

Detached effects seaweeds on soft-bottom community structure

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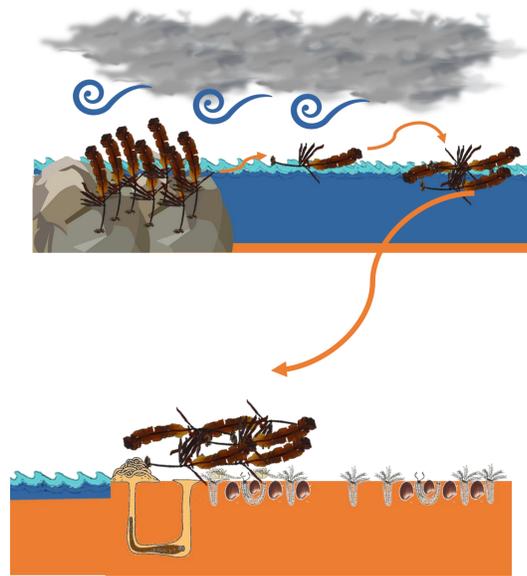
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INTRODUCTION

Climate change has increased the frequency and strength of storms in the Arctic. This may trigger high waves and strong swell, causing the detachment of sessile organisms like seaweeds.

The deposition of seaweeds on the shore could modify the structure and composition of sedimentary communities due to the advantages (↑ food, ↑ complex habitat) and disadvantages (↓ oxygen and ↑ physical disturbance) of the presences of the seaweed.

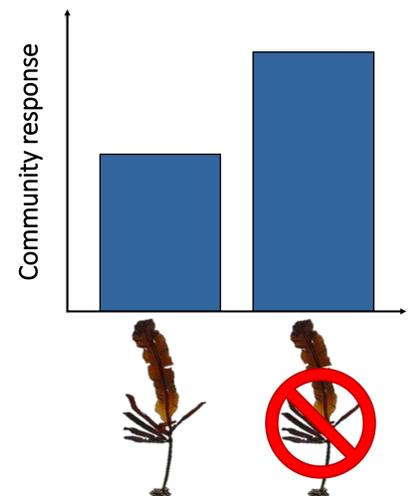


GOAL AND HYPOTHESIS

To determine if detached seaweeds can interfere with the structure of the intertidal sedimentary communities in Svalbard, Arctic Norway.

Presence of detached seaweeds will

- Decrease abundance
- Decrease biomass
- Decrease diversity
- Change the species composition of the sedimentary community.

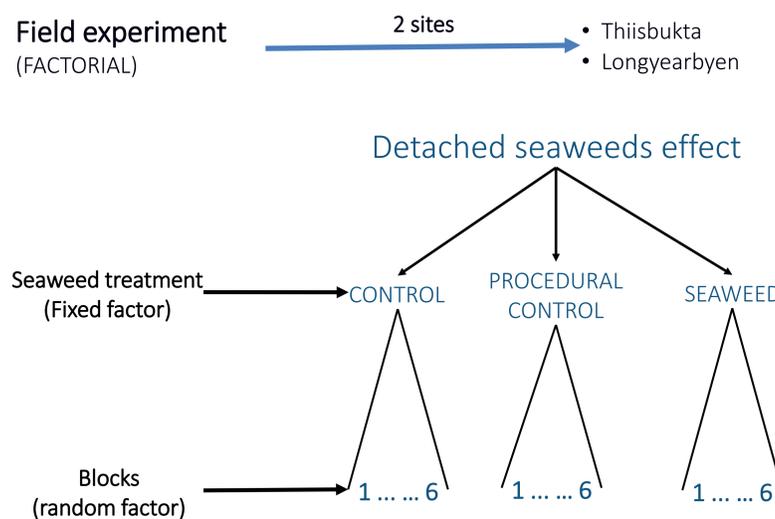


STUDY SITES



Map of Svalbard, Norway

EXPERIMENTAL DESIGN AND SAMPLING



Start: May 2017

End: August 2017



Control (Unmanipulated area)



Procedural control (empty net)



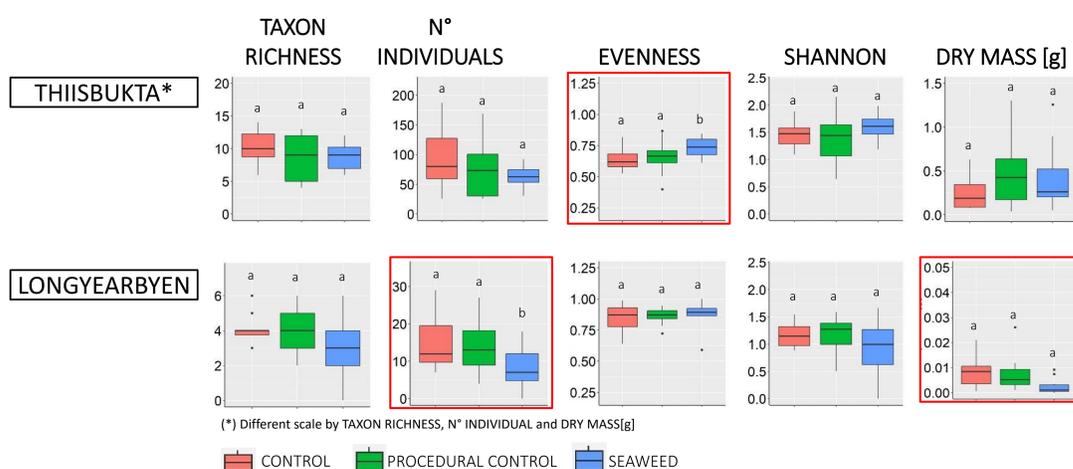
Seaweed (net + seaweeds)



Sediment core with a sample

RESULTS

- The presence of detached seaweeds increased **evenness** (17.6%) only in one site (**Thiisbukta**).
- Only In **Longyearbyen**, the **number of individuals** (14.3%) and **biomass** (30%) were negatively affected by detached seaweeds. No effect by manipulation.



(*) Different scale by TAXON RICHNESS, N° INDIVIDUAL and DRY MASS[g]

CONTROL PROCEDURAL CONTROL SEAWEED

ABUNDANCE

DETACHED SEAWEEDS EFFECT



Euchone analis

More abundance 39% in Thiisbukta
Absence in Longyearbyen



Capitella capitata

18% (Thiisbukta)
19% (Longyearbyen)



Pygospio sp.

46% (Longyearbyen)
Low presence in Thiisbukta



In **Longyearbyen** the composition of the benthic assemblage was also significantly affected by **SEAWEED** treatment.

CONCLUSION

Detached seaweeds affect the sedimentary community.

The impact of seaweeds on sedimentary communities will be negative or positive depending on the conditions of the site.

Possibly the effects of the detached seaweeds on sedimentary communities will have repercussions on food-web.



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