

A Green Slide for the Future

Effects of seasonality on the ecology of Norwegian fucoid species in a climate change context.



SCAN ME



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Background and motivation

My career is linked to the study of **impacts affecting coastal ecosystems**. I studied the impacts of fish farm escapees in the southeastern Mediterranean coast; the effects of aquaculture nutrients on pelagic processes, have experience in benthic taxonomy, abundance and composition of pelagic species; effects of aquaculture on benthic organisms and the use of macroalgae bioremediation of anthropic-derived nutrients and other human-induced effects on the environment.

The SEAS program gave me the resources, support and connections I was looking for when I started my postdoctoral stage. Being in Bergen gave me the chance to train in an interdisciplinary environment where collaboration and connections with other academic or industry partners are of paramount importance.

Project description

I study **seasonality-induced changes in macroalgae fucoids and their consequences**. Dexterity in the analysis of high-latitude macroalgae responses to changing environmental conditions is key in predicting future outcomes and establishing management policies involved in adjacent fields such as conservation or exploitation.

Main questions

- >How is grazing, as a top-down mechanism, affected by climate change and what consequences are in store for macroalgae?
- >How resilient are different populations of macroalgae to climate change?
- >Is there an effect on their phenology or defense mechanisms?
- >Has this changed over the last decades?

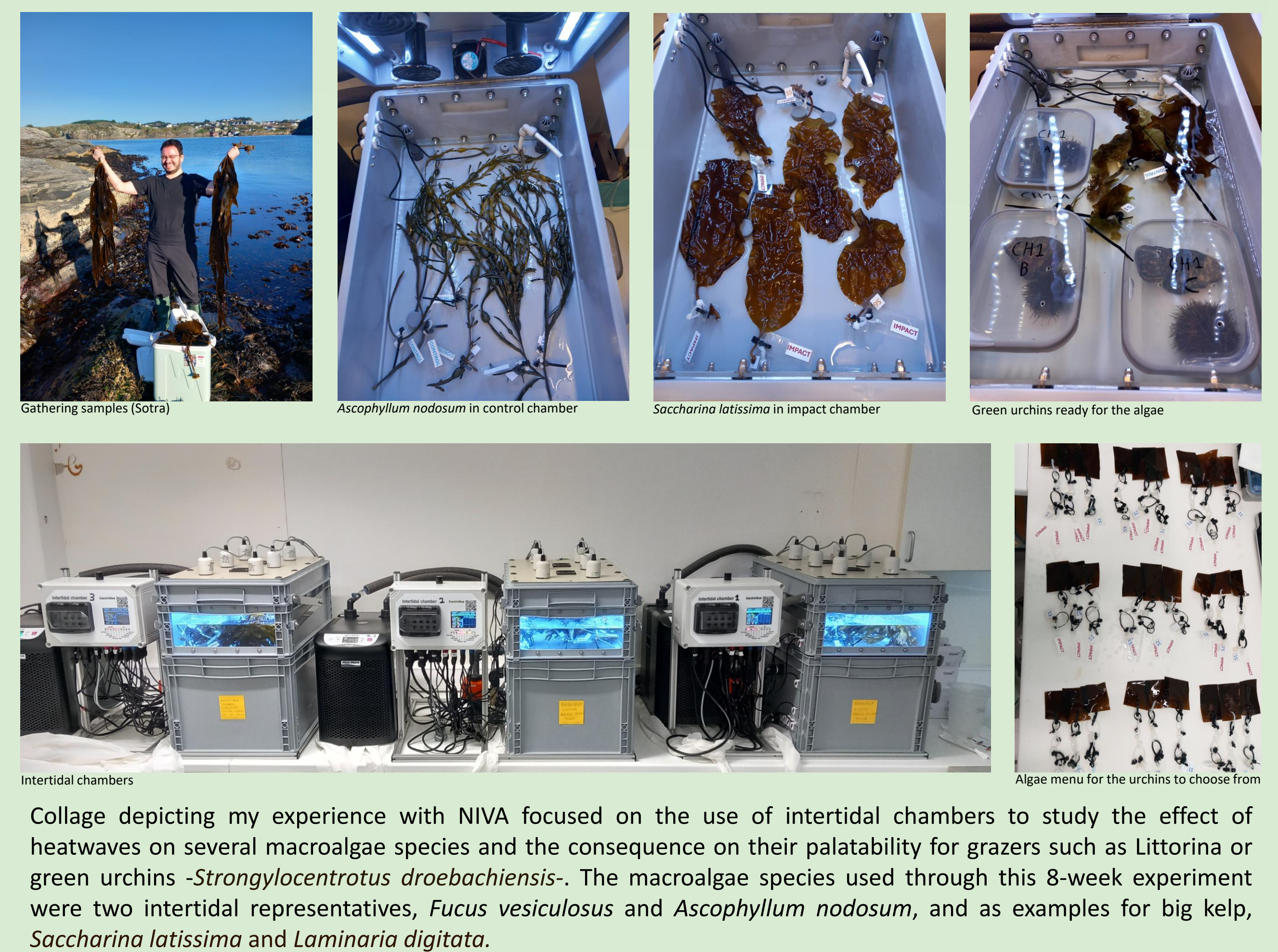
Aims (and/or milestones)

- I set up collaborations with other SEAS fellows, labs, companies and research institutions –e.g.: UiT-.
- Studied the top-down effect of normal grazing through a hot season on the growth of *A. nodosum*.
- Explored the defense mechanism of *A. nodosum* against herbivory under climate change conditions.
- Studied the resilience of macroalgae populations in Norway's Fjords through population genomics.
- Explored the effect of heatwaves on big kelps and coastal intertidal species.



Diagram with part of the skills learnt from my current and past experiences.

Collaboration with NIVA



Marine sustainability

Macroalgae sequester CO₂, act as pollution bioindicators, and provide a reliable source of biomass and vitamins. They support marine fauna, and some species are ecosystem engineers. Preserving them is crucial amid climate change, aligning my work with **UN Sustainable Development Goals 13 and 14**.

Highlighted results (and/or activities)

>Research insight & results:

-Collaboration experiments with NIVA completed, as well as datasets for three experiments obtained –and 2 more close to completion-.

-Understanding of the thermal limits of several grazers and macroalgae

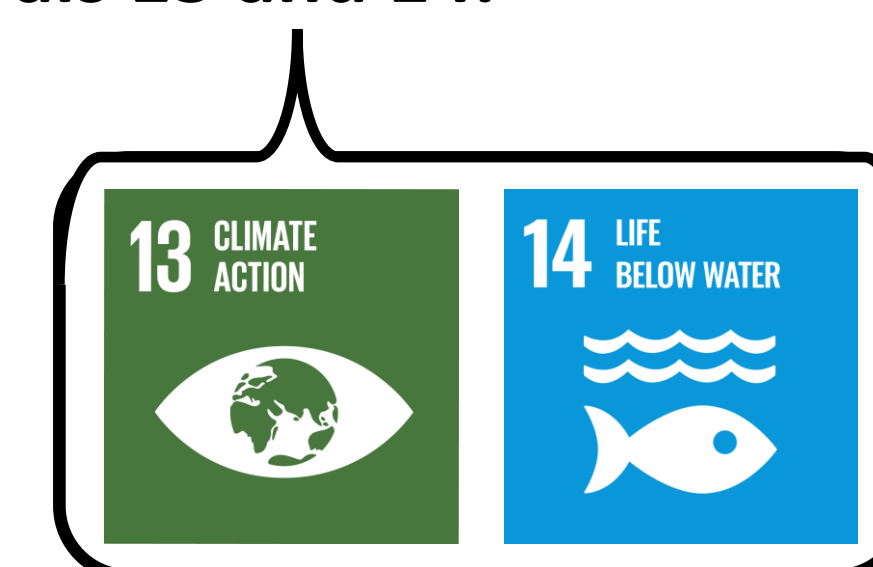
>Ongoing & next steps:

-Finish DNA extraction procedure and phenology samplings.

-Look for new job offers!!

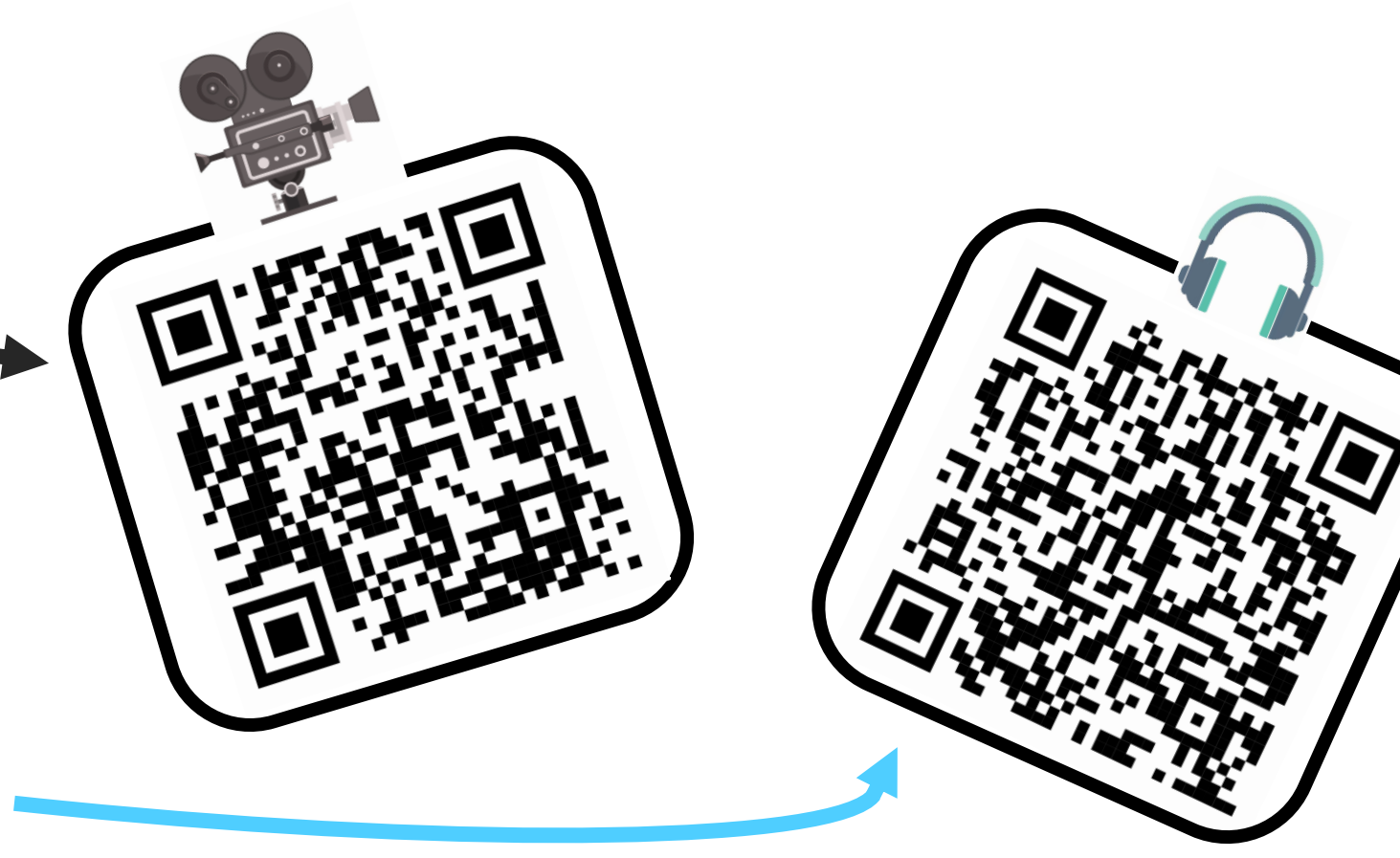
>Other activities:

- Skype a scientist initiative.
- Norwegian course for employees.
- Conferences: OIKOS '24, ECCWO5 and BEScience IV.
- Featured in a documentary aired in Spanish TV called *Valencians al món*.
- Sognefjord research cruise on board of the OceanXplorer vessel.
- SEAS Outreach Group activities (Take a look at our podcast!)



Supervisory team

Øystein Varpe Kjersti Sjøtun



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