The future of seawater biogeochemical monitoring at Tvärminne Zoological Station

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Background

Coastal ecosystems are highly productive and dynamic in terms of ocean-atmosphere carbon fluxes. They can potentially act as powerhouses of mitigation to combat climate change. However, comprehensive understanding on how coastal biodiversity contributes to carbon sequestration and air-sea greenhouse gases exchange is still needed.

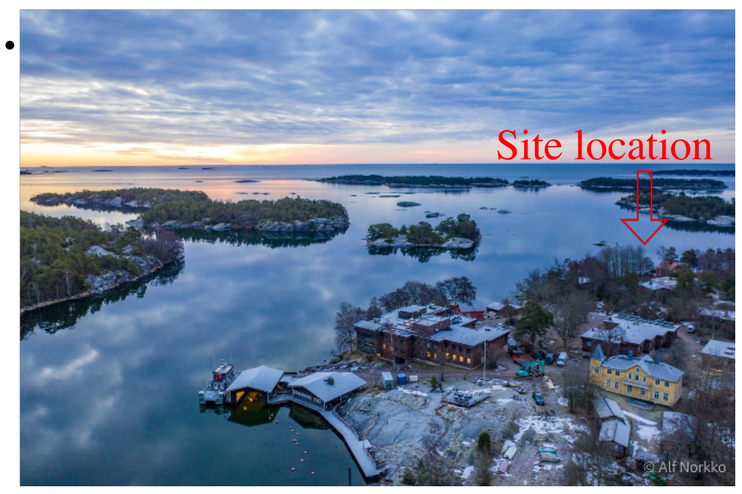
Objectives

Understand and quantify the feedbacks between coastal ecosystems and greenhouse gases exchanges by investigating how benthic and pelagic systems regulate water column biogeochemistry, and therefore, contribute to greenhouses gases exchanges with the atmosphere.

Method

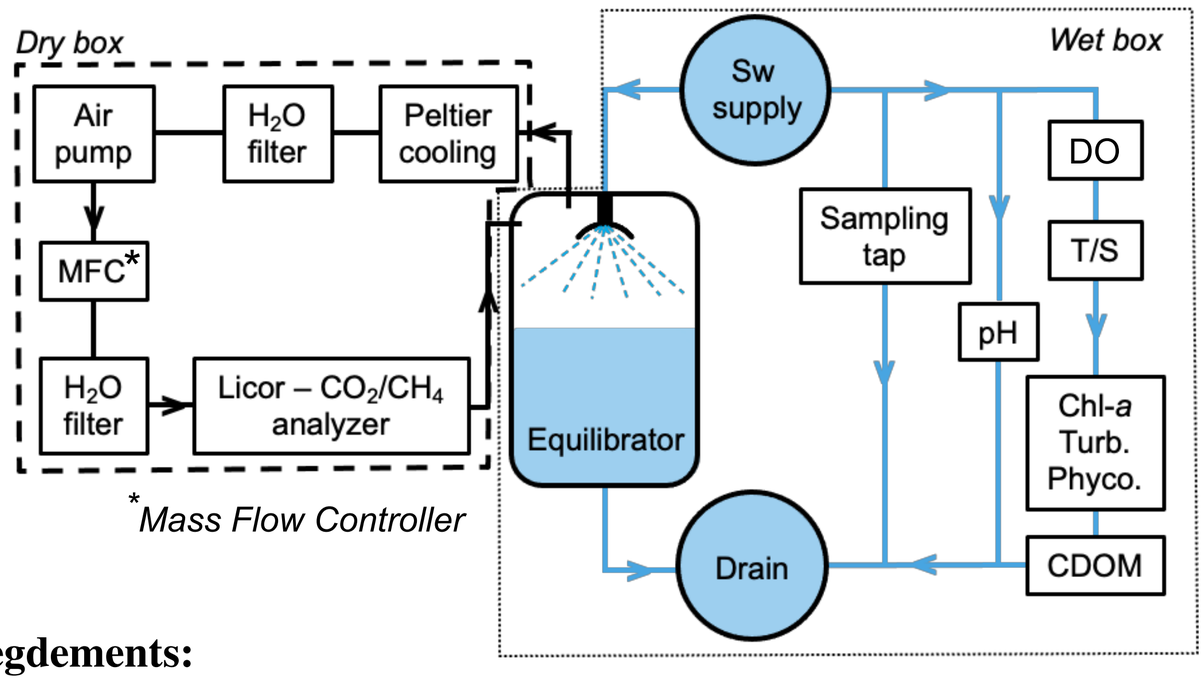
We are developing a fast-response automated gas equilibrator system (CO_2 and CH_4 analyzer from Licor), associated with sensors for seawater temperature and salinity (T and S from SeaBird), dissolved oxygene concentration (DO, from Aanderaa), coloured dissolved organic matter (CDOM, from Uvilux), pH (from Sunburst), and chlorophyll-*a* concentration, turbidity, and phycocyanin (Chl-*a*, Turb., and Phyco., from TriLux).

A.



B.

C.



A. Tvärminne Zoological Station, **B.** Trailer laboratory installed on the coast, location of the seawater intake, **C.** Planned laboratory setup in the trailer.

Preliminary raw-data available here:

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