

# Selected Norwegian Arctic Activities 2022-23



Nalan Koc  
Research Director  
Norwegian Polar Institute  
[Nalan.koc@npolar.no](mailto:Nalan.koc@npolar.no)



## 2022 Arctic Ocean cruise

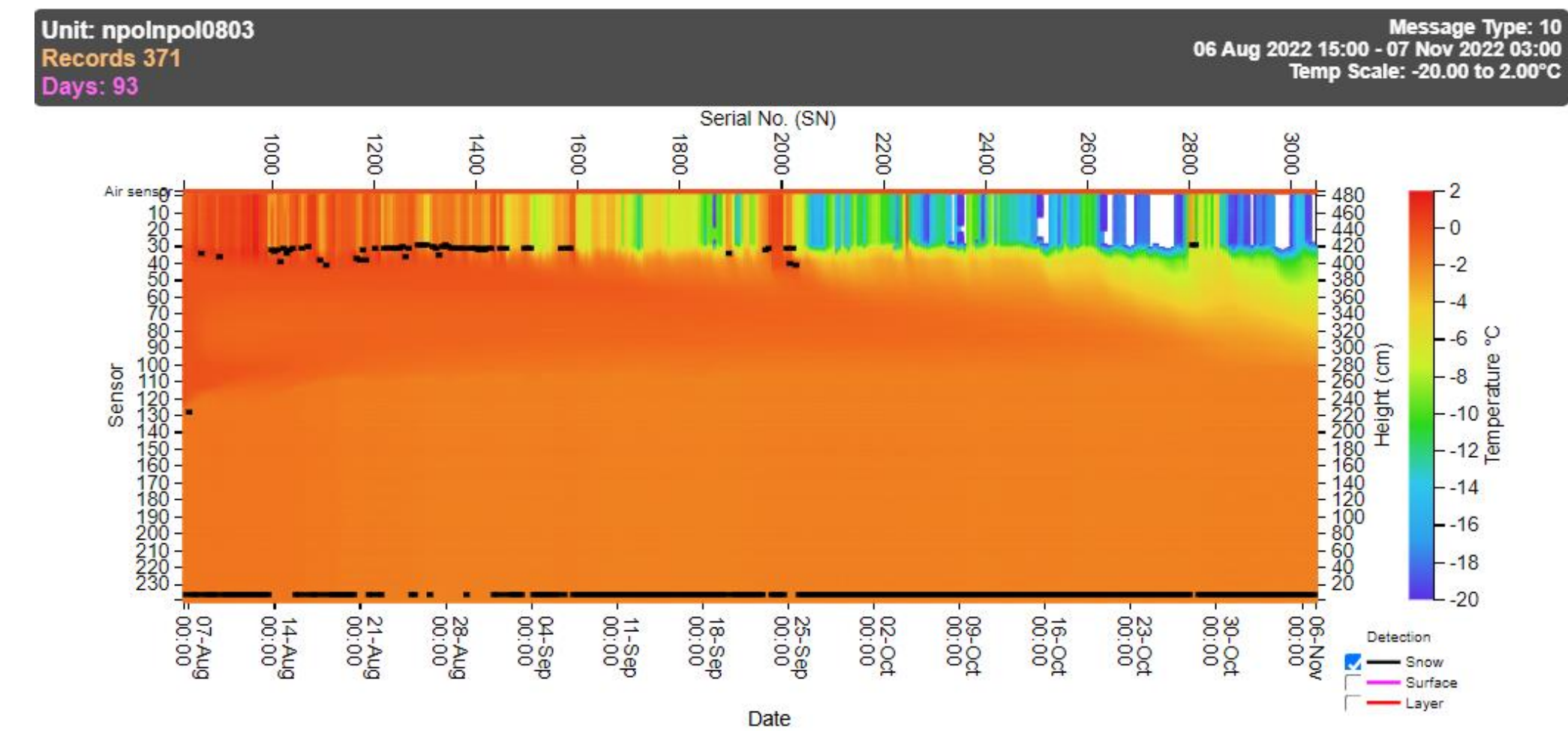
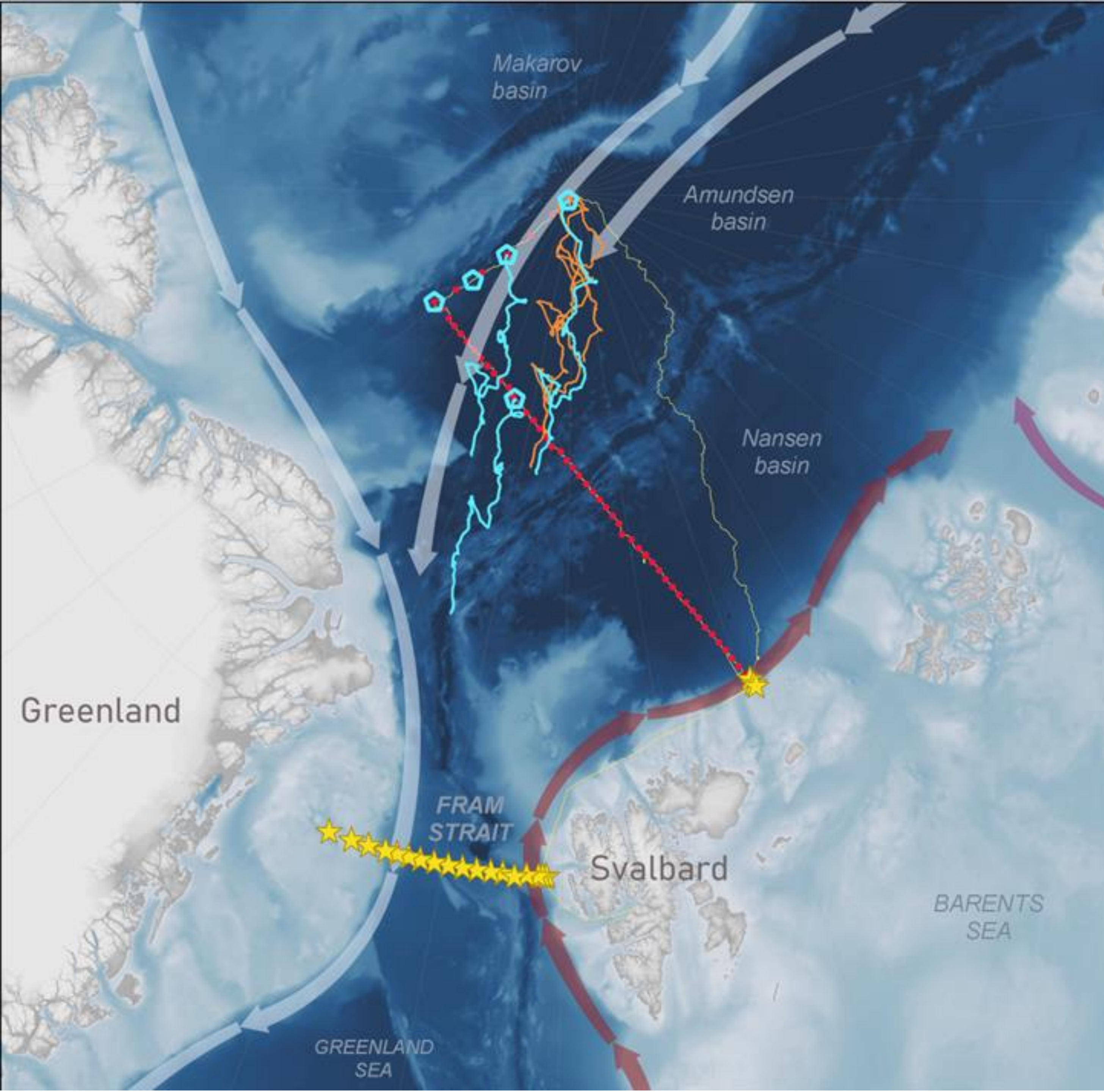


## A New Central Arctic Observing System

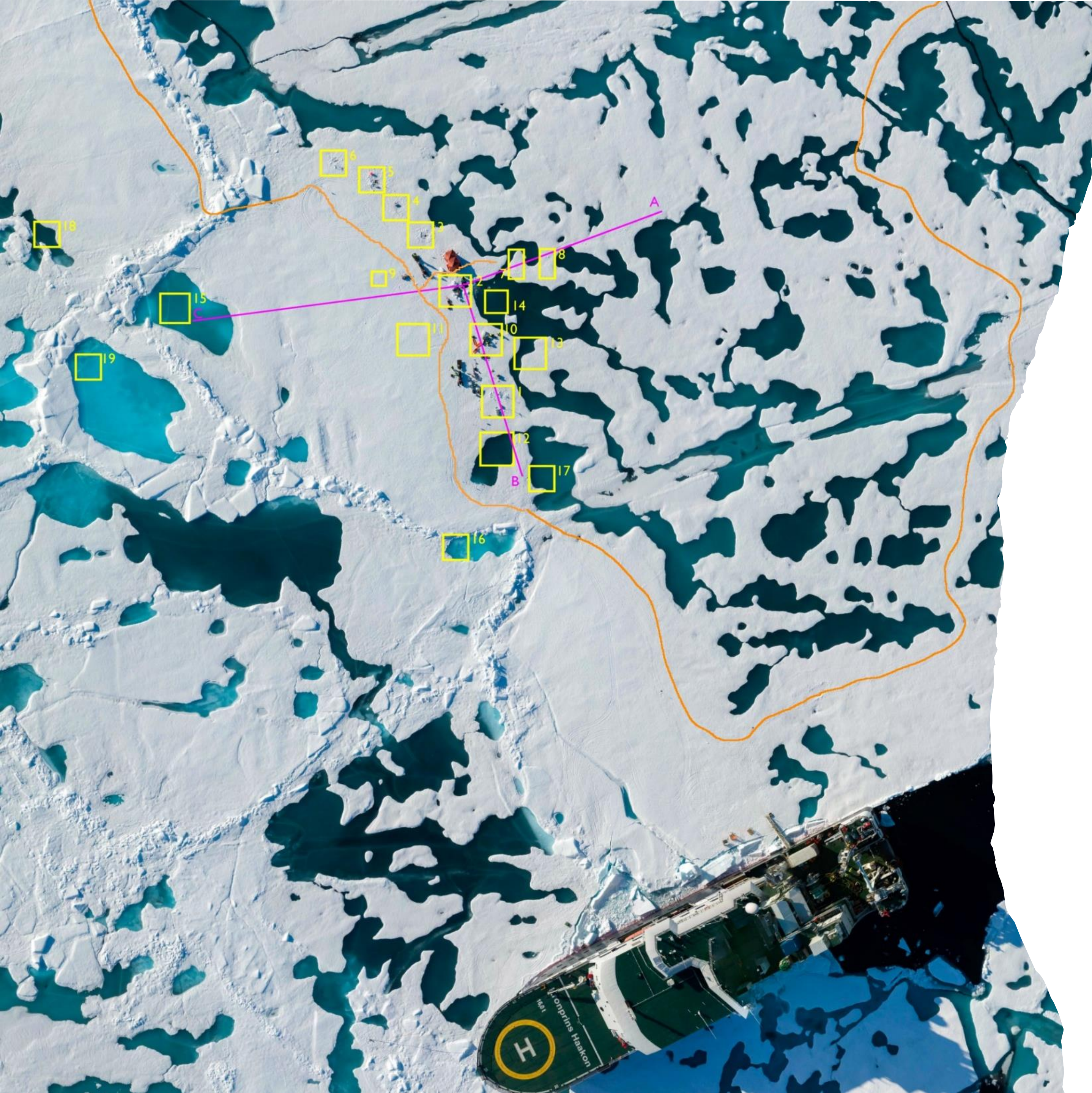
- Until recently it has only been possible to collect long-term measurements at the peripheral straits.
- NPI has collected measurements at the Fram Strait gateway for more than 30 years.
- The retreating ice cover and availability of modern ice breakers now make possible to establish a long term measurement program in the Central Arctic.
- A purpose of the *2022 Arctic Ocean cruise* was to develop a new long-term observing system in the Central Arctic based around two new moorings



# Drifting Observatories on Sea Ice







## Work on Sea Ice in the Central Arctic Ocean (activity list)

- Transects of sea ice and snow thickness
- Ice cores for physical and chemical properties of sea ice
- Measurements of turbulence under the ice
- Measurements of how much light travels through the ice
- Measurements of what is living in and under the ice, including from ROV transects







# Sustainable development of the Arctic Ocean (SUDARCO) (2022-2026)

**Aim:** produce an integrated assessment of the risks to present and future value chains and ecosystem services in the study region and communicate the management implications to relevant stakeholders



Project manager: [Paul.Dodd@npolar.no](mailto:Paul.Dodd@npolar.no)



Establishment of an autonomous Central Arctic observatory consisting of an oceanographic mooring and annual deployments of ice-tethered drifting platforms



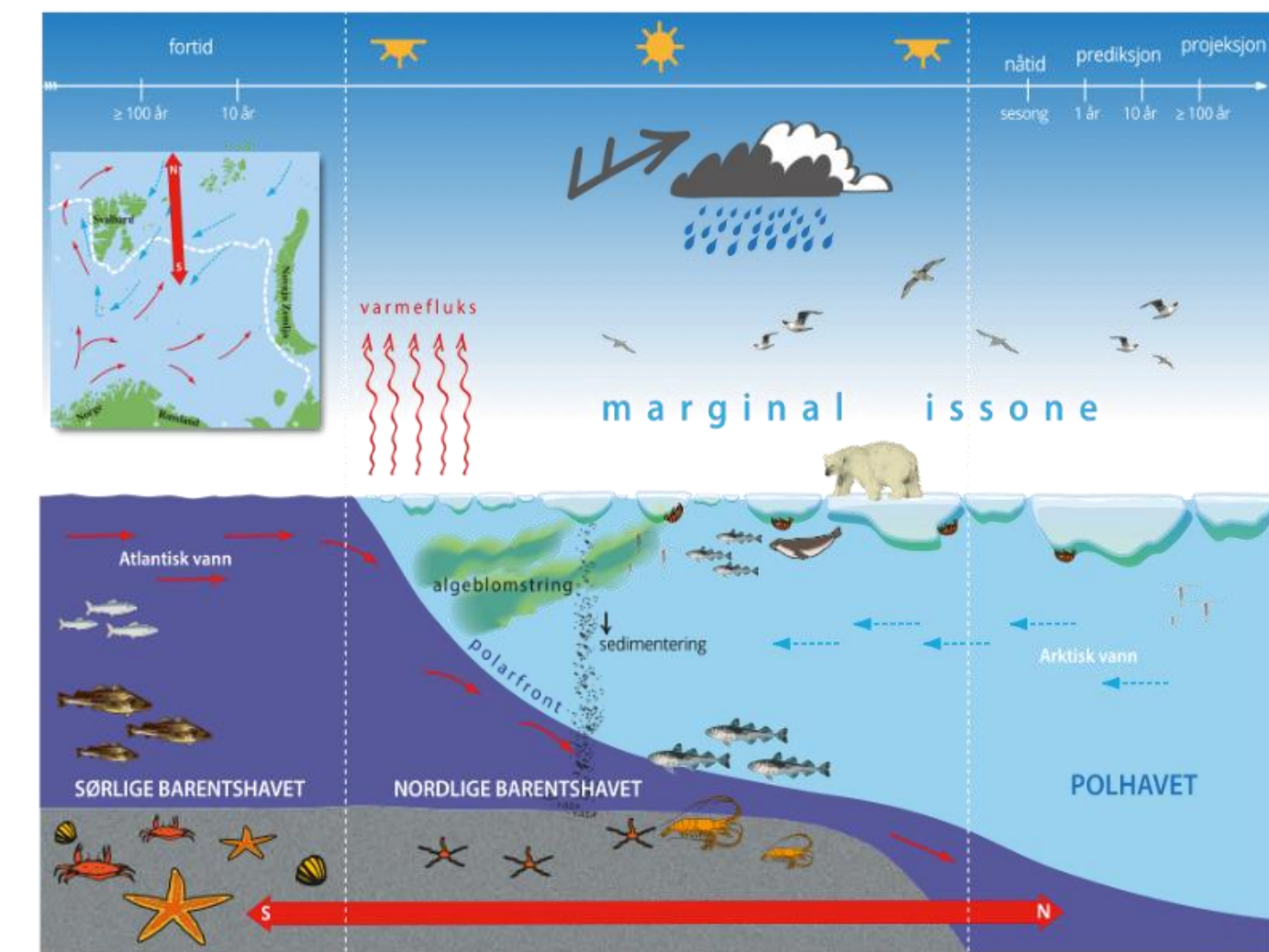
# the Nansen LEGACY



Funded by (2018-2023)



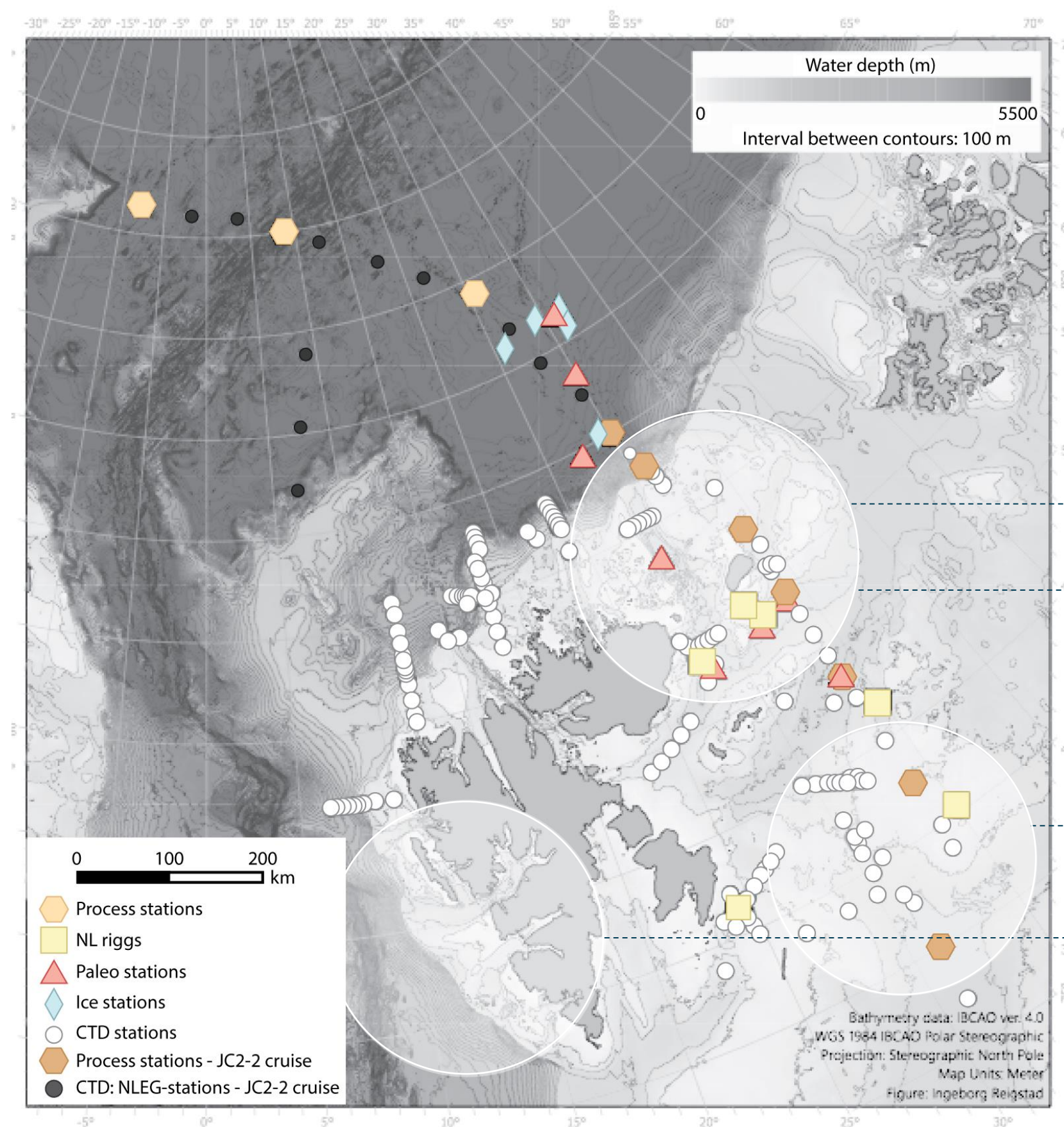
*The Nansen Legacy is the collective answer of the Norwegian research community to the outstanding changes witnessed in the Barents Sea and the Arctic as a whole.*







# THE NANSEN LEGACY FIELD CAMPAIGNS | 2022



RV Kronprins Haakon

## Winter cruise

Barents Sea transect  
Feb 19 – Mar 11

*Investigating the physical-, chemical and biological winter-spring transition on the northern shelf and slope.*



RV Kristine Bonnevie

## Polar Front Studies

Barents Sea Polar Front  
Sep 28 – Oct 13

*Investigating the physical processes: a seasonal description of physical processes at the Barents Sea Polar Front.*



RV Kronprins Haakon

## Mooring Service Cruise

Northern Barents Sea  
Oct 03 – 13

*Mooring service northern Barents Sea and slope. Sensors on physics, sea ice characteristics, biogeochemistry and biology.*



RV GO Sars

## Polar cod-capelin connectivity

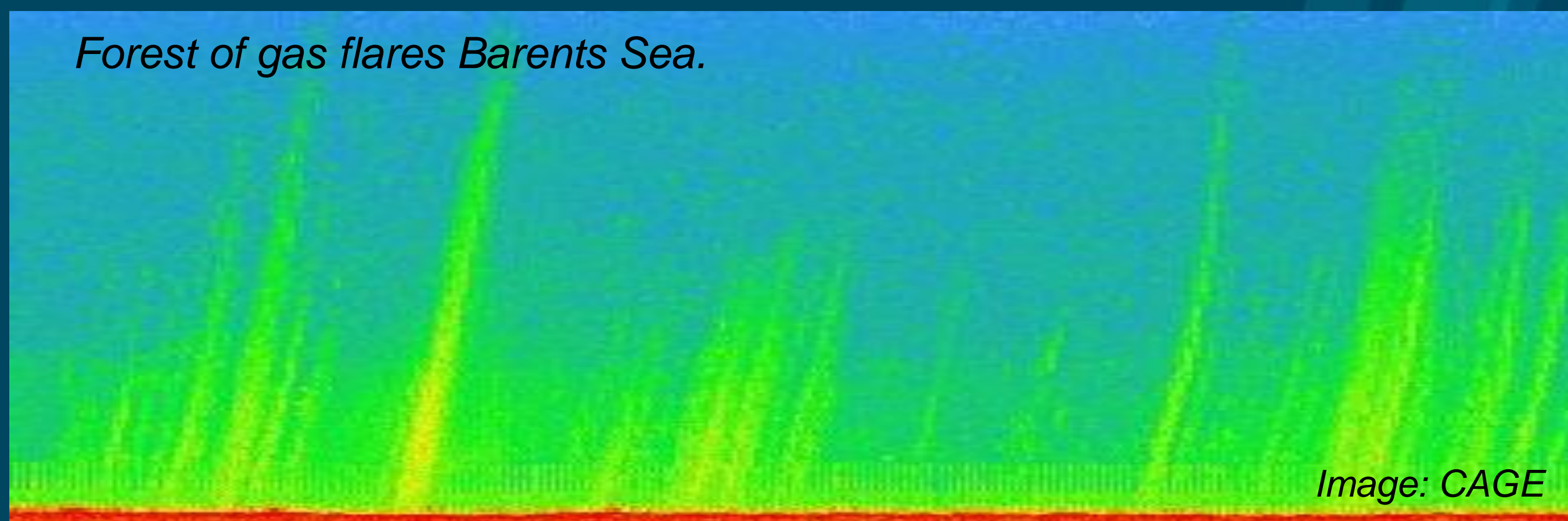
Barents Sea  
Nov 12-21

*Exploring polar cod and capelin population genetics to identify connectivity between populations on eastern and western side of Svalbard.*



# ***CAGE - Centre for Arctic Gas Hydrate, Environment and Climate***

*Norwegian Centre of Excellence 2013 – 2023, at UiT*



## **Investigating natural methane emissions from the Arctic**

- Relationships between methane emissions and gas hydrates
- Implications for environment and climate



- **Trans-disciplinary Research**
- **State-of-the-art technology**

## investigating Arctic Methane Systems

Collaboration with NPD and CIRFA  
**OCEAN**



### GEOSYSTEMS



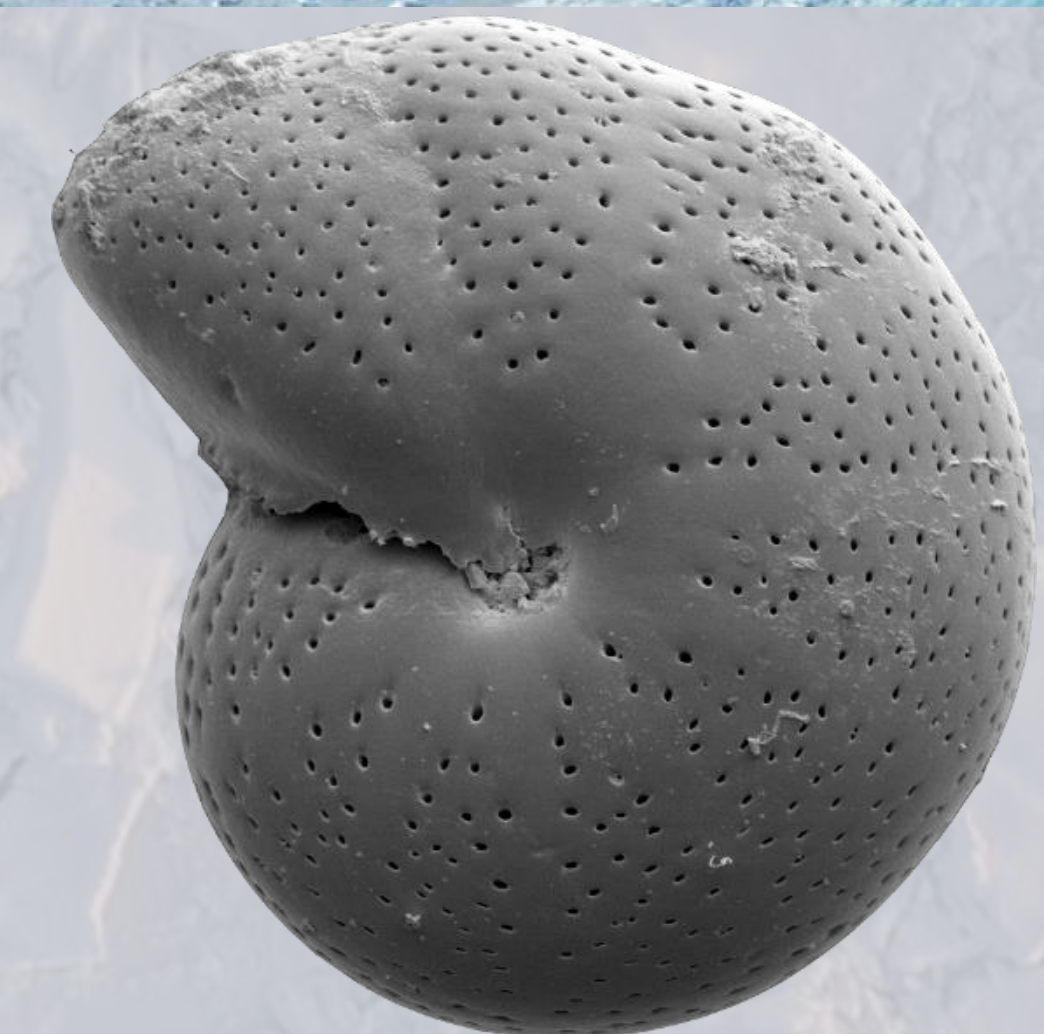
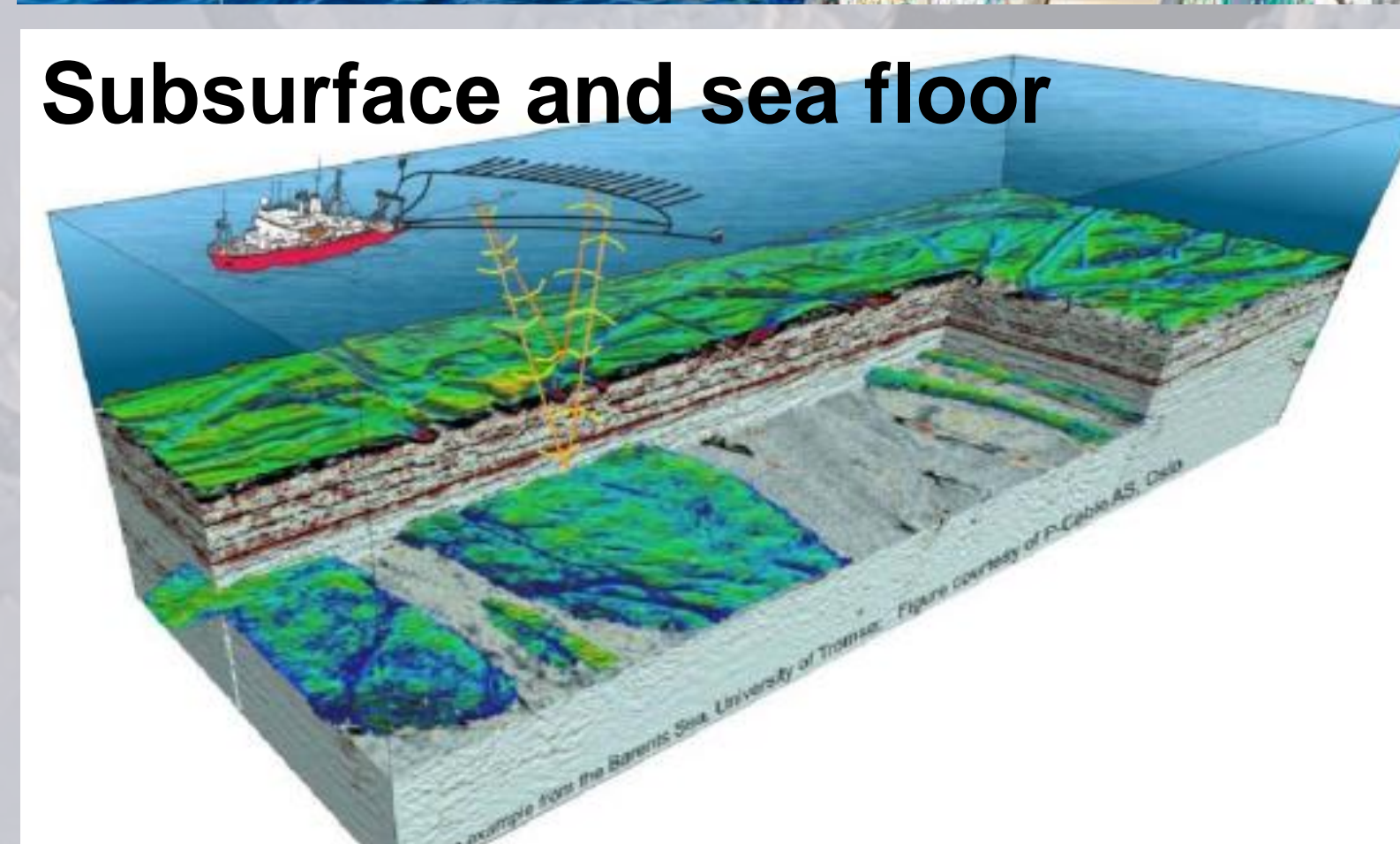
### PAST, PRESENT AND FUTURE



### ECOSYSTEM



**Subsurface and sea floor**

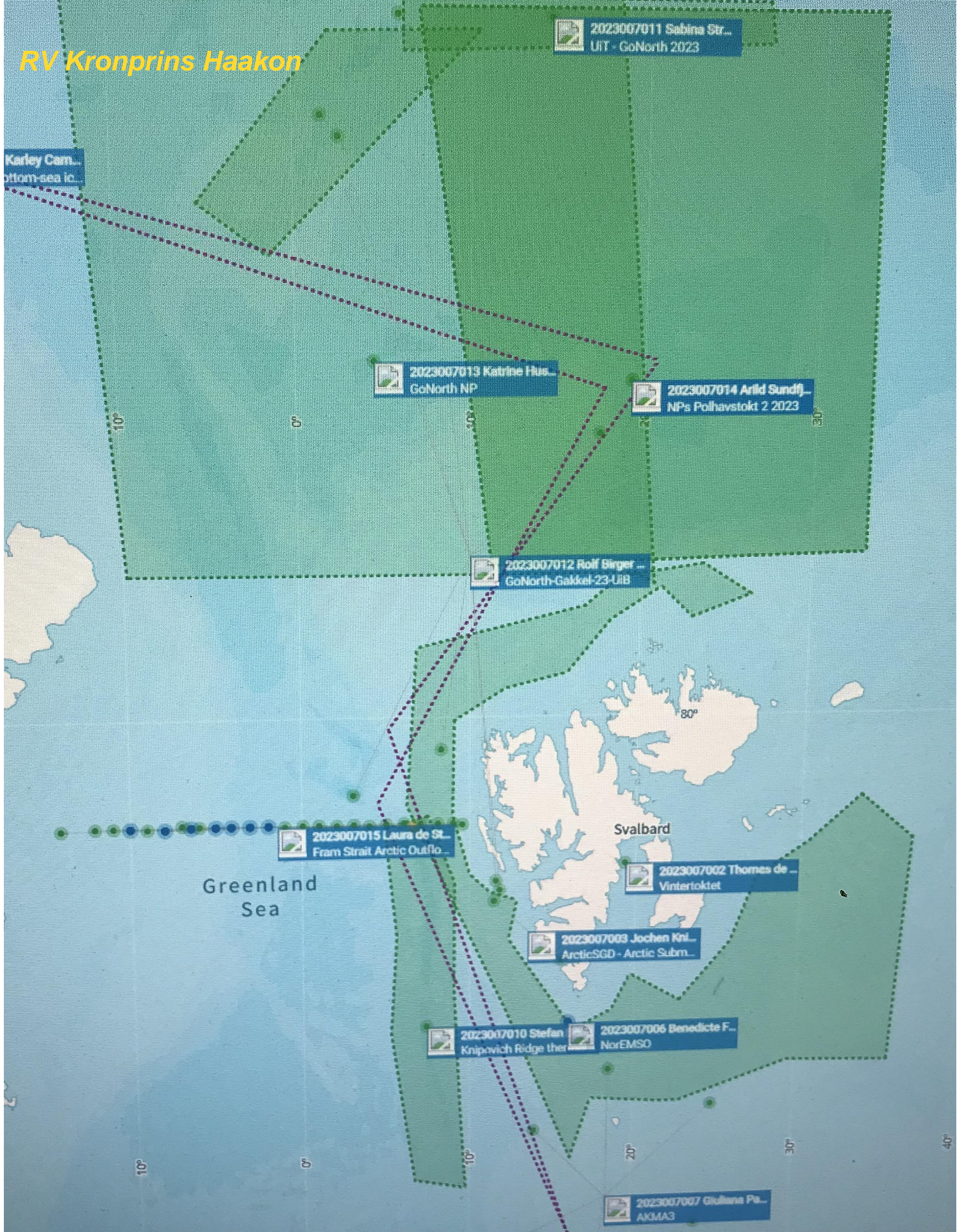
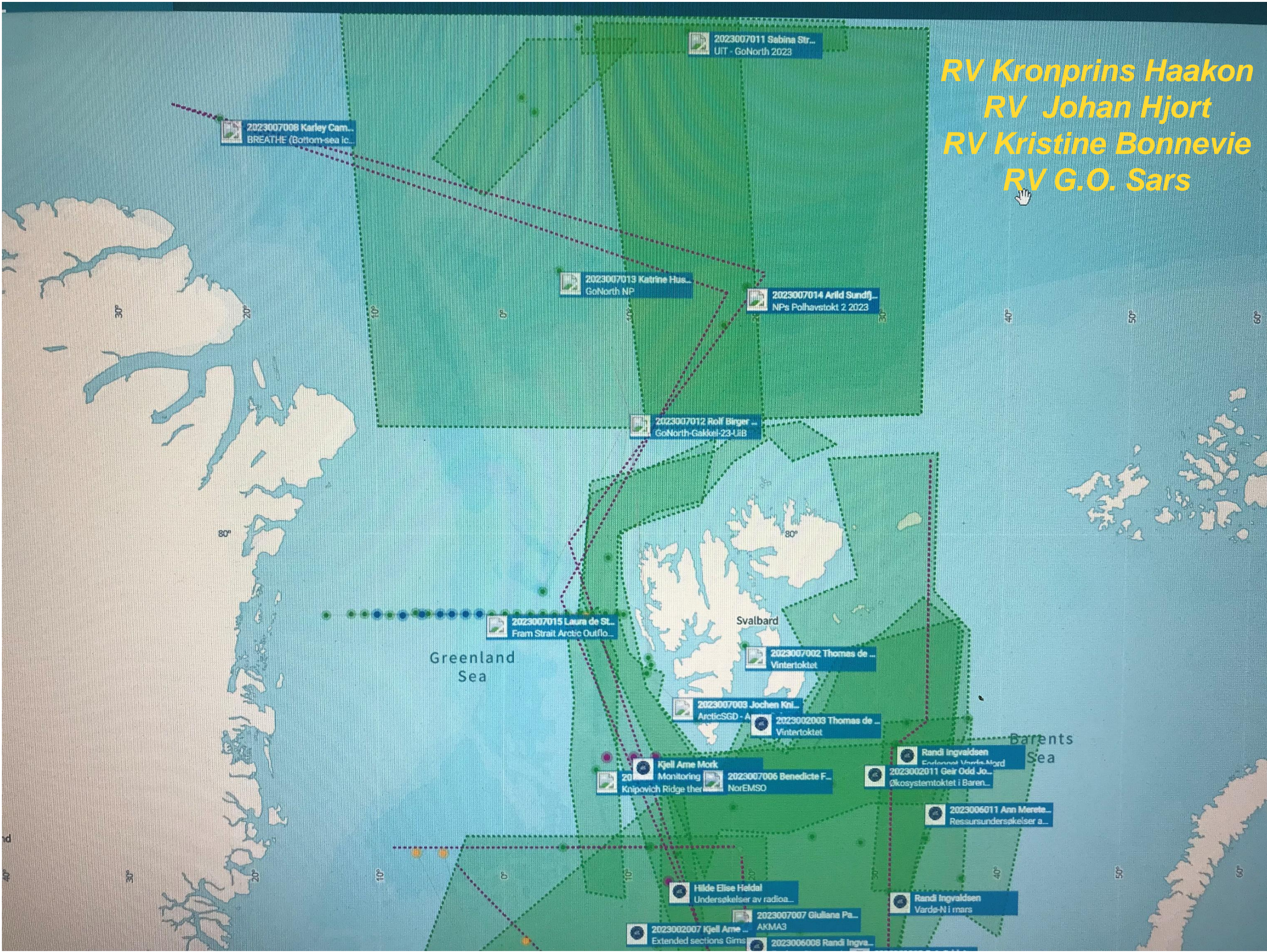








# 2023 Arctic Cruise Activities





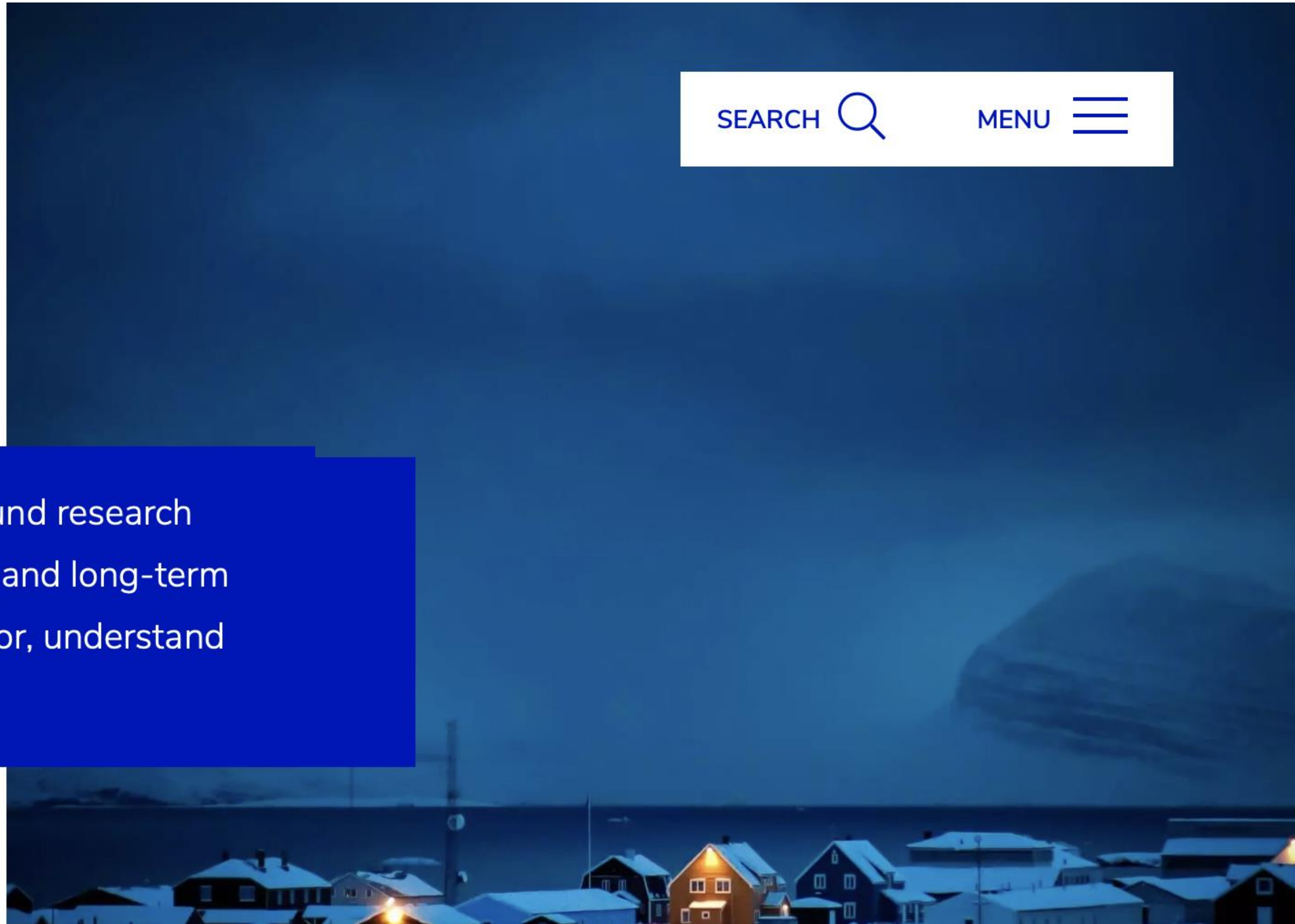


Ny-Ålesund  
Research Station  
Norway

SEARCH 

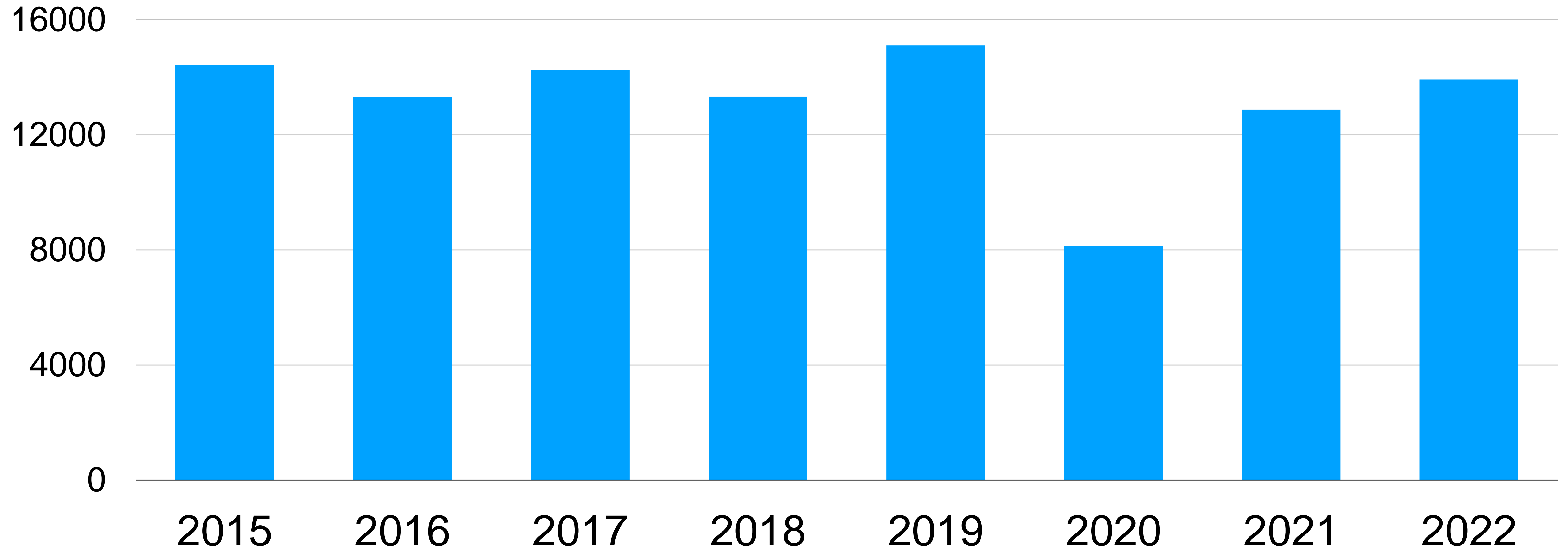
MENU 

Ny-Ålesund is the world's northernmost year-round research station, facilitating and hosting research projects and long-term observation series. We make it possible to monitor, understand and explain Arctic systems and global changes.





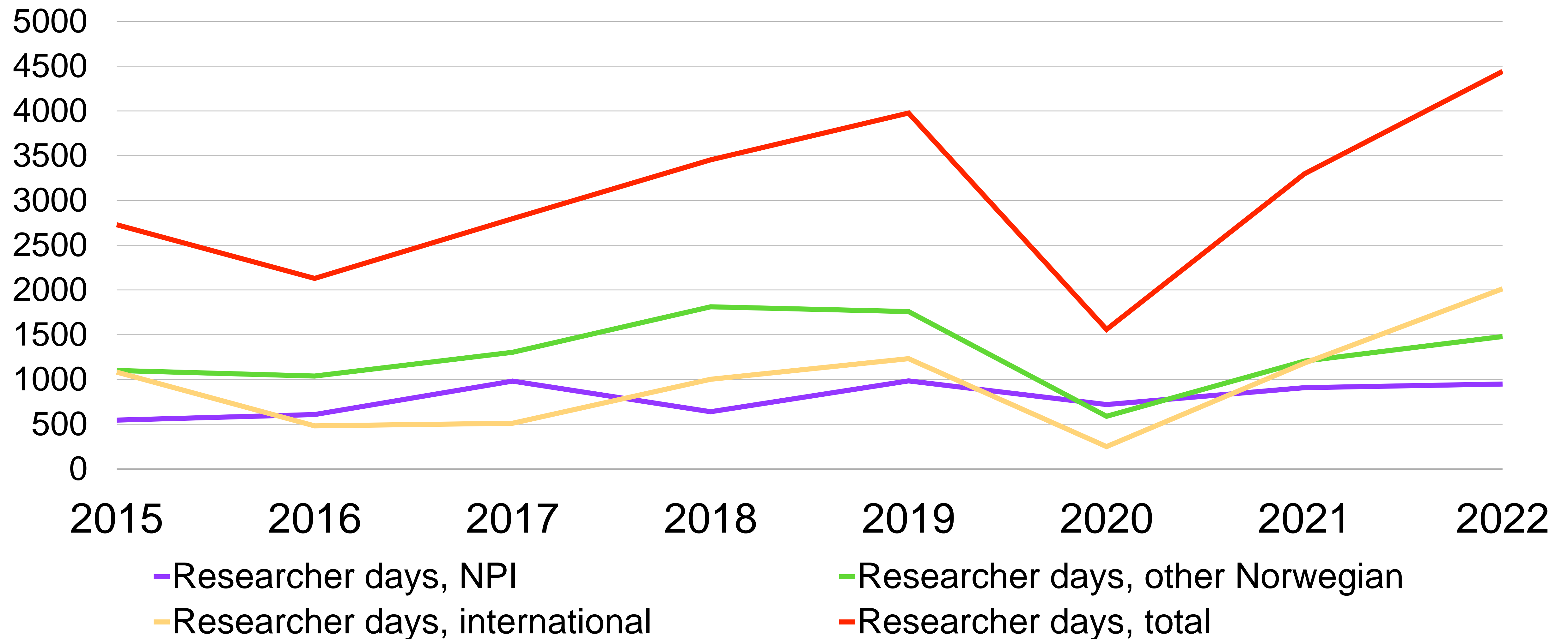
# Researcher days at Ny-Ålesund Research Station 2015 - 2022







# Researchers hosted by the Norwegian Polar Institute at Ny-Ålesund Research Station 2015 - 2022







Ny-Ålesund  
Research Station  
Norway

# International Kongsfjorden Year



Photo: Geir Gotaas, Norwegian Polar Institute



**Resolving seasonal vulnerability of Arctic marine ecosystems to anthropogenic stressors (REVOLVE)**



**Year-round EcoSystem Study on Svalbard: Seasonally resolving ecosystem functioning in a warming Arctic (YESSS)**





Ny-Ålesund  
Research Station  
Norway



**HORIZON-INFRA-2023-SERV-01-01:**

**AWI** ALFRED-WEGENER-INSTITUT  
HELMHOLTZ-ZENTRUM FÜR POLAR-  
UND MEERESFORSCHUNG

**Research infrastructure services to enable R&I  
addressing main challenges and EU priorities**

Nicole Biebow  
Verónica Willmott





Thanks for  
Listening...

