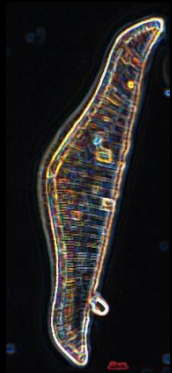


Threshold effects of climate change on benthic diatom communities: Evaluating impacts of salinity and wind disturbance on functional traits and benthic biomass

Virta, L. & Teittinen, A. 2022. *Sci Total Environ* 826, 154130

Salinity and wind-induced wave disturbance strongly affect biotic communities in marine and brackish environments



Climate change is predicted to decrease salinity and increase wind-induced wave disturbance



Threshold effects on benthic diatom communities

Lower salinity

- Higher diversity
- Higher abundance of low-profile species
- Smaller biomass

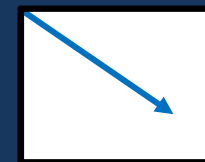
Stronger wind-induced wave disturbance

- Context-dependent effects on diversity and functions
- No effect on biomass

Correlations between benthic biomass and benthic diatom communities

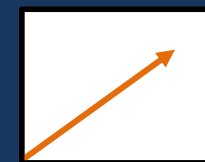
Negative:

- species richness
- abundance of small-sized species



Positive:

- functional diversity
- abundance of large-sized species



CONCLUSIONS: Decreasing salinity and increasing wind-induced wave disturbance may lead to threshold responses in biotic communities. These changes may have profound effects on ecosystem functioning along marine coastal areas.