



Overview of Norwegian cruises and contributions to SAS

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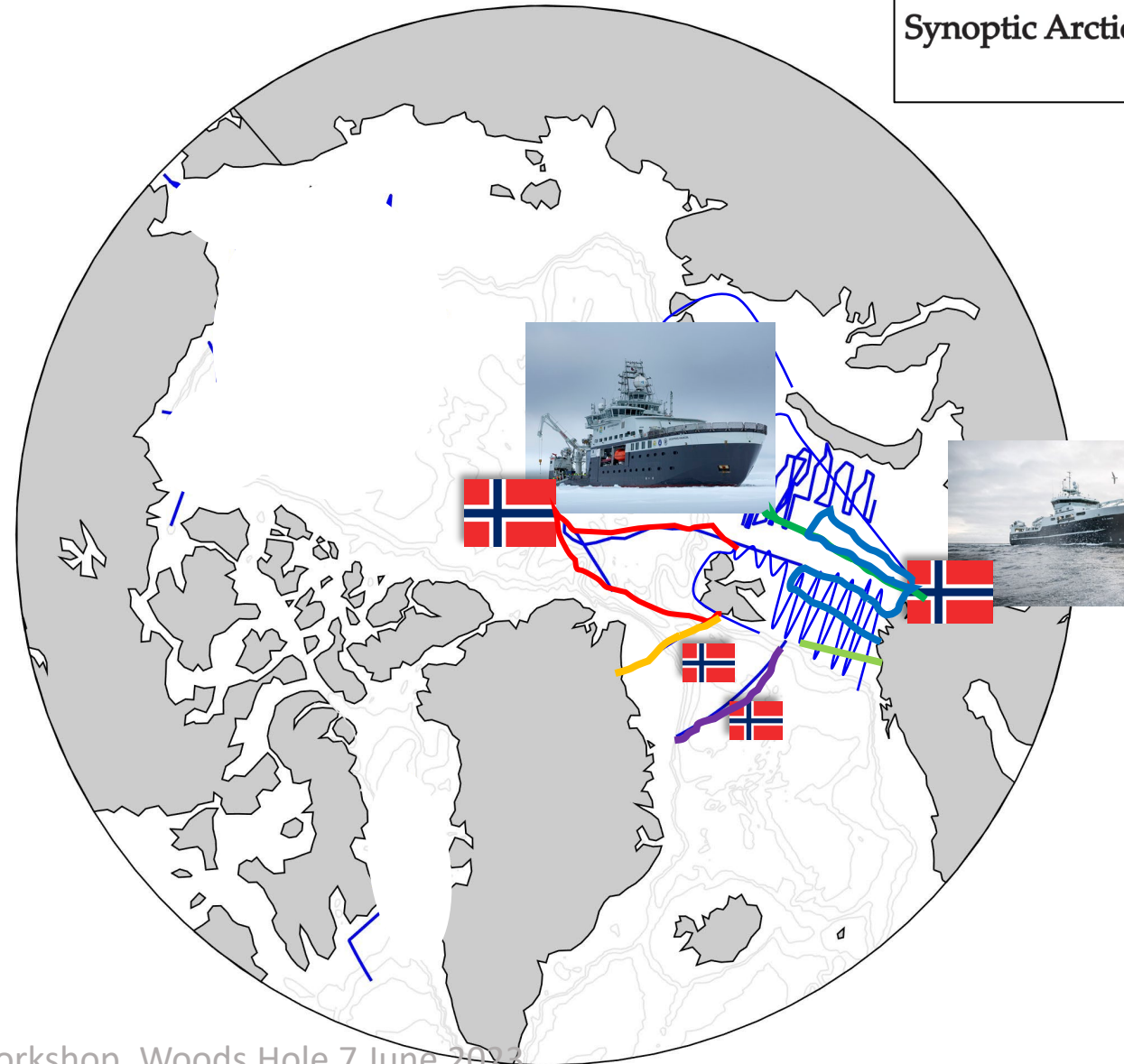
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Involved: Melissa Chierici, Vidar Lien (IMR), Marit Reigstad (UiT, NL),
Laura de Steur (NPI), Are Olsen (UiB)



Overview of Norwegian SAS cruises 2021-2022

- **Arctic Basin** 2021 (Aug-Sept, Nansen Legacy)
- **Fram Strait** (79°N) 2021 (July-Aug, NPI)
- Barents Sea, **Vardø-North** 2021 (March) + **Fugløy-Bjørnøy** (Aug?, IMR)
- **Barents Sea Ecosystem** 2021 (Aug-Oct, BESS; IMR)
- **Greenland Sea** (75°N) 2022 (May-June, UiB, IMR)



Core parameters

- Arctic Basin: T, S, O₂, nutrients, DIC, AT, pH, δ¹⁸O, chl, POC, PON, phytoplankton, zooplankton, fish....other bio...
- Fram Strait 79°N: T, S, O₂, nutrients, DIC, AT, pH, δ¹⁸O, CDOM,DOC, phytoplankton, zooplankton...other
- Barents Sea: T, S, O₂, nutrients, DIC, AT, δ¹⁸O, chl, phytoplankton, zooplankton, fish...bio....
- Greenland Sea 75°N: T, S, O₂, nutrients, DIC, AT, CFC12, SF6...



Papers published and planned

scientific reports

Check for updates

OPEN **Under-ice observations by trawls and multi-frequency acoustics in the Central Arctic Ocean reveals abundance and composition of pelagic fauna**

Randi B. Ingvaldsen^{1,2}, Elena Eriksen¹, Harald Gjørseter¹, Arill Engås¹, Birte Katarina Schuppe², Karen M. Assmann², Heather Cannaby¹, Padmini Dalpadado¹ & Bodil A. Bluhm³

- Ingvaldsen et al. 2022, published
- Synthesis paper on Arctic Basin cruise 2021 in prep 2023: comparison Amundsen and Nansen Basins, most parameters in biology and chemical and physical oceanography (Kohlbach, Fransson et al. in prep)
- Special issue on seasonality in BS, about 25 manuscripts submitted/in review, Nansen Legacy
- Chemical and physical changes and drivers in Fram Strait outflow water, (Chierici, Fransson et al. prep)
- Fram Strait inflow water and OA trends (Chierici et al. in prep)
- Ocean acidification state and decadal trends in the Barents Sea Vardø-North (1999-2022; Chierici et al. in prep)
- Anthropogenic CO₂ and ocean CO₂ uptake in a) Arctic Basin (Fransson), b) Barents Sea (Chierici) and c) Greenland Sea (Olsen)
- DIC increase in Greenland Sea over time since (Becker, Olsen et al. in prep)



Data will be available

- Norwegian Marine Data Centre (NMDC)
- Norwegian Polar Data Centre (NPDC)
- SIOS Svalbard Integrated Observing System
- GLODAP
- SOCAT
- UN Decade SDG 14.3.1



Envisioned synthesis papers

- Pan-Arctic comparisons Atlantic/Eurasian side vs Pacific side, shelves and deep basins, and drivers/processes (involve all parameters)
- Synthesis paper of DIC, OA change including GS, BS and AB data
- Synthesis paper of aragonite saturation, OA in Atlantic and Pacific and spreading/shoaling of low aragonite water (Norway, Japan, Korea, Canada, USA....other)
- Synthesis outflow shelves Fram Strait (Norway), Davis Strait (Canada), Chukchi (USA, Korea, Japan..), freshwater, OA
- Anthropogenic CO₂ in Arctic deep basins and drivers (check Ulfsbo et al)



Outside of the core parameters

- Sea ice physical, chemical and biological data, plastic, ADCP, MSS, trace metals, incubations (multistressors, OA, pollution/pyrene), acoustics, incubations, mooring data (ice and water), sediment trap data....