

# SIOS Marine Infrastructure Workshop

AMUST KONGSFJORDEN SPRING BLOOM MONITORING

11. oktober 2023

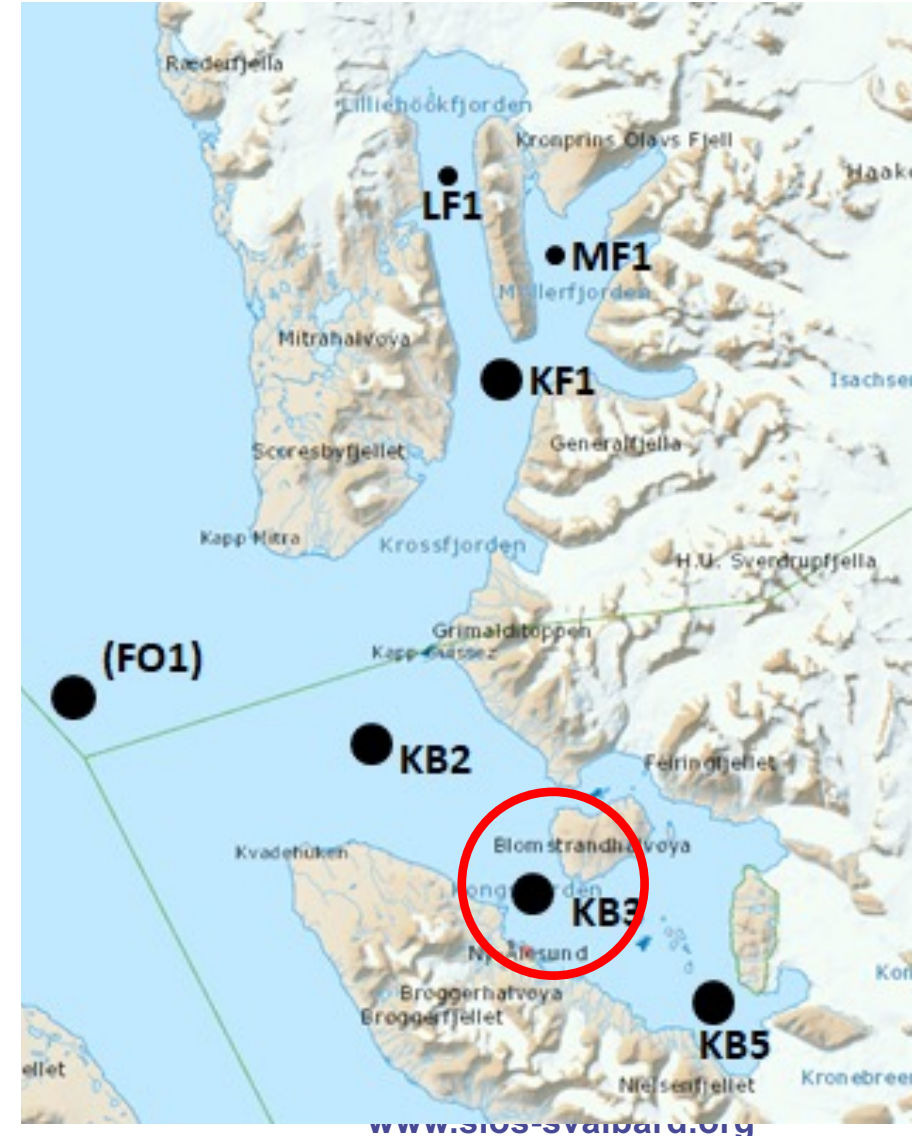
Clara Hoppe, AWI Bremerhaven

**AWIPEV** 79°N

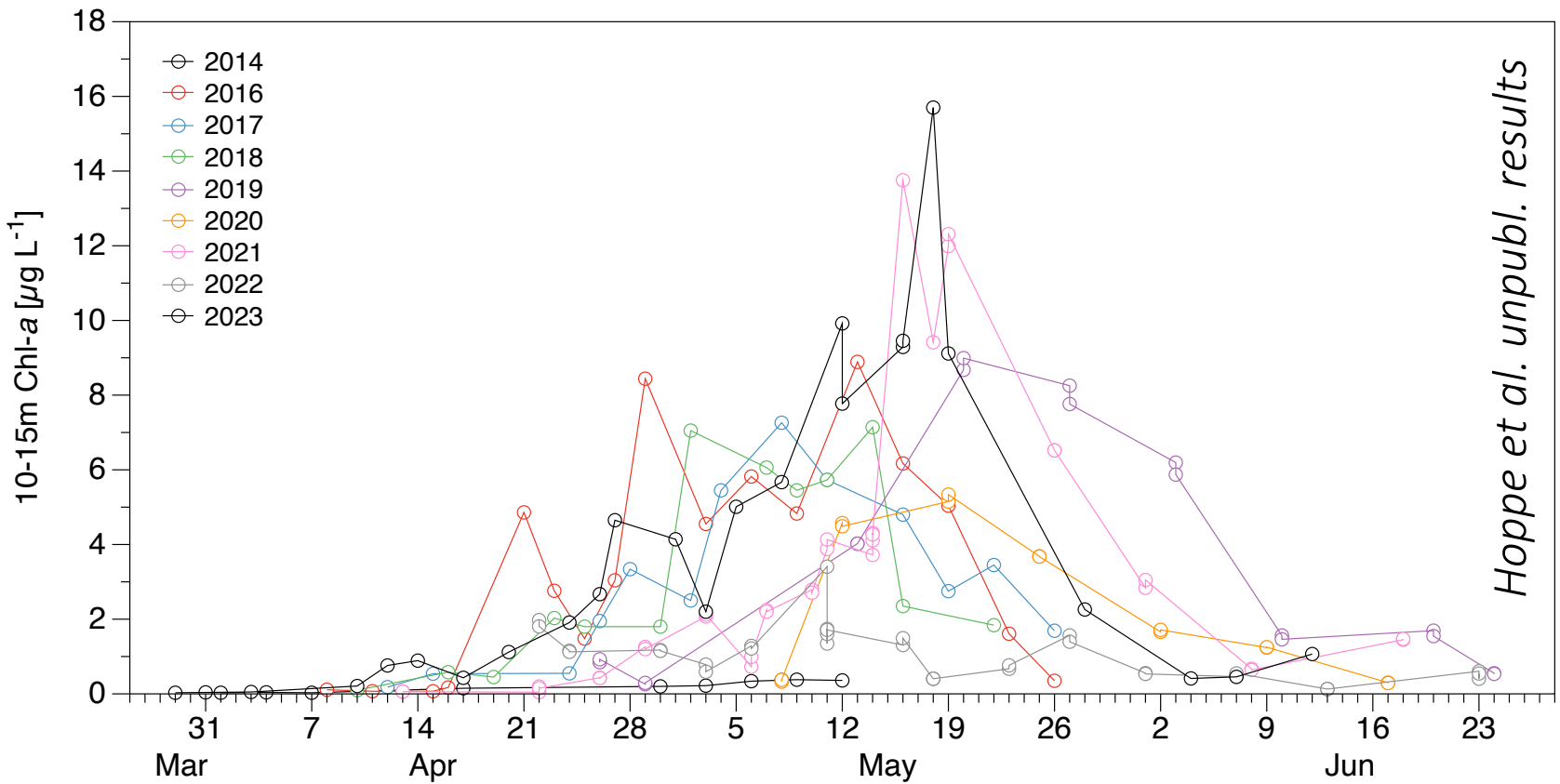


# Overview of Kongsfjorden Spring Bloom Monitoring

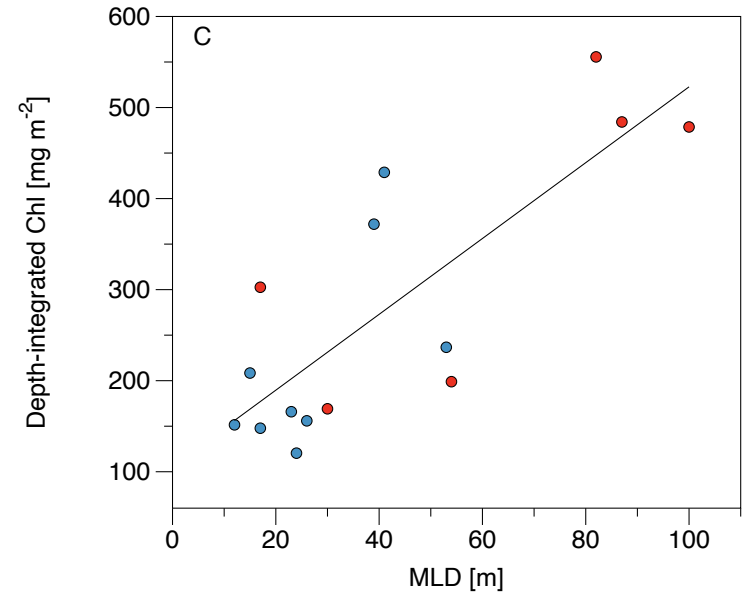
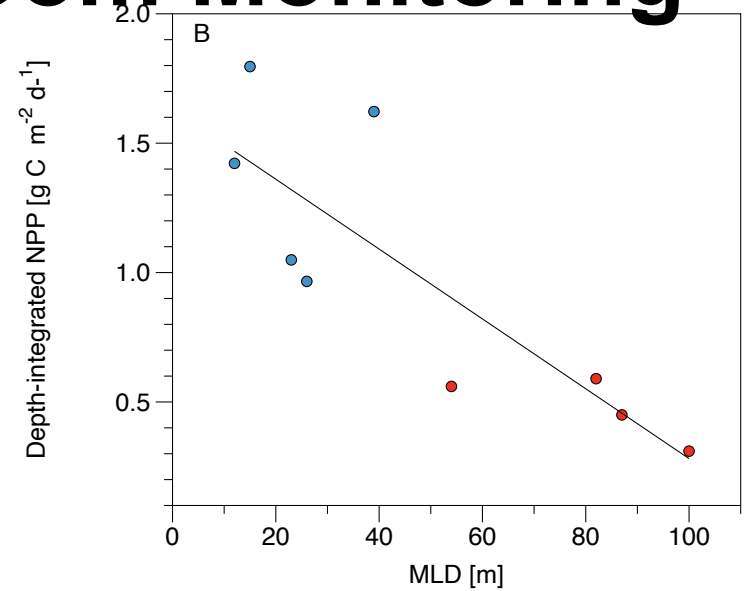
- discrete sampling at KB3 2-3 times per week  
in (March,) April & May each year (since 2014)
  - CTD profiles
  - Irradiance profiles
  - Nutrients (& carbonate chemistry)
  - Chl-a & SF Chl-a (>5 $\mu$ m)
  - POC & PON
  - Light-microscopic taxonomy
  - 18S DNA metabarcoding (eukaryote diversity)
  - Population dynamics of *T. hyalina*
  - $^{14}$ C-based NPP rates & PI curves
  - FRRF-based photophysiology
  - New: microzooplankton grazing rates



# Overview of Kongsfjorden Spring Bloom Monitoring



- Monitoring & process understanding



# Outlook, future perspectives

- We will continue our monitoring program in the coming years (decades?) to better understand bloom controls and dynamics, and to eventually detect climate change signals in the future
- Next year, we will start a year-round sampling campaign, investigating seasonal dynamics in Kongsfjorden physicochemical and ecological dynamics (YESSS project)

# Main logistical challenges and wishes

- Data gaps
- Bad weather
- Parallel sampling - better coordination (planning, trust,...?) needed?

# What you hope to get out of a Svalbard marine infrastructure network

- Info on challenges & solutions
- Sampling harmonization
- Data sharing

# Kongsfjorden CTD data portal

<https://nyalesundresearch.no/kongsfjorden-ctd-data-portal/>

The screenshot displays the Kongsfjorden CTD data portal interface. On the left, there are filter panels for 'Data owner (person)' (Allison Bailey, Clara Hoppe), 'Sensor owner' (Kings Bay, AWIPEV), 'Remove flag(s)' (1, 2), 'Remove embargoed' (No), 'Longitude range' (11.42 to 12.53), 'Latitude range' (78.88 to 79.02), 'Depth range' (0 to 120), and 'Date range' (2016-04-15 to 2016-06-01). The main area shows a table of data entries:

Clara Hoppe	2023-04-04	KB3_20160526_0912.csv	No	Clara Hoppe	AWI	AWIPEV
Clara Hoppe	2023-04-04	KB3_20160530_1701.csv	No	Clara Hoppe	AWI	AWIPEV
Clara Hoppe	2023-04-04	KB3_20160601_1801.csv	No	Clara Hoppe	AWI	AWIPEV
Clara Hoppe	2023-04-04	KB5_20160429_1940.csv	No	Clara Hoppe	AWI	AWIPEV

Below the table, it says 'Showing 1 to 20 of 20 entries' with 'Previous', '1', and 'Next' navigation buttons. At the bottom, there are two visualization options: 'Time series of selected data' and 'Map of selected data'. The 'Time series of selected data' plot shows 'Temperature' on the Y axis (0 to 4) and 'date\_time' on the X axis (from avril 15 to juin 01). The 'Map of selected data' shows a map of the Kongsfjorden region with a green box highlighting the area around 79.0°N to 79.3°N and 11.5°E to 12.5°E, with a data point labeled '5496'.

- rescuing of unused data
- sharing of data
- generation of powerful time series

Aim:

Joint data publication of all contributing researchers

Accounts can be generated by contacting the developer [Robert Schlegel](#), Sorbonne University (robert.schlegel@imev-mer.fr)