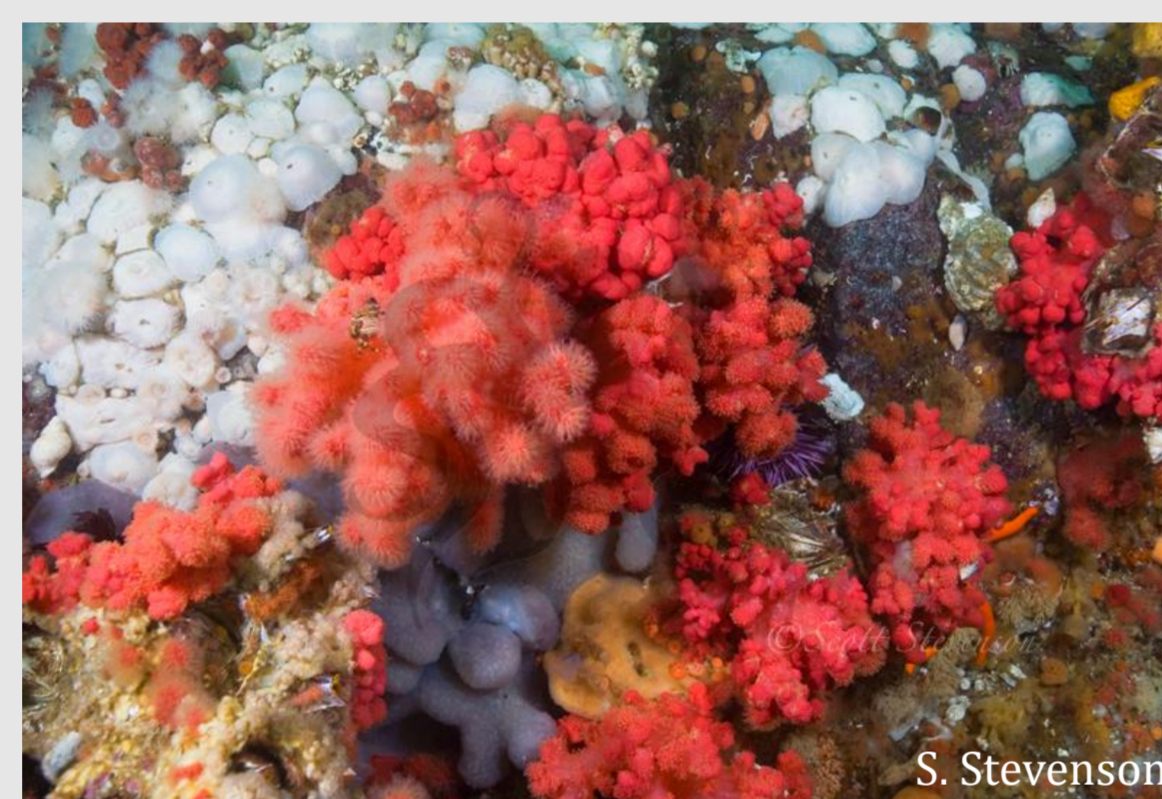
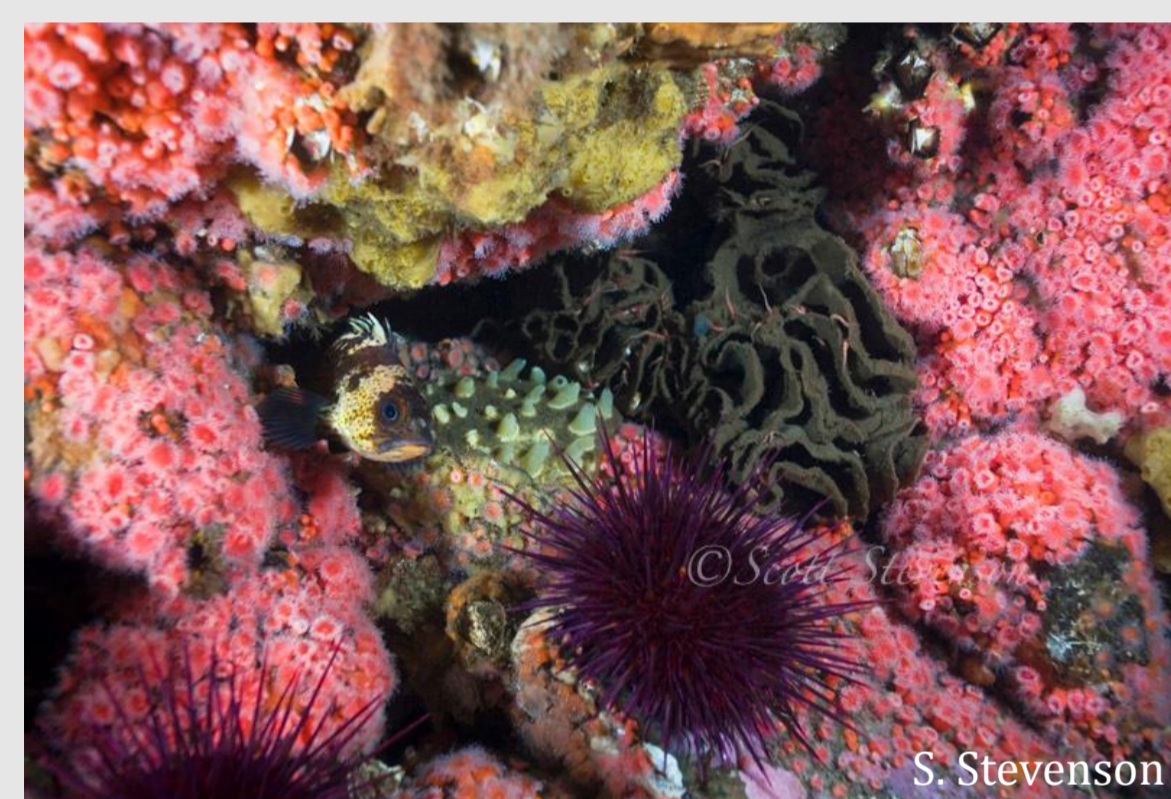


# Effectively restoring a subtidal marine ecosystem: Does habitat complexity matter?

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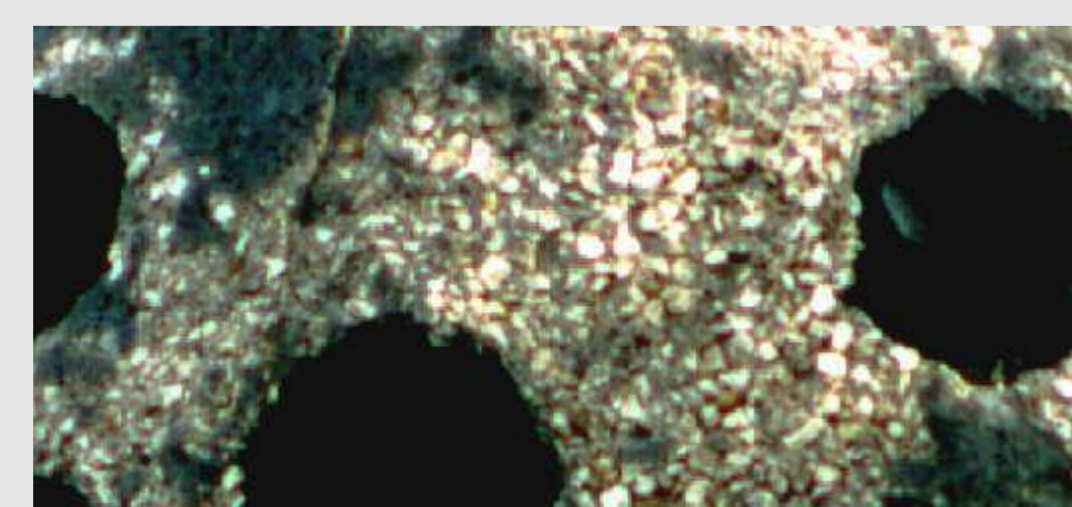
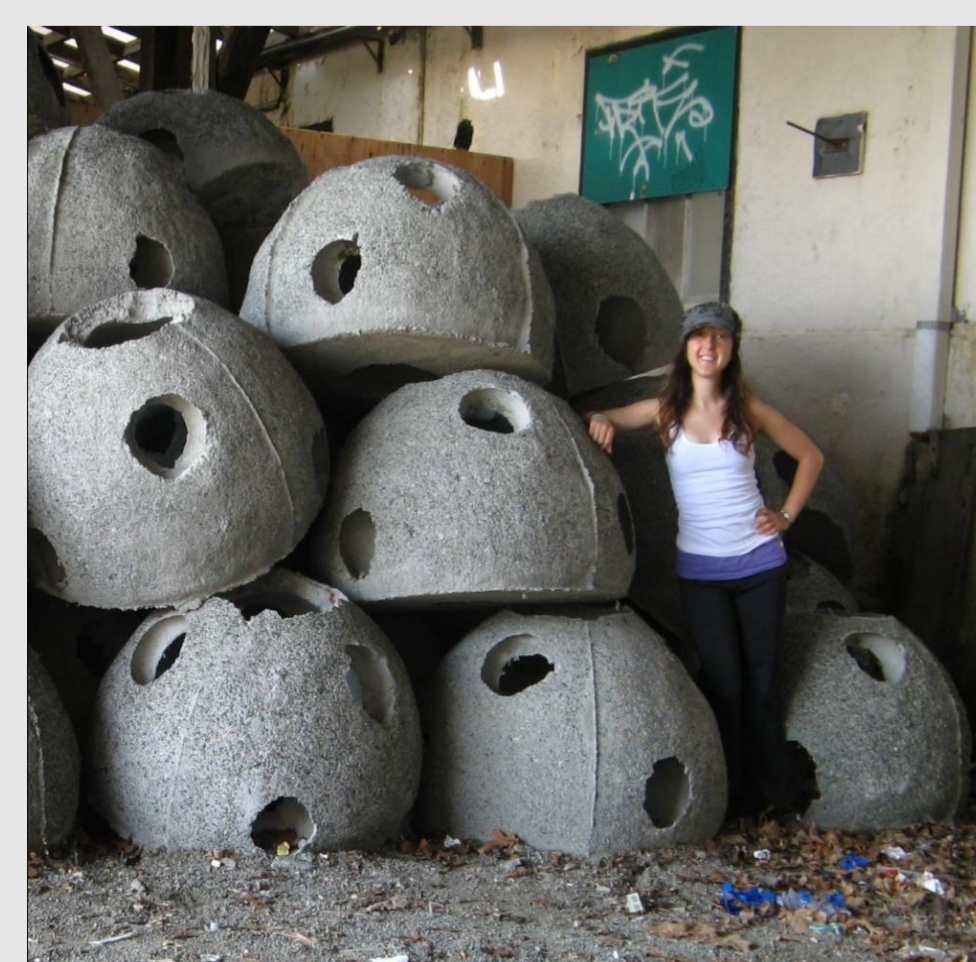
## Introduction

- Nearly 7,000 marine species exist in British Columbia, making up 4% of the world's total marine species
- 45 marine and estuarine species in BC have been listed as threatened, extirpated or endangered
- How to effectively restore subtidal diversity is poorly understood
- In terrestrial environments, habitat complexity and biodiversity are tightly linked
- My project will determine the role of habitat complexity in restoring subtidal diversity



## Questions

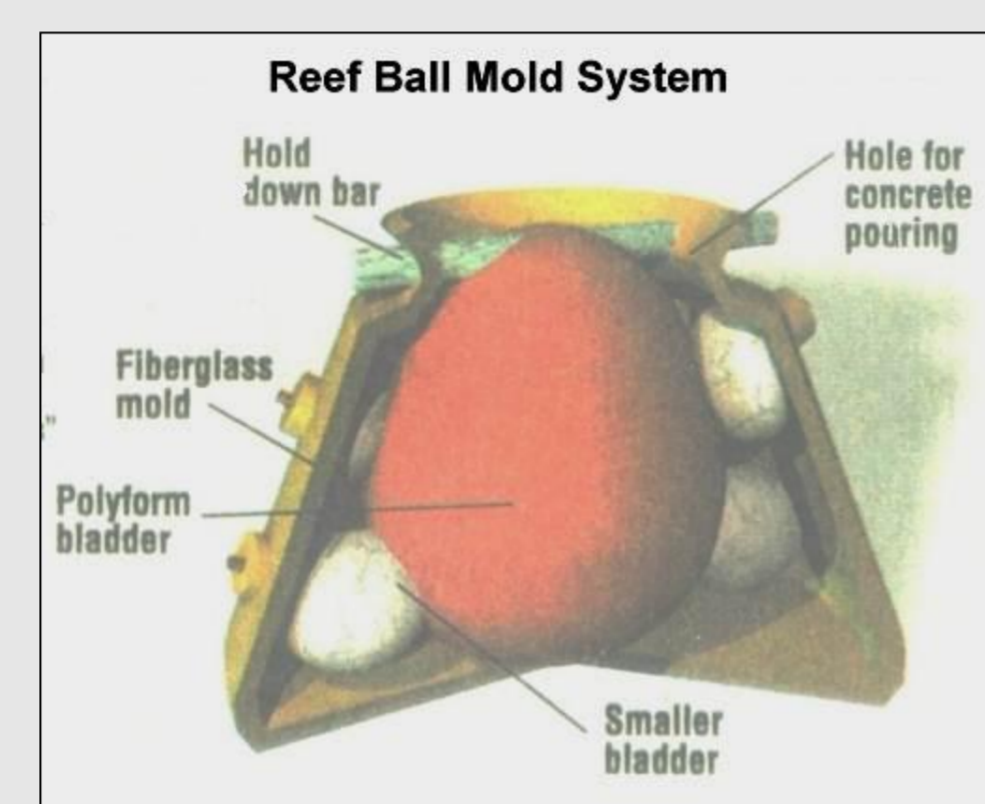
- Does habitat complexity increase diversity of sessile species in a rocky subtidal marine environment?
- If marine life is removed from a small area on the Reef Ball, is the community that re-assembles similar to the community on the remainder of the Reef Ball?



Reef Ball – is an artificial reef structure designed to create marine habitat

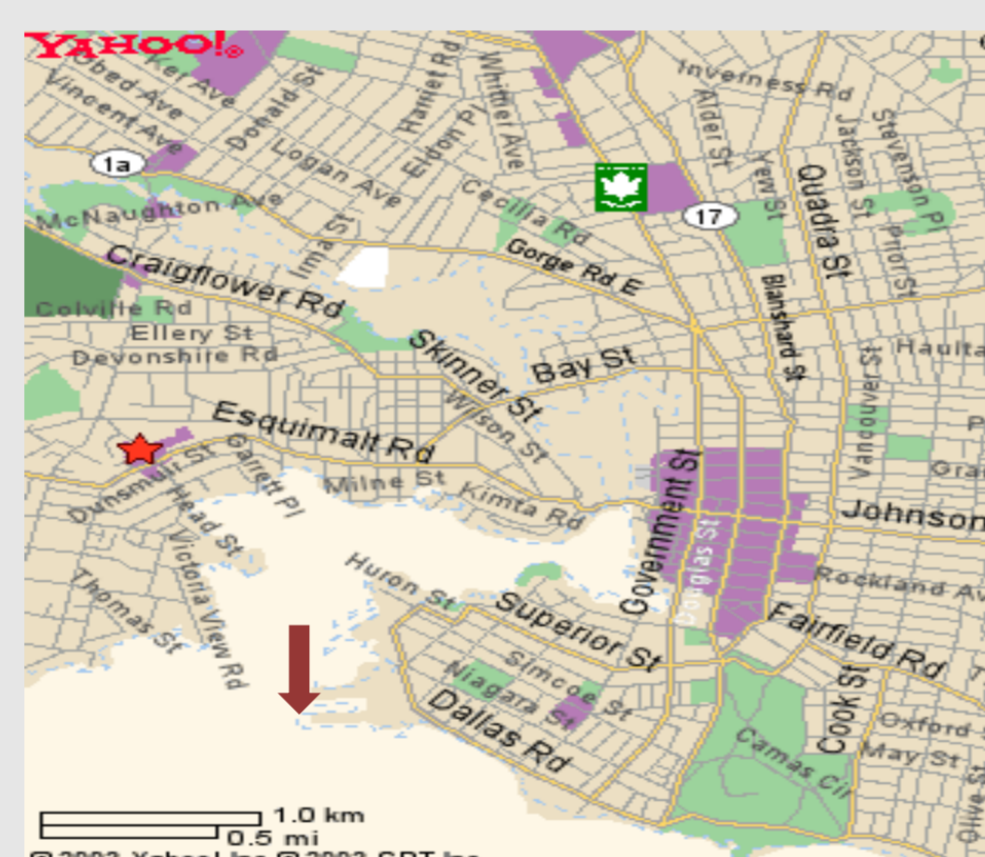
## Methods

### Reef Balls



- 100 Reef Balls were donated by Ralmax Ltd. to the Veins of Life Watershed Society (VOLWS), Victoria, BC

### Study Site



Reef Balls under water

- Breakwater supports a great diversity of life due to high current velocities.
- 92 Reef Balls were randomly placed in the waters east of the breakwater in June 2009

## Predictions

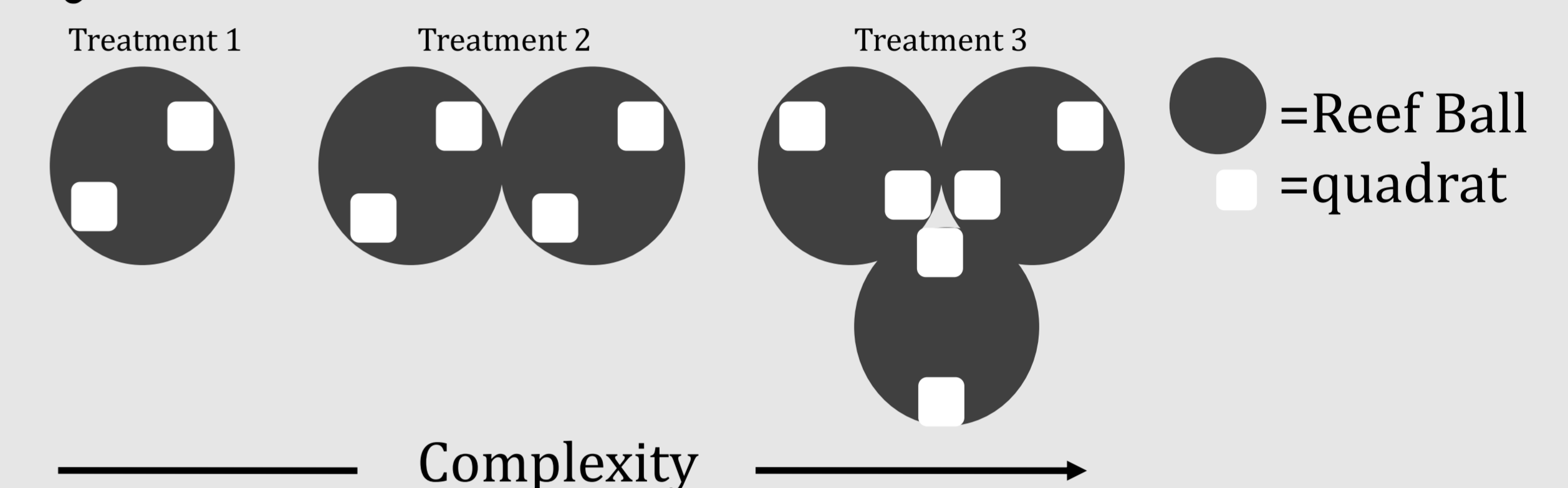
**Question 1:** Reef Balls placed in configurations of greater habitat complexity will support a greater diversity of sessile species than those Reef Balls placed in configurations with less complexity.

**Question 2:** Re-assembled communities will not significantly differ from those on the undisturbed portions of Reef Balls.

## Methods

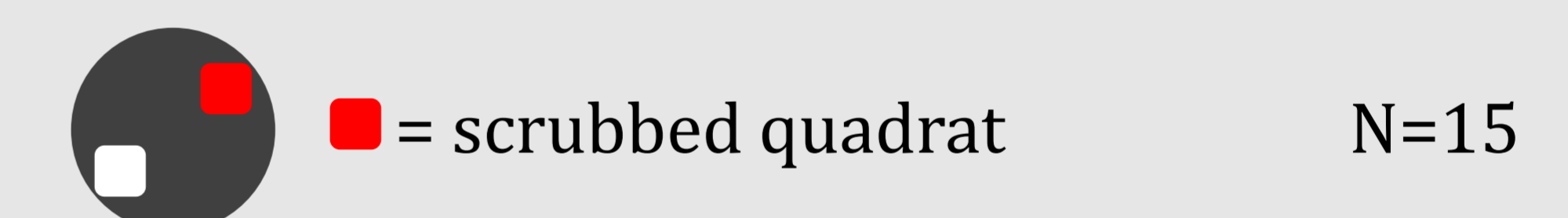
### Study Design – testing habitat complexity

#### Question 1



N = 12  
Total replicates = 12 x 3 = 36  
36 x 2 quadrats/Reef Ball = 72

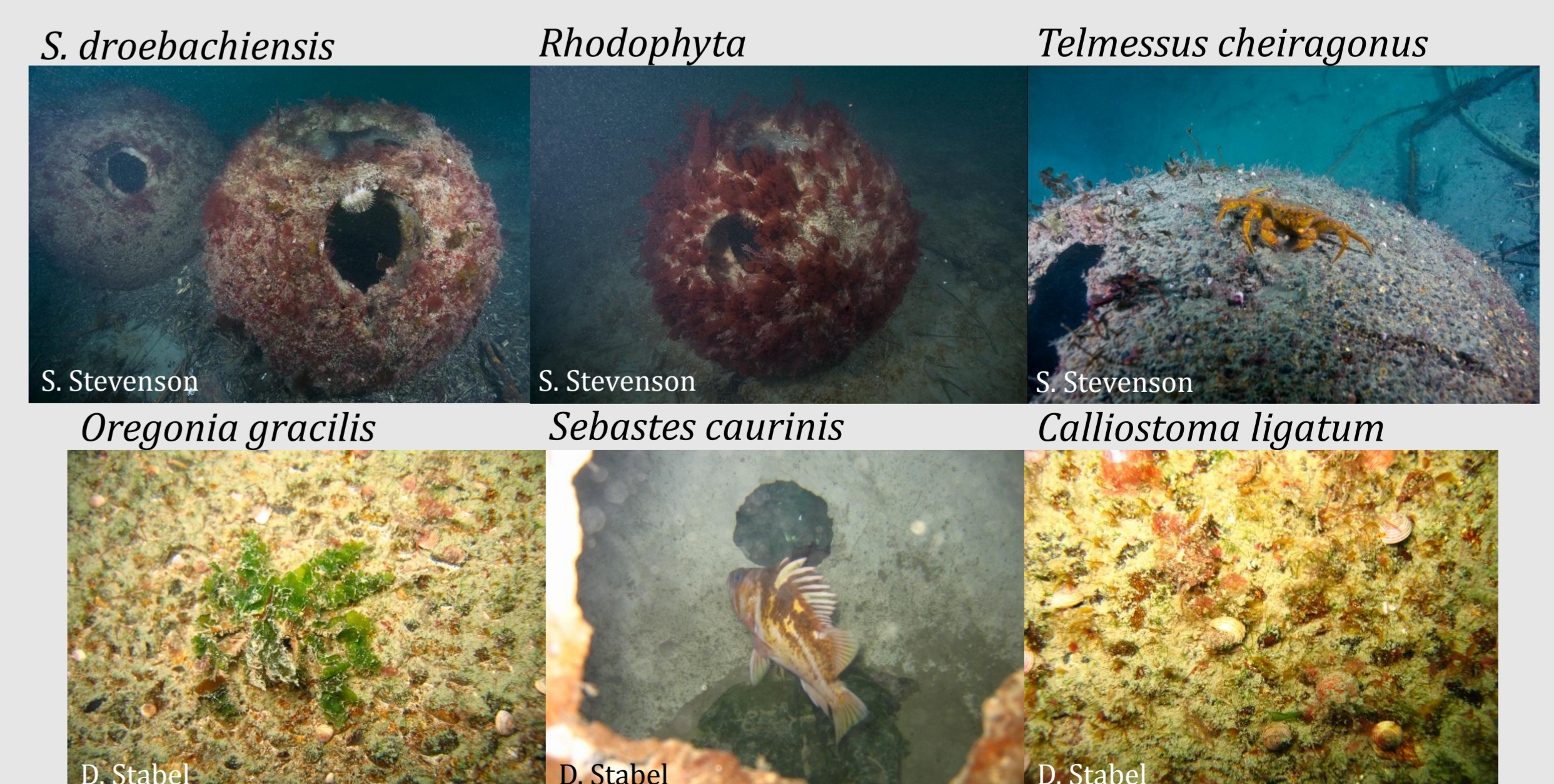
#### Question 2



M. Blazecka

- Weekly photo and visual surveys for 5 months
- Algal and other sessile species will be identified using Image J
- Percent cover will be analyzed using Image J

## Observations



References: BC Conservation Data Centre Home <http://www.env.gov.bc.ca/cdc/>; Sierra Club BC <http://www.sierraclub.bc.ca/seafood-and-oceans/>; Lassau, S.A., Hochuli, D.F., Cassis, G. & Reid, C.A.M. (2005) Effects of habitat complexity on forest beetle diversity: do functional groups respond consistently? *Diversity and Distributions*. 11: 73-82.

Acknowledgements: NSERC, MITACS, T Buck Suzuki, VOLWS, Ralmax, John Volpe, Brian Starzomski, Doug Biffard, all my diving volunteers