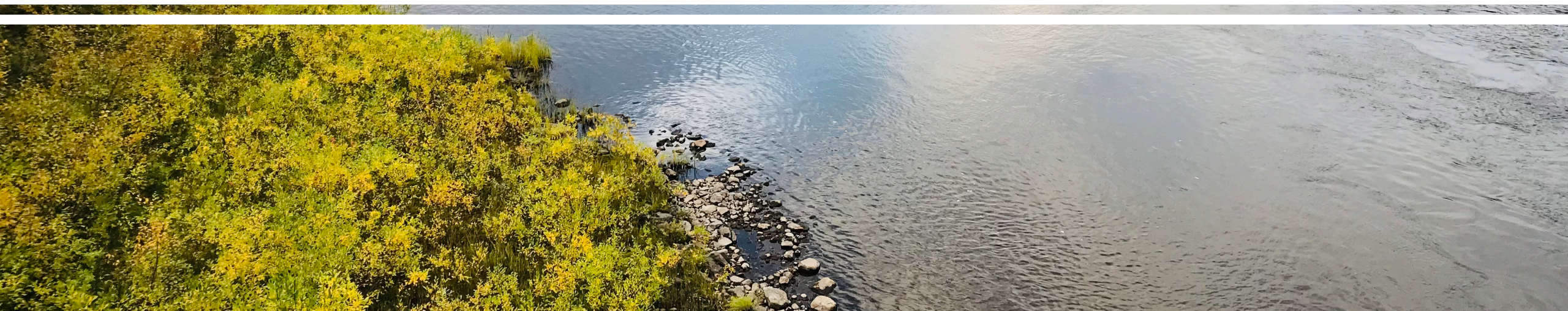
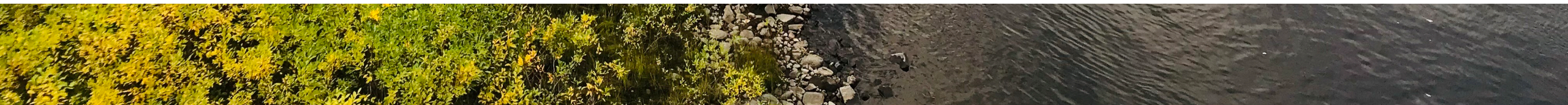


Sensors for Monitoring Water Quality & Ecosystem Functioning



Maeve McGovern, NIVA



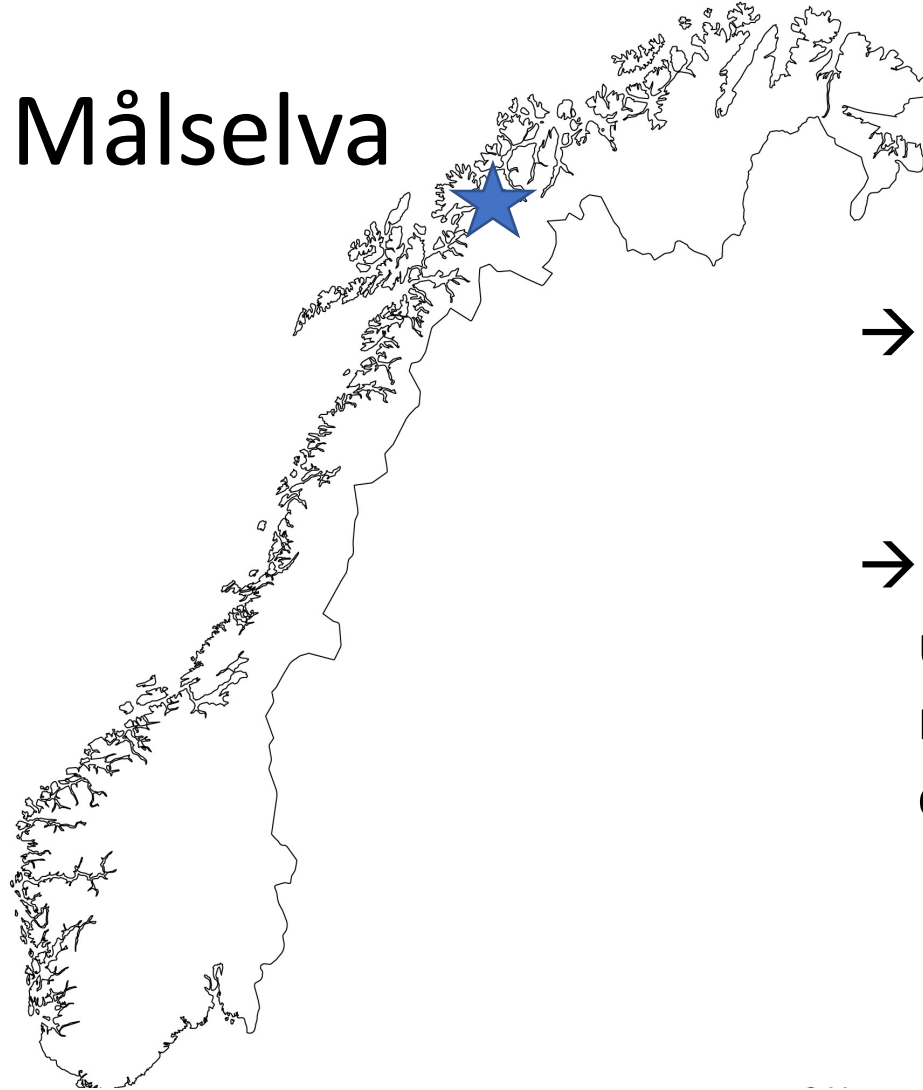
Why in-situ sensors?

- High temporal resolution
- Water quality proxies
- Ecosystem functioning and services.



Sensors for capturing extreme events

Måselva



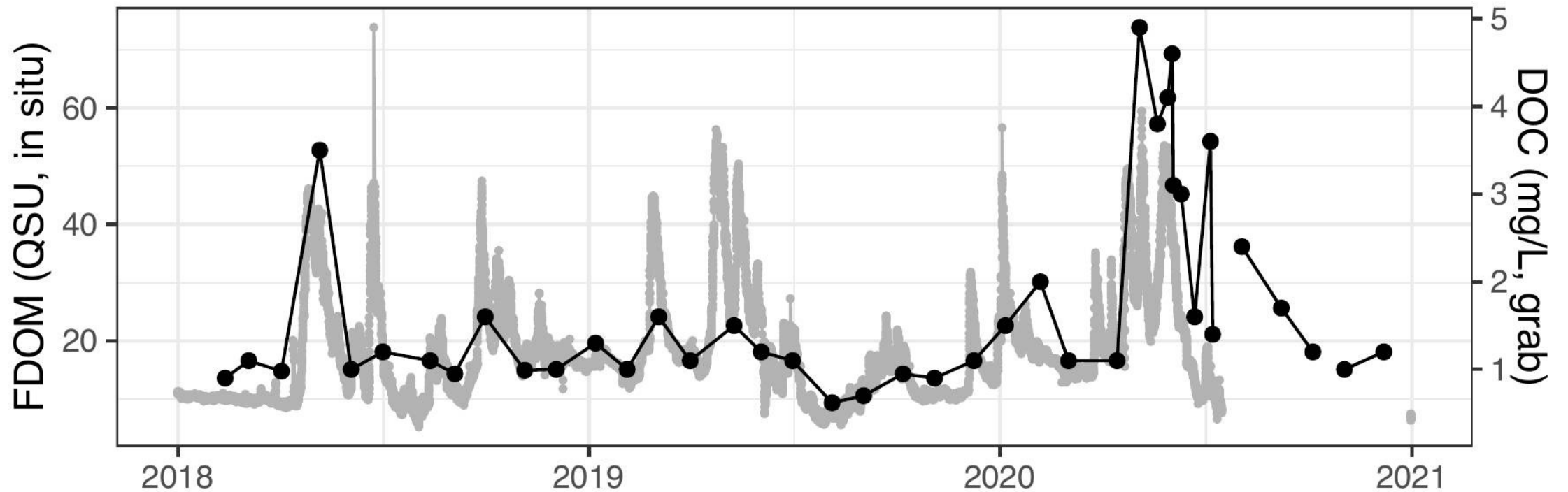
- ~60% of the river discharge occurs during the spring flood
- Traditional monthly sampling leaves high uncertainties in flux estimates of DOC, nutrients and suspended material to coastal environments

High Temporal Resolution Data Collection



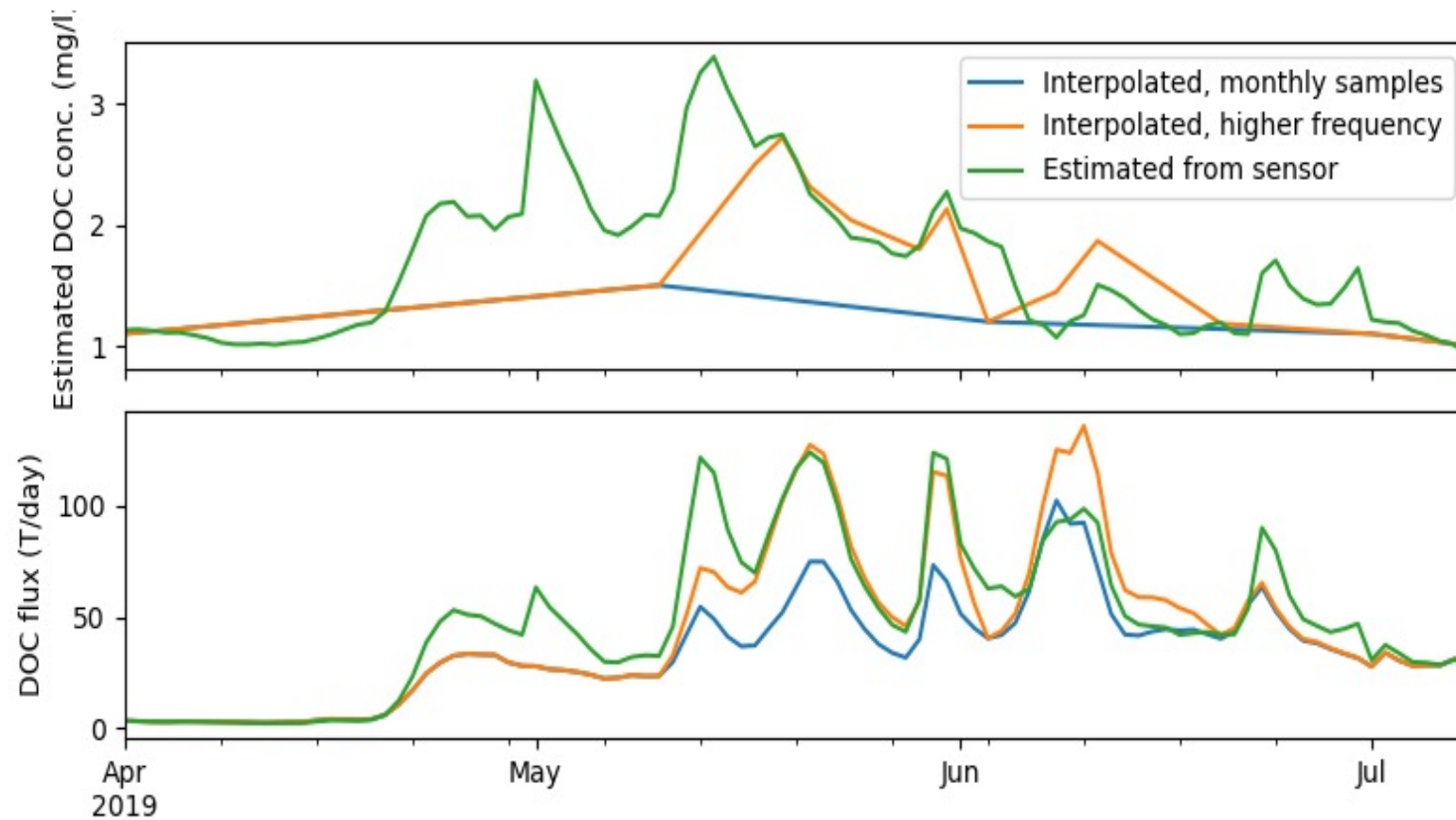
NIVA's Elveovervåking Infrastructure in Målselva

In-situ FDOM sensor and monthly DOC sampling



FDOM: Colored dissolved organic matter fluorescence measured using a TriOS microFlu-CDOM sensor

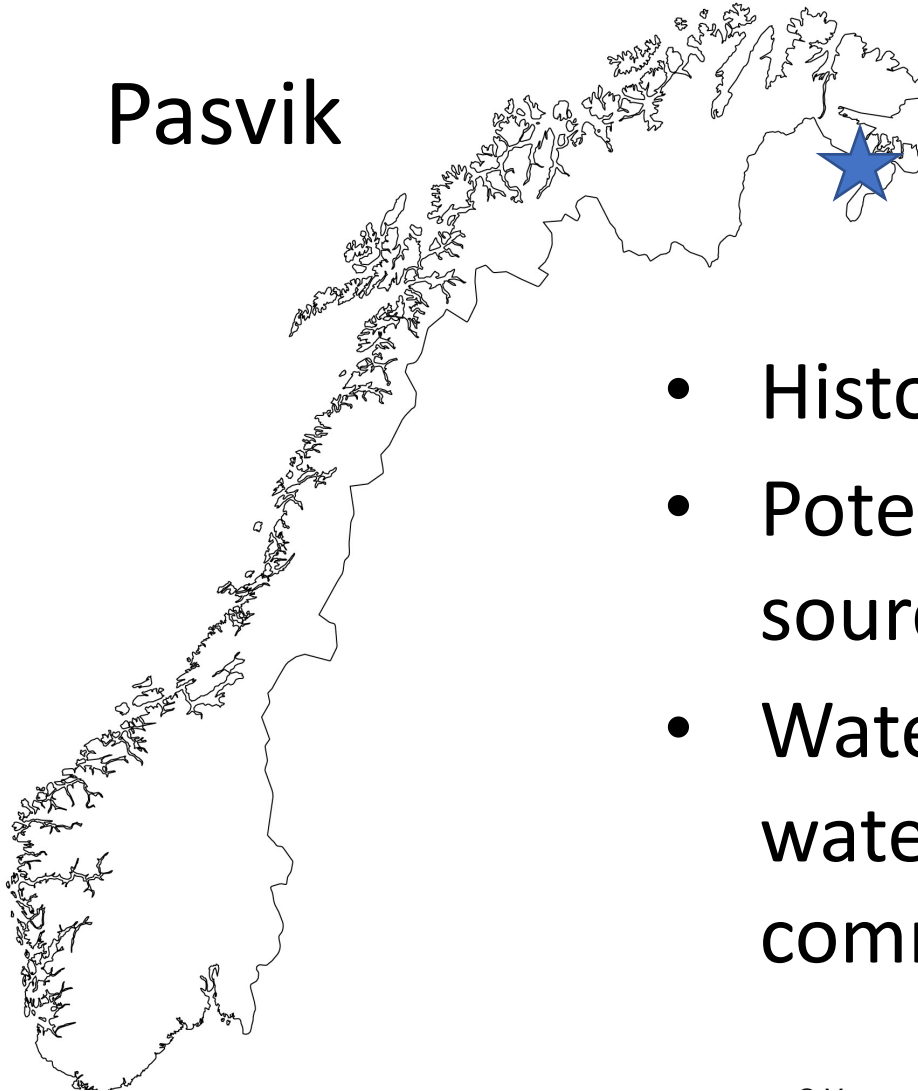
Using FDOM as a proxy for DOC improves flux estimations



Traditional flux estimates underestimated the Måselva spring freshet DOC flux by up to 30%.

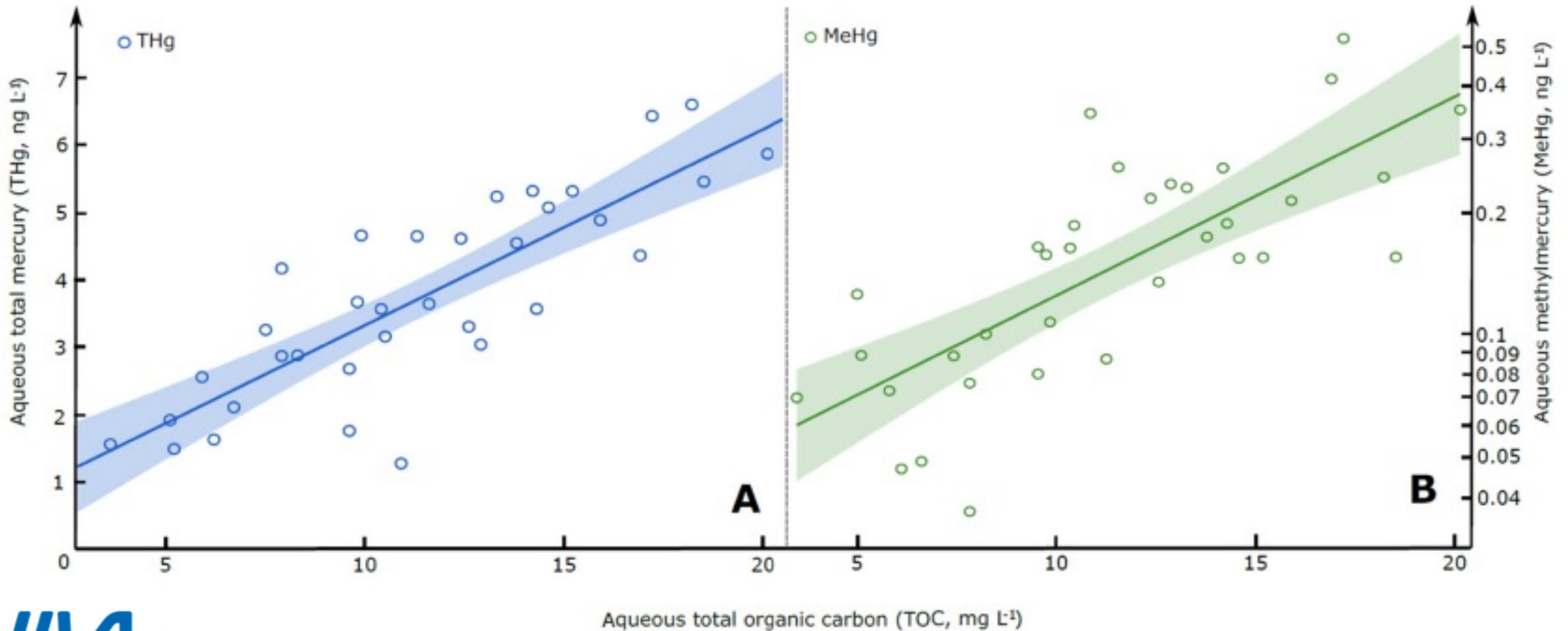
Water Quality: Hg contamination

Pasvik



- Historical Hg contamination
- Potential inputs from secondary sources under climate change
- Water resources used for drinking water, and for recreational and commercial fishing.

Organic-carbon associated contaminants

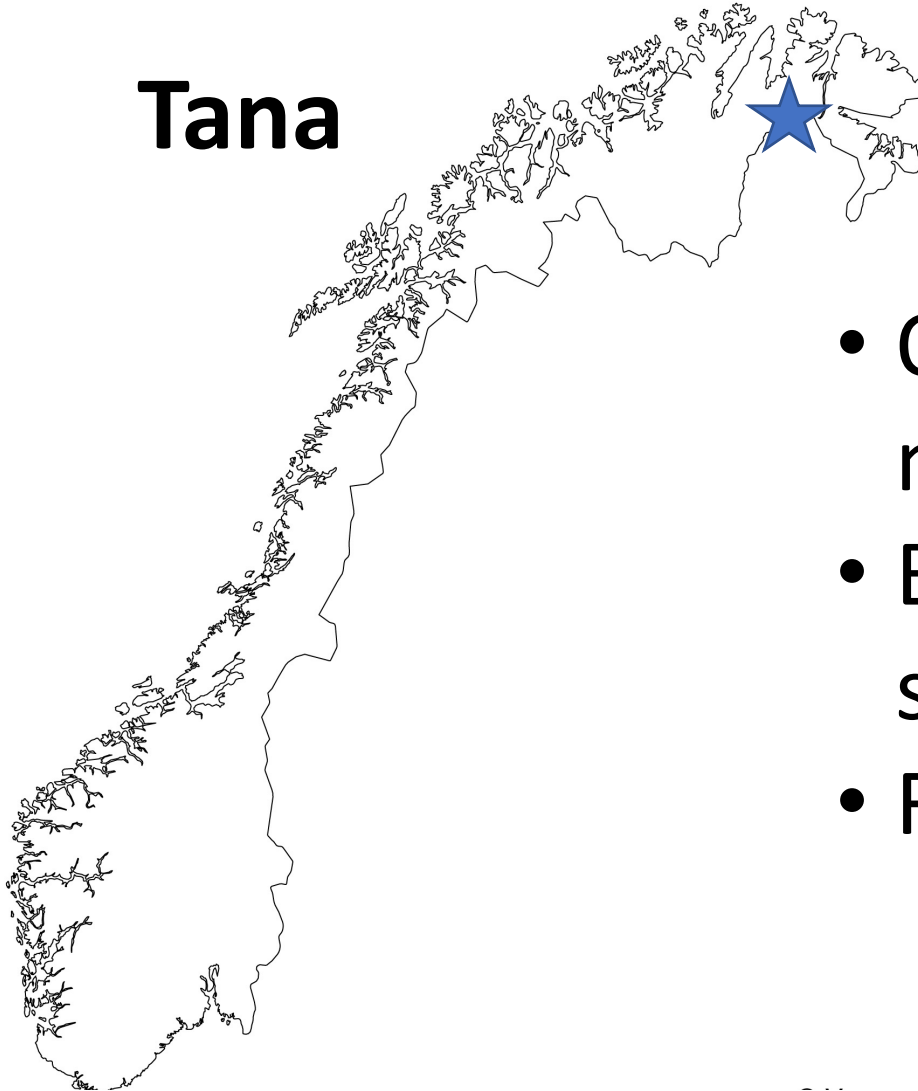


FDOM - Hg relationship to monitor inputs from secondary sources



O2 Sensors for Ecosystem Functioning

Tana



- O2-derived stream metabolism estimates
- Biodiversity and fisheries services
- Freshwater GHG emissions

Quantom

(NFR 2021-2024; PI Benoit Demars)

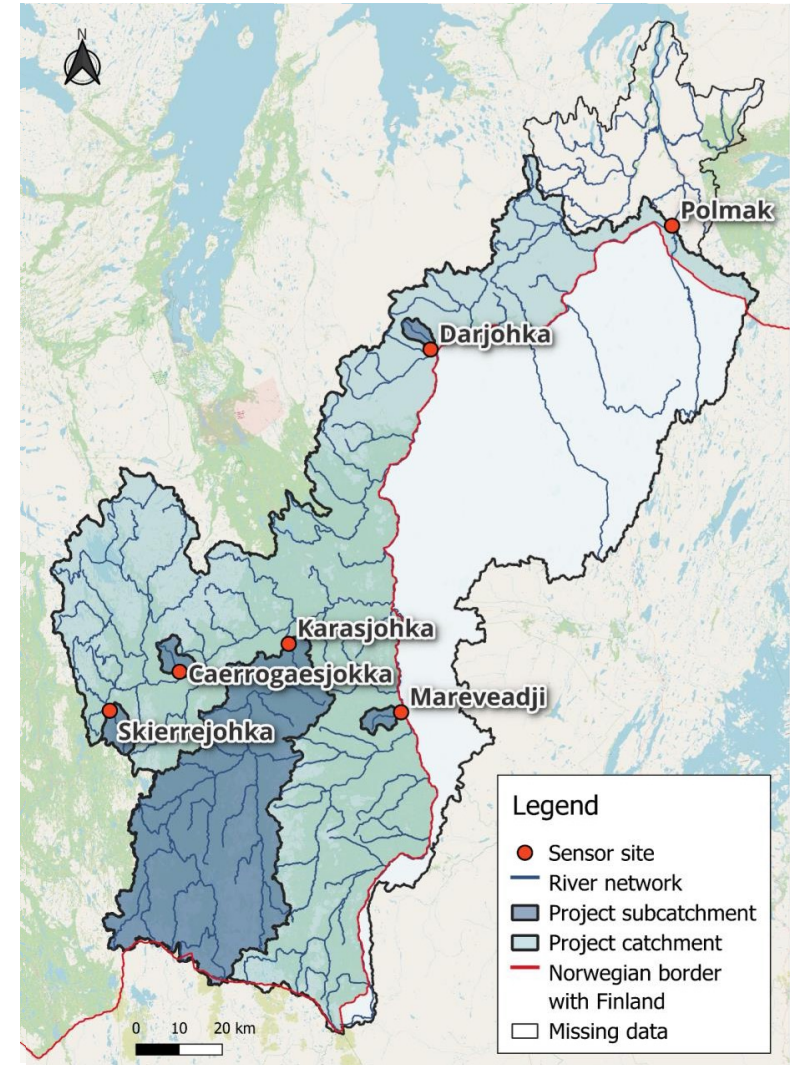


Pictures: M. McGovern

Stream metabolism on the network scale



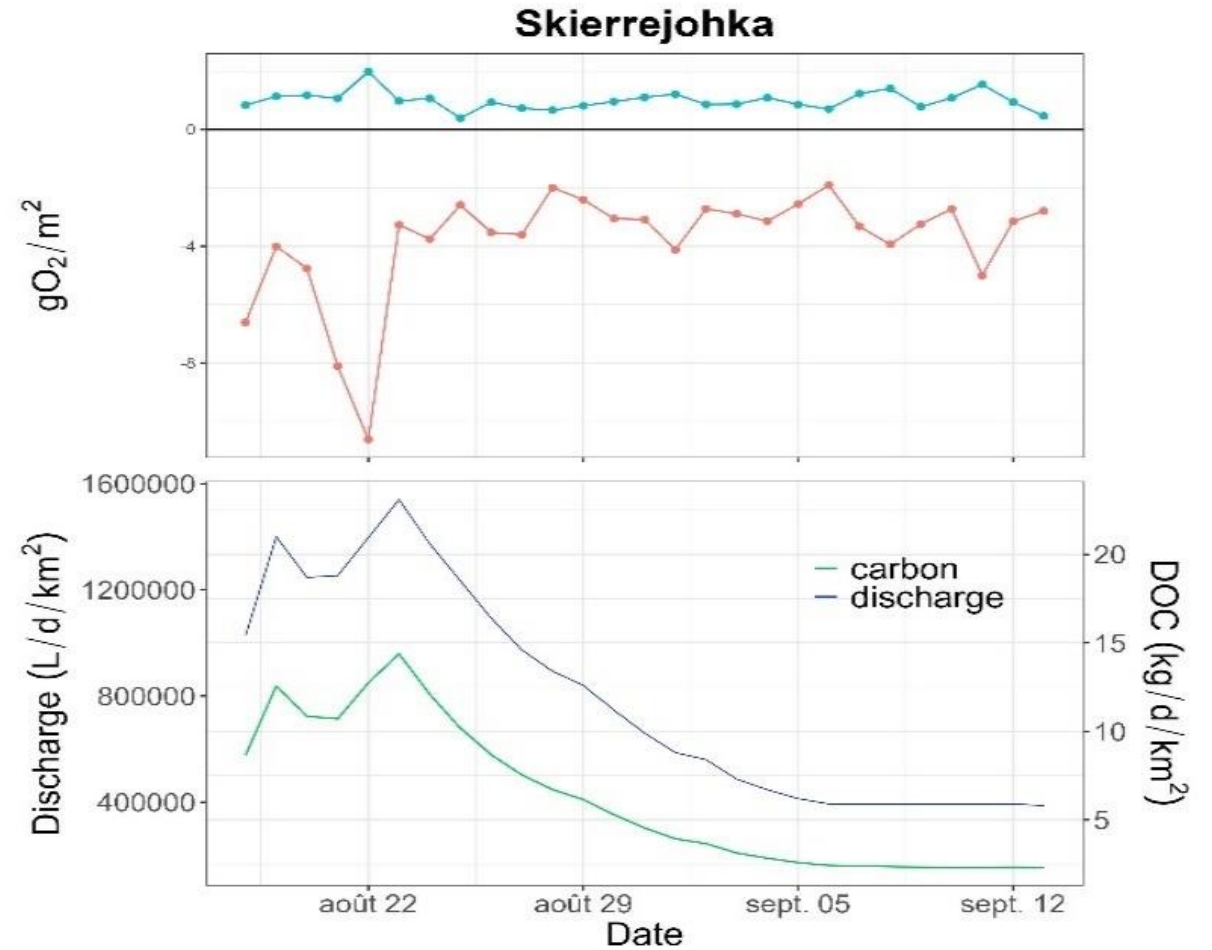
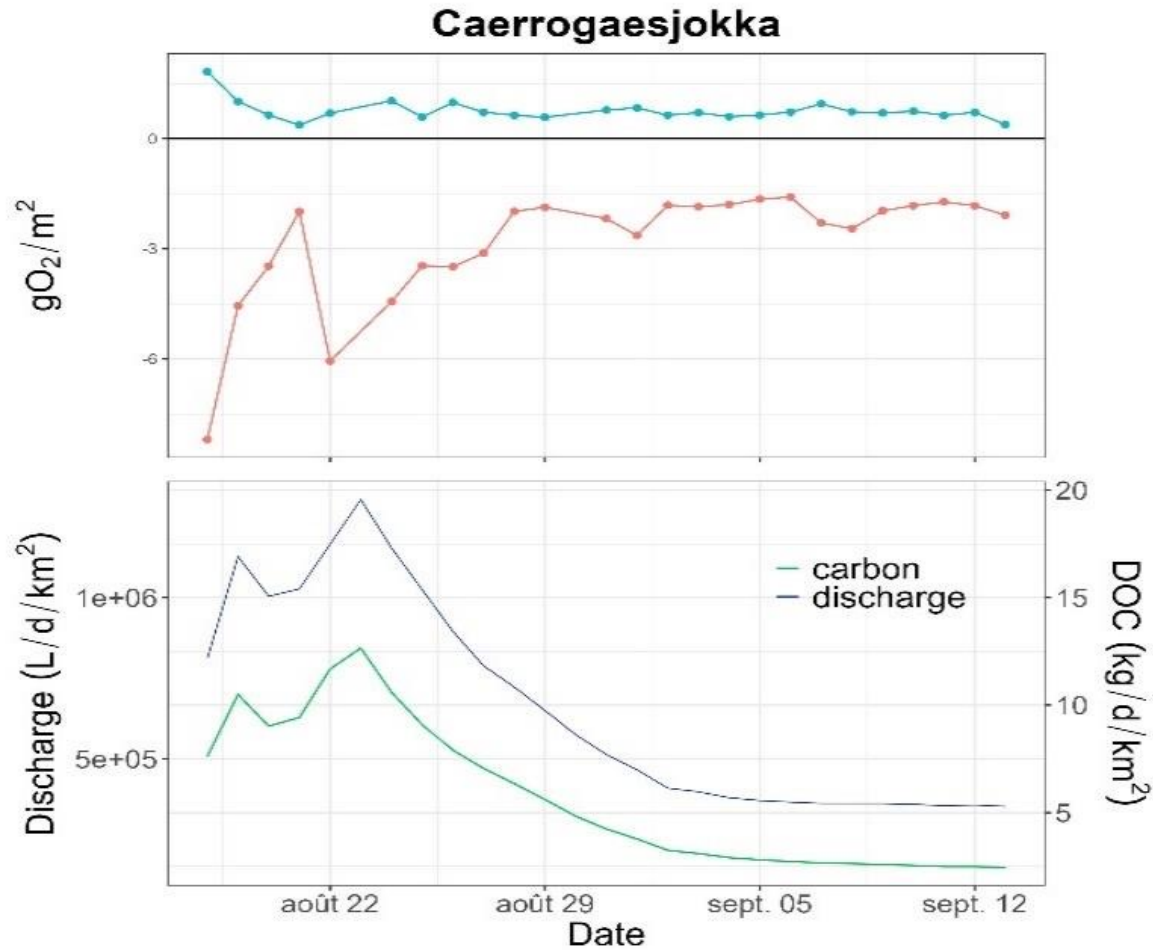
YSI Multiparameter sensor (including both FDOM and O2)





Snowmelt on Finnmarksvidda

Linking Extreme Events to Ecosystem Functioning



- 1. High temporal resolution**
- 2. Water quality proxies**
- 3. Ecosystem Functioning and services**



Thanks for listening!

