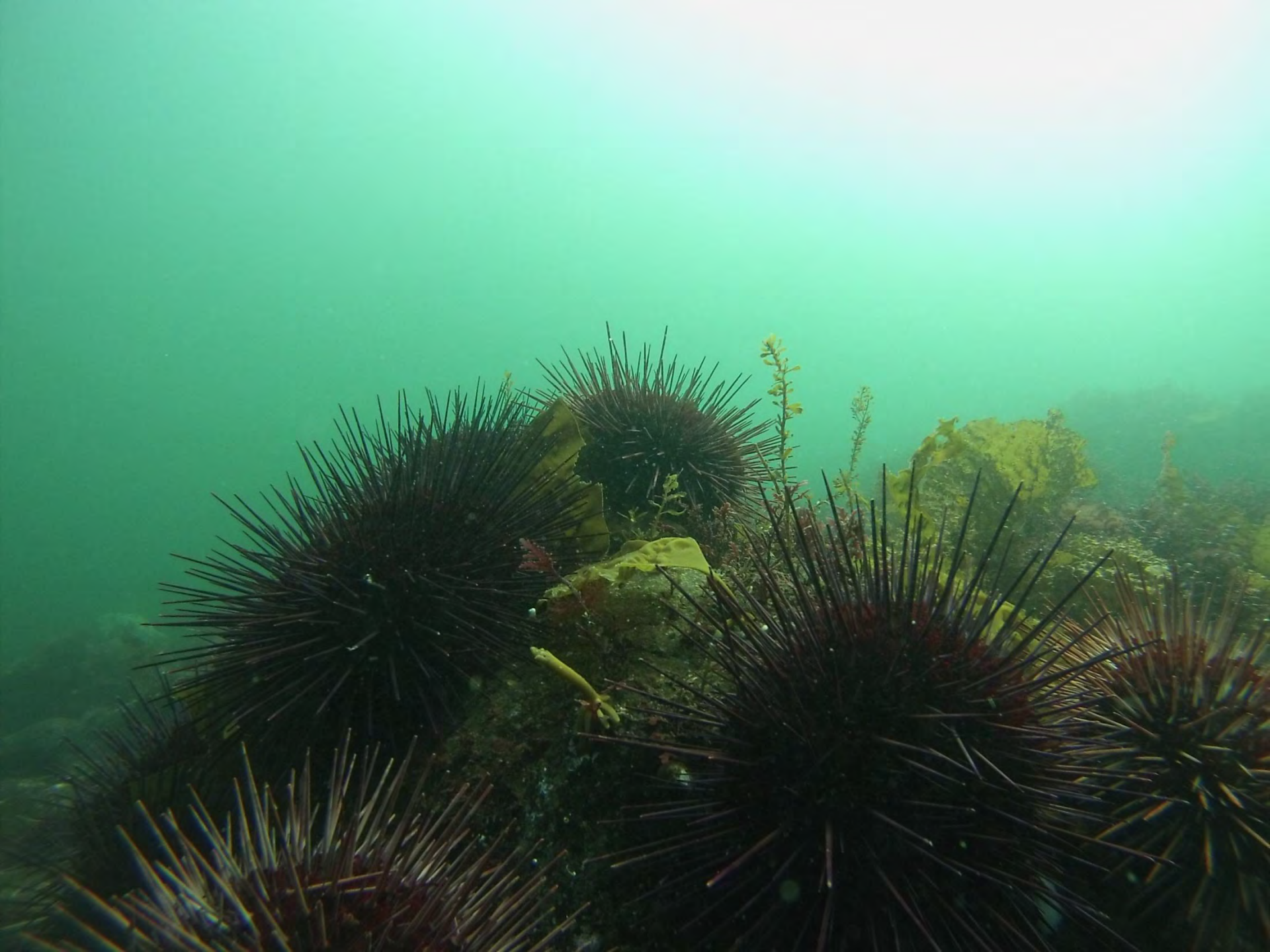














# Next steps

- The Pacific Salmon Foundation has been a major source of our funding to date, but we were unsuccessful in a recent application for continued support. Continued effort is now all by volunteers.
- CURRENT GOALS
- Monitor grid for 2014 growing season at Maude Reef;
- Monitor at wild kelp bed (S. Denman I.);
- Transplant trial, moving some mature plants to the grid
- Develop a project summary document to share with other groups who are interested in kelp restoration
- Fund-raising efforts for future work

# Next steps

- It is encouraging that in the past two years the wild kelp in the central Strait of Georgia did better than it has in several years.



# Thank you!

- QUESTIONS?