



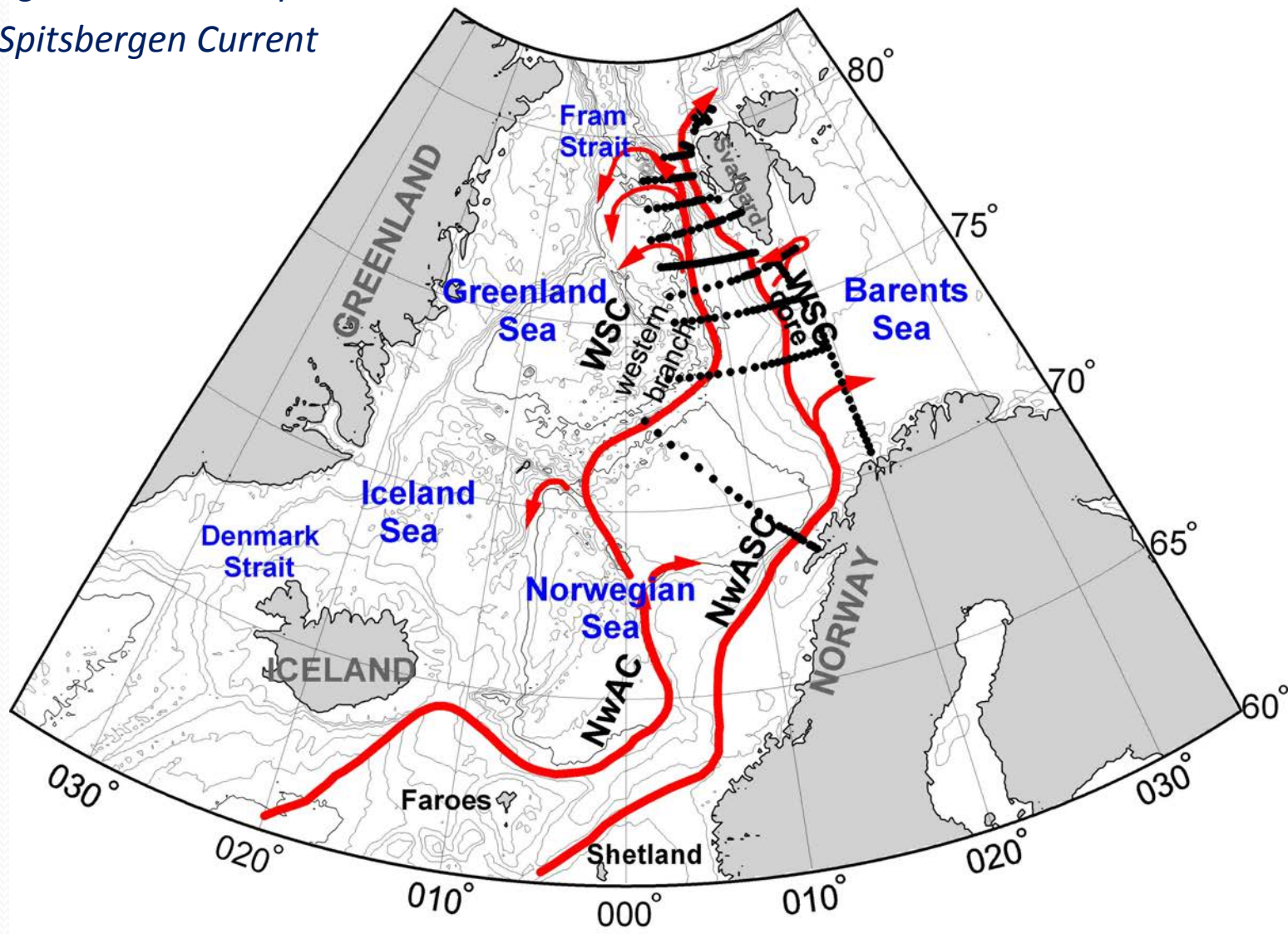
ARCTIC ROOS 2016
Annual Meeting
November 22-23 2016, Longyearbyen

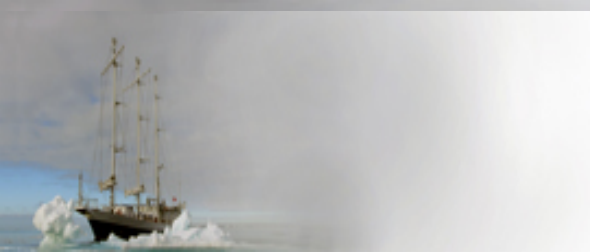
IOPAS activities in the Arctic region in 2016

Waldemar Walczowski
Agnieszka Beszczyńska Möller, Agnieszka Promińska
Instytut Oceanologii PAN



- NAC North Atlantic Current
- NwAC Norwegian-Atlantic Current
- NwASC Norwegian Atlantic Slope Current
- WSC West Spitsbergen Current

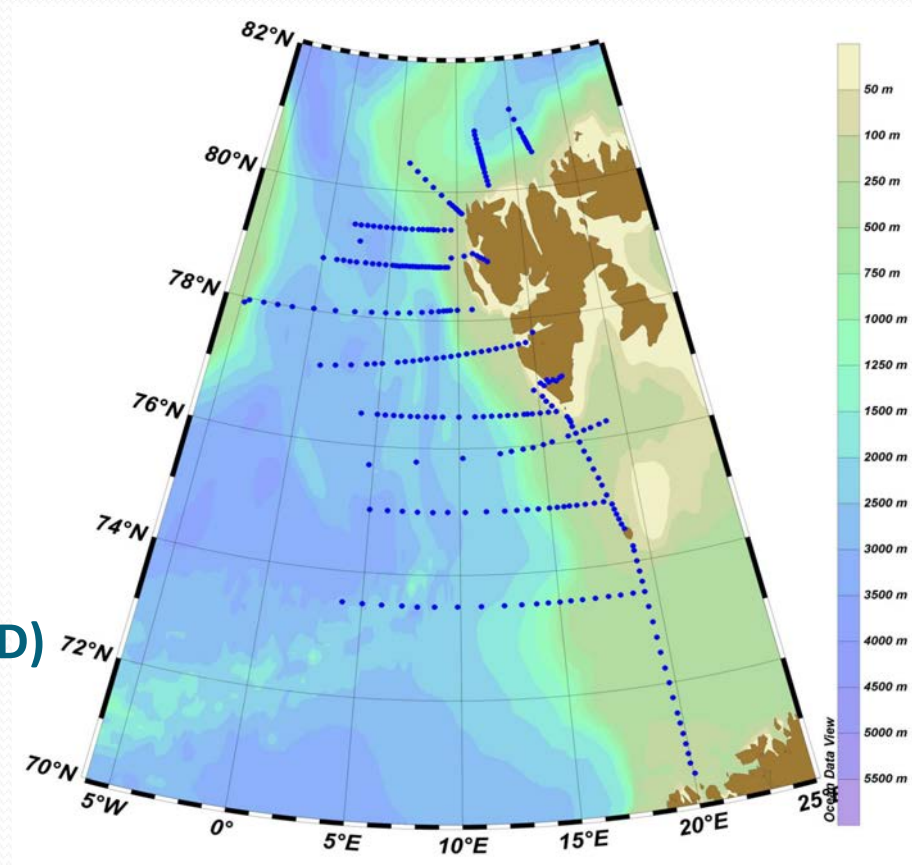




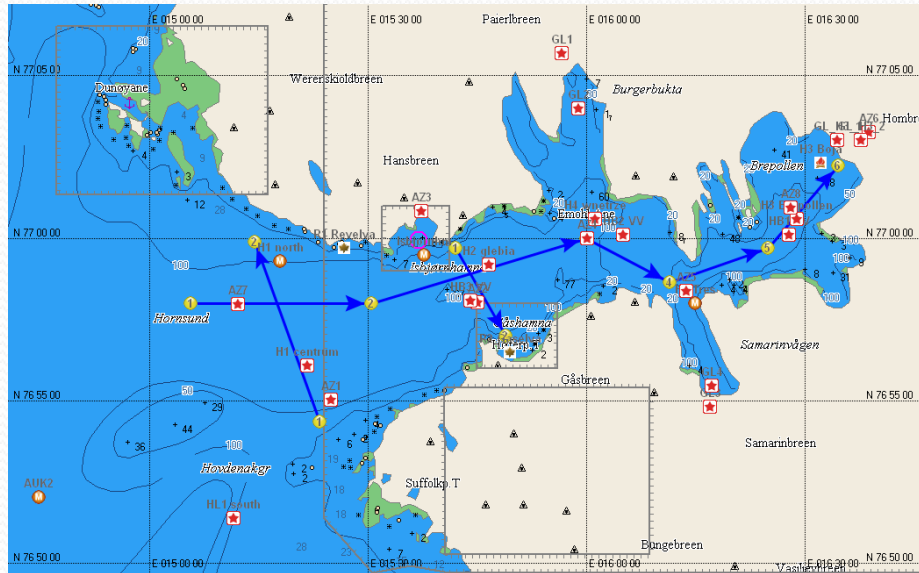
AREX Cruise

14 June – 29 August 2016

- 14 open ocean sections
- 270 CTD open ocean profiles
- 270 LADCP profiles
- Towed CTD high resolution sections
- Measurements in fjords (70 CTD, towed CTD)
- Plankton nets, multinet
- 2 Argo floats deployed
- 18 microstructure profiles in Hornsund
- Bottom sediment sampling in fjords and on shelf

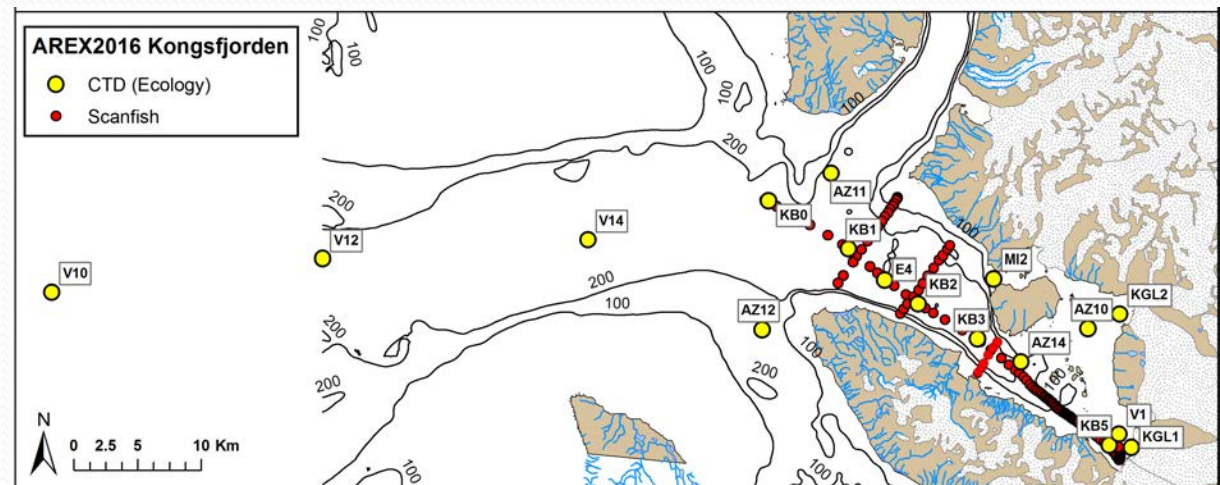


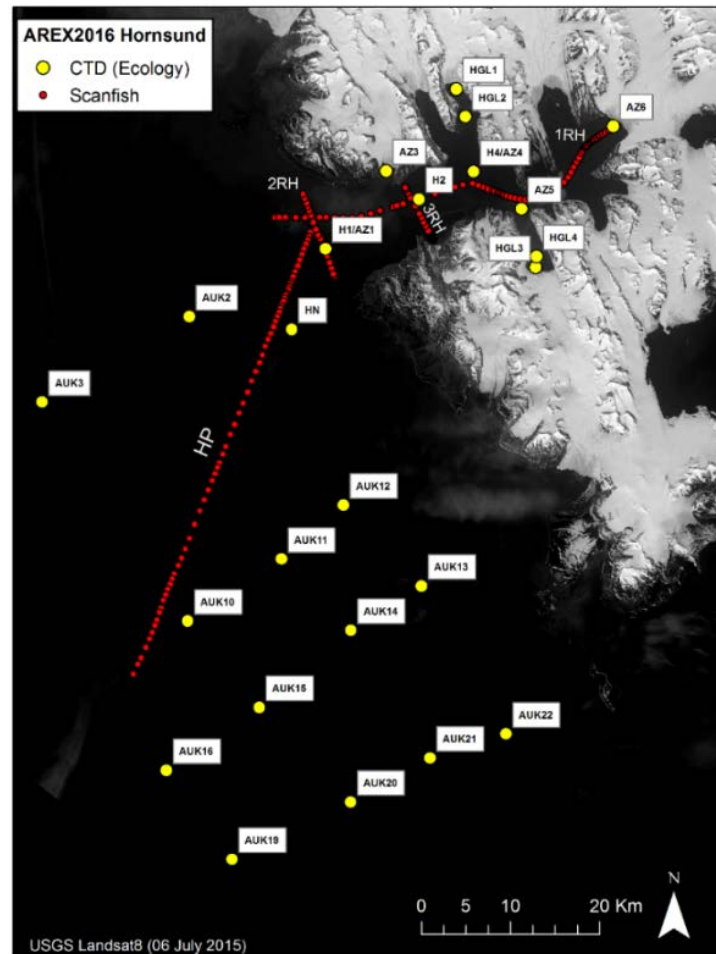
Hornsund



CTD measurements in Svalbard fjords July- August 2016

Kongsfjorden

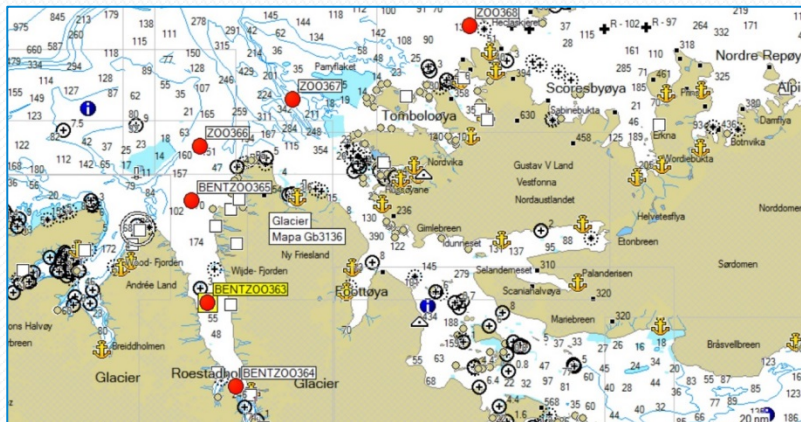




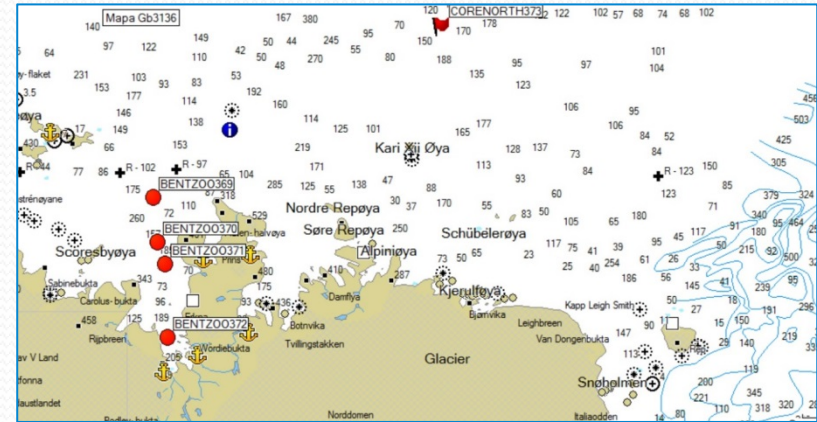
Measurements on Svalbard shelf, August 2016
CTD profiles, CTD towed section

Bottom sediments stations, Northern and north-eastern Svalbard, August 2016

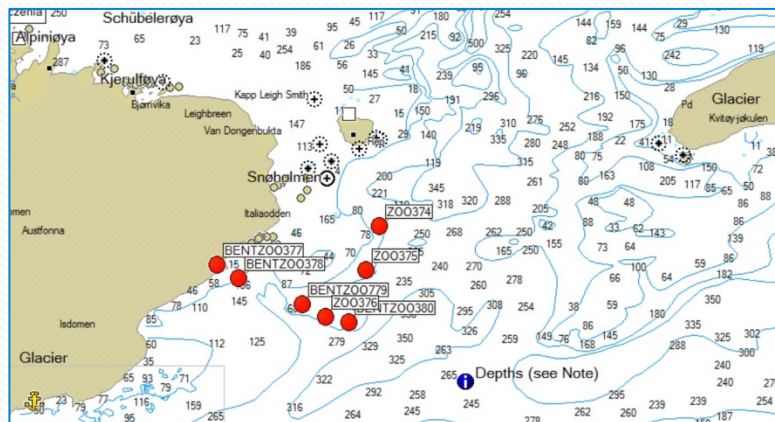
Wijdefjorden



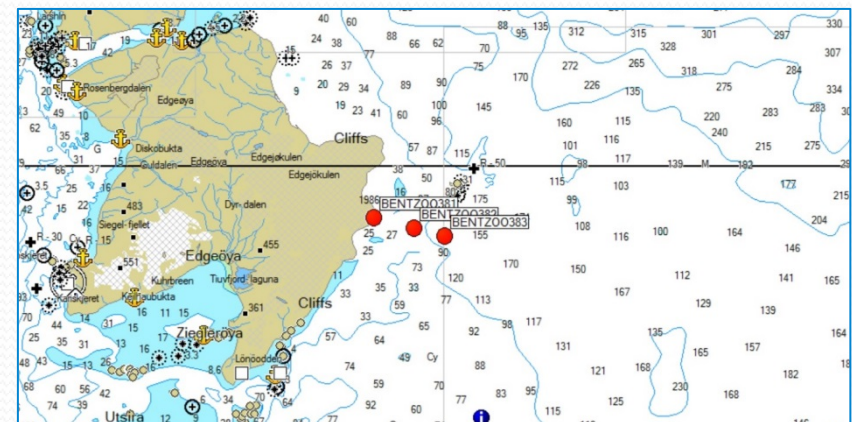
Rijpfjorden



Nordaustlandet



Edgeøya





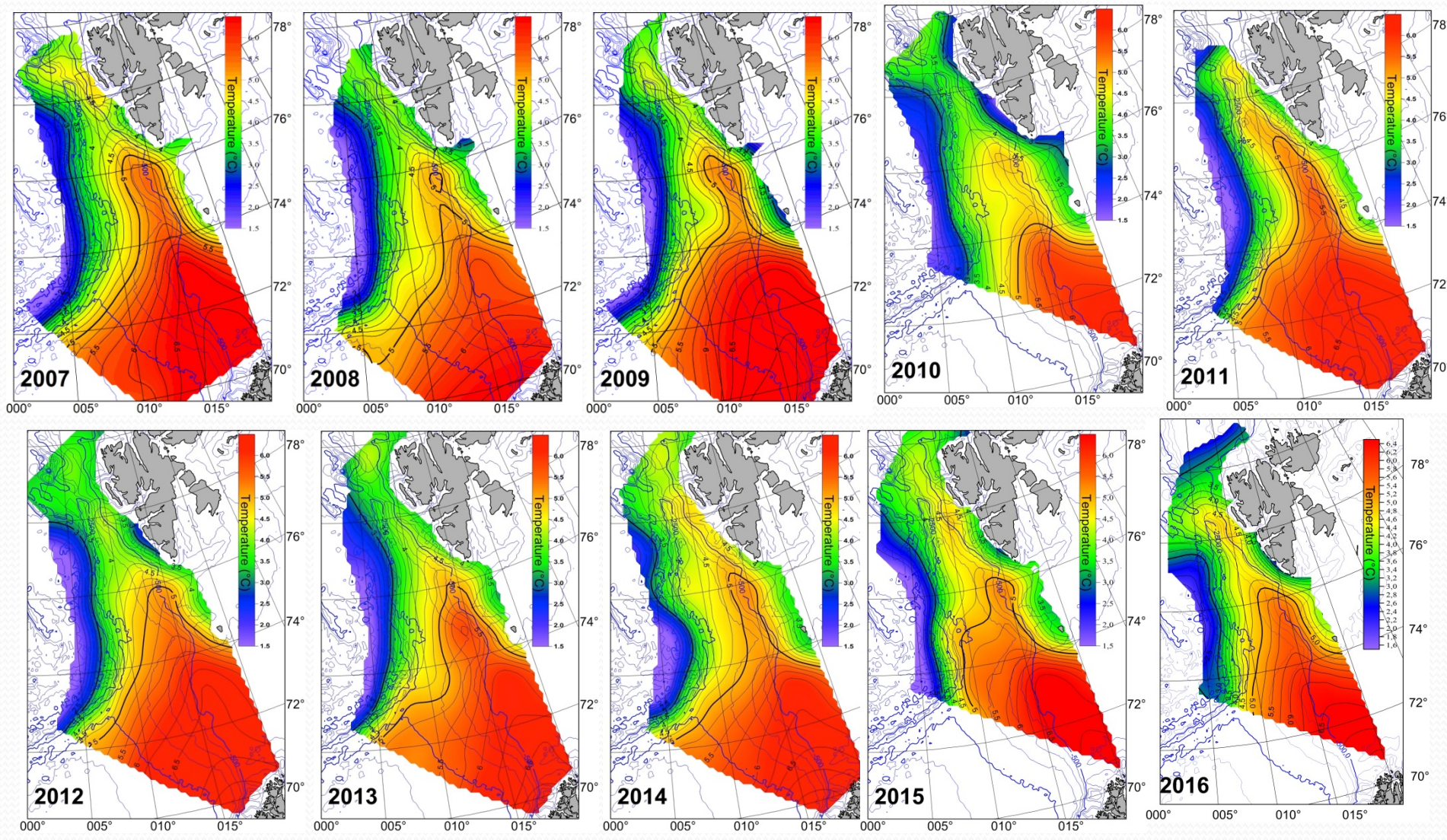
International Projects

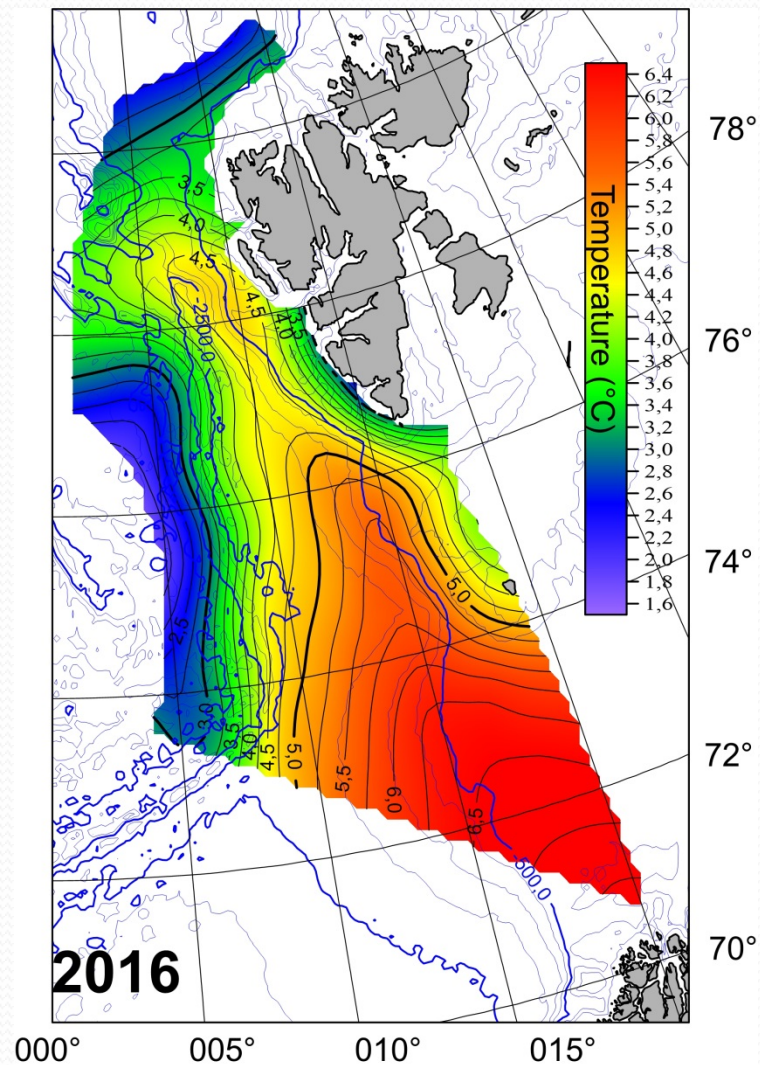
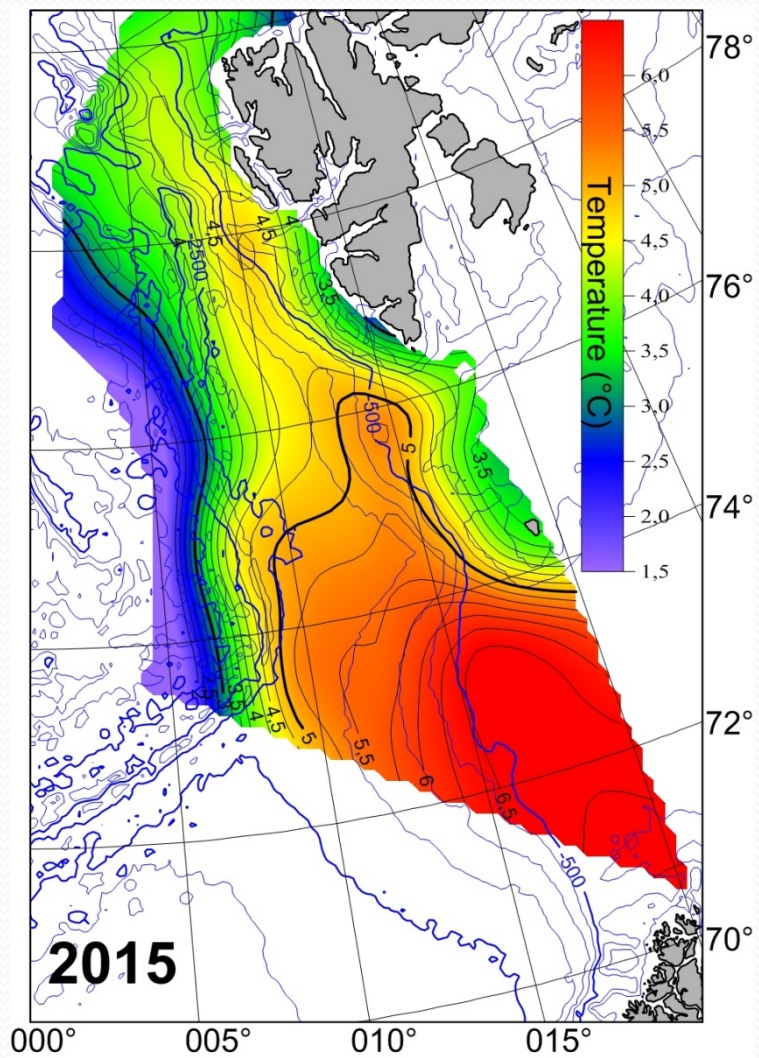


- **AWAKE-2** Arctic climate system study of ocean, sea ice and glaciers interactions in Svalbard area.
- **PAVE** – Atlantic Water Pathways to the Arctic; Variability and Effects on Climate and Ecosystems.
- **GLAERE** Glaciers as Arctic Ecosystem Refugia
- **DWARF** Declining size - a general response to climate warming in Arctic fauna?
- **CLISED** Climate Change Impact on Ecosystem Health - Marine Sediment Indicators
- **POLNOR** The Changing Ocean of the Polar North
- **COMMON SENSE** - Cost-effective sensors, interoperable with international existing ocean observing systems, to meet EU policies requirements (EU 7th Framework Programme)
- **ARGO POLAND** (part of EuroArgo ERIC)
- **PicMac , Larva**



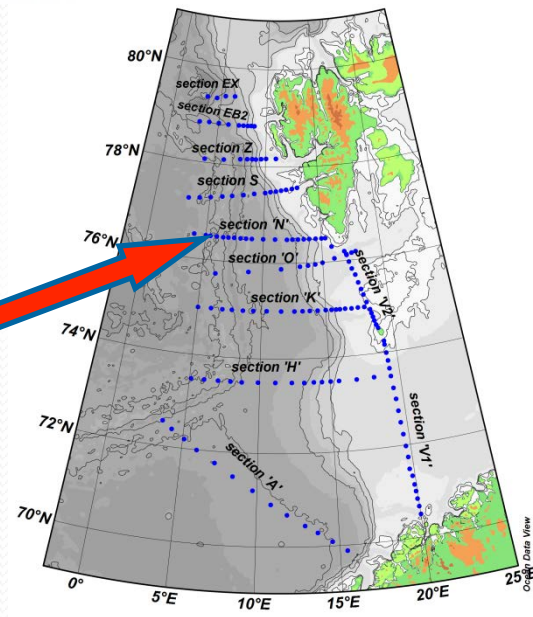
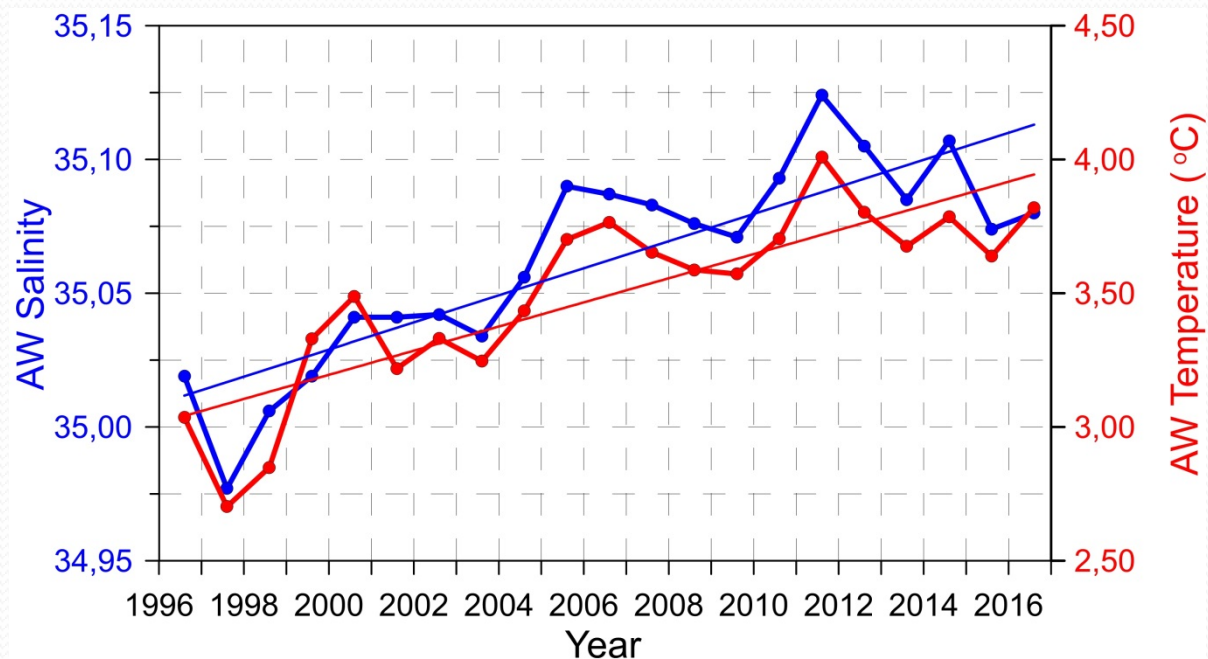
Temperature distribution at 100 dbar in 2007-2016



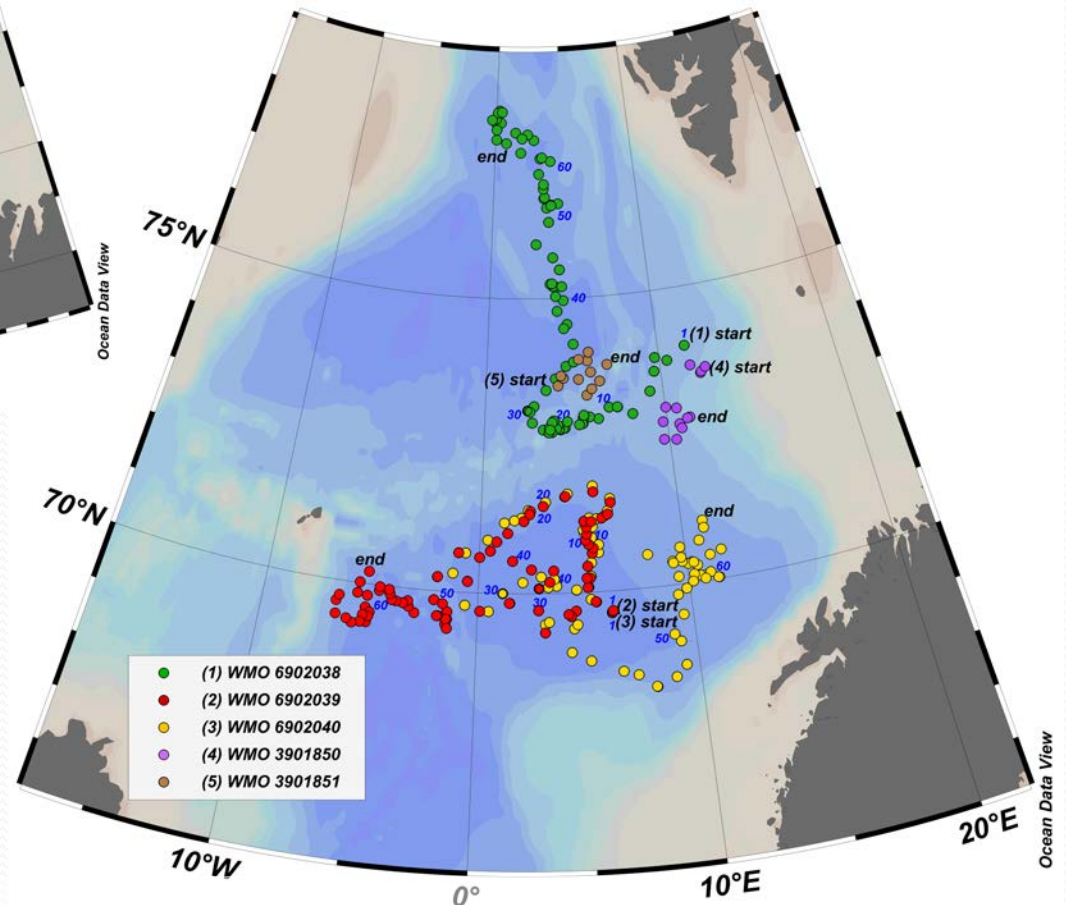
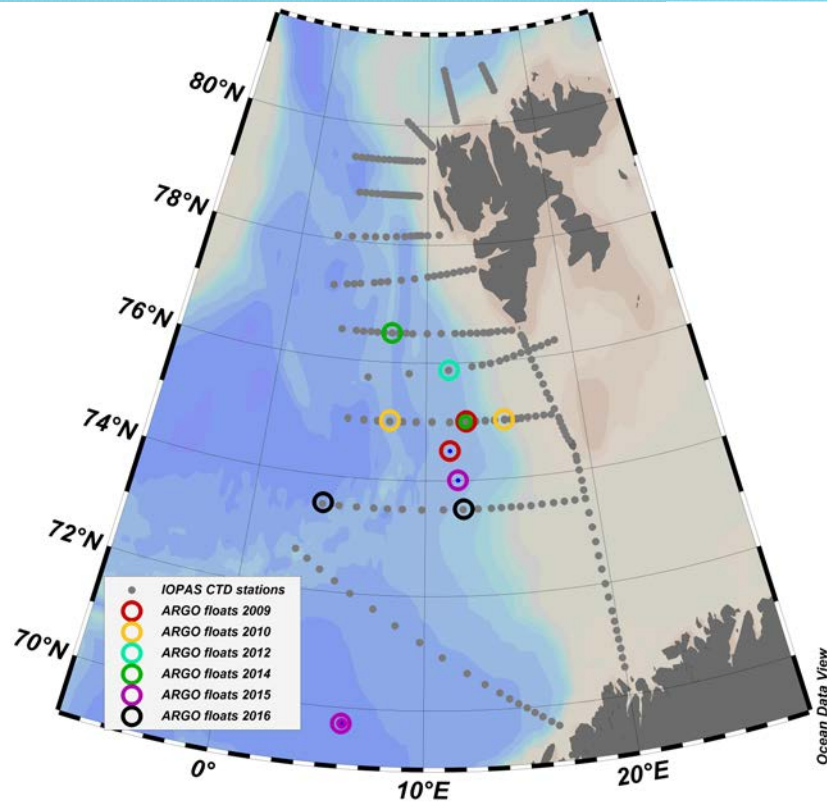




*Temperature and salinity
of Atlantic Water ($T > 2^{\circ}\text{C}$, $27.70 < \sigma_{\theta} < 27.97$)
on section N ($76^{\circ} 30' \text{ N}$)*

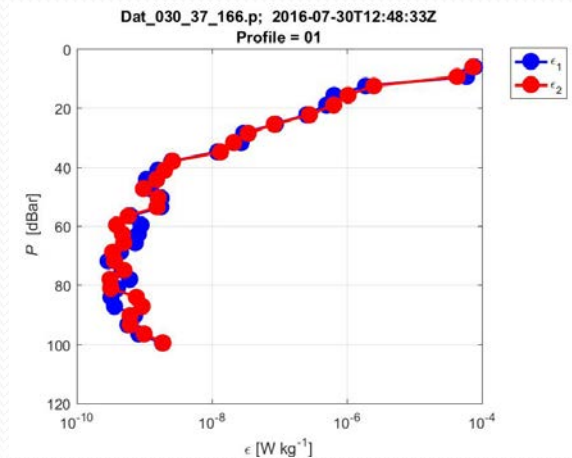
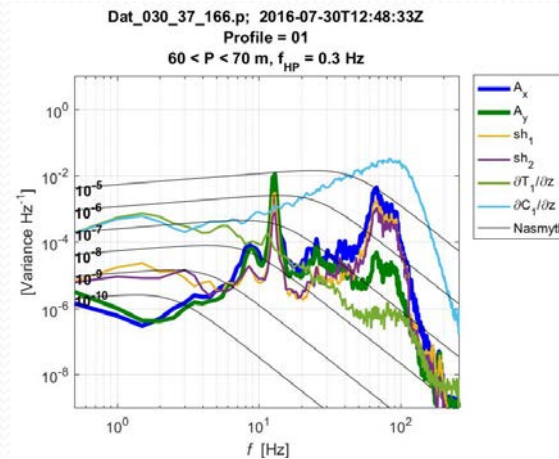
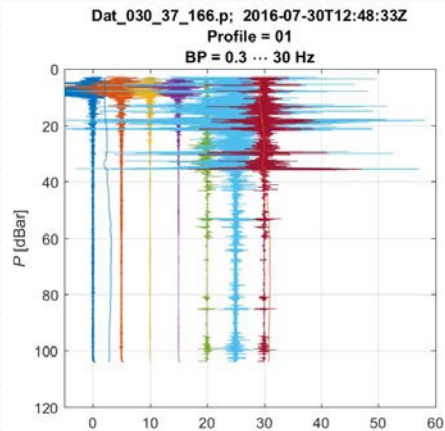
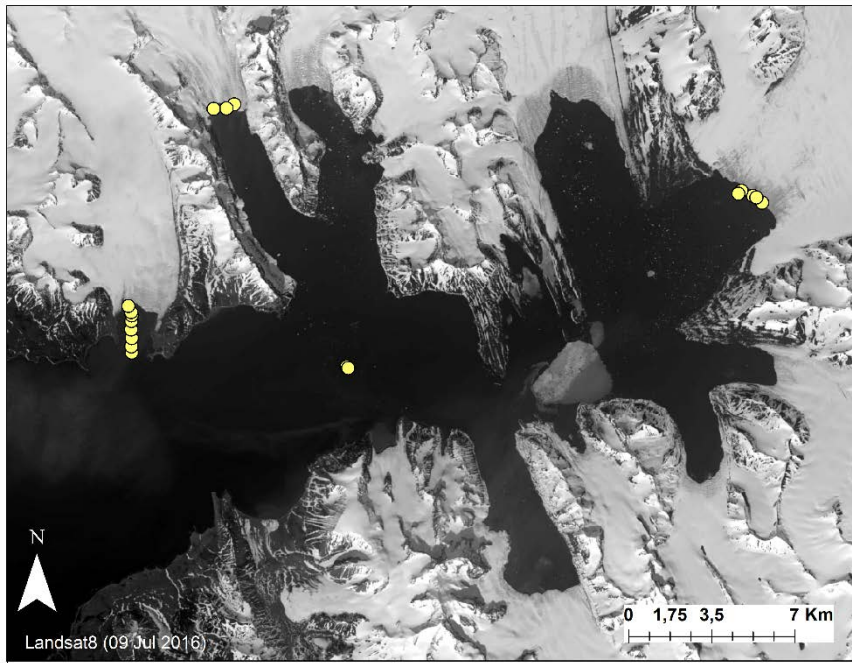


Deployment positions of the Argo-Poland floats



Trajectories of floats deployed in 2015 and 2016

Water column microstructure measurements in Hornsund



Shear, turbulent kinetic energy spectra and dissipation rate at the profile near glacier front

Yachts cruises

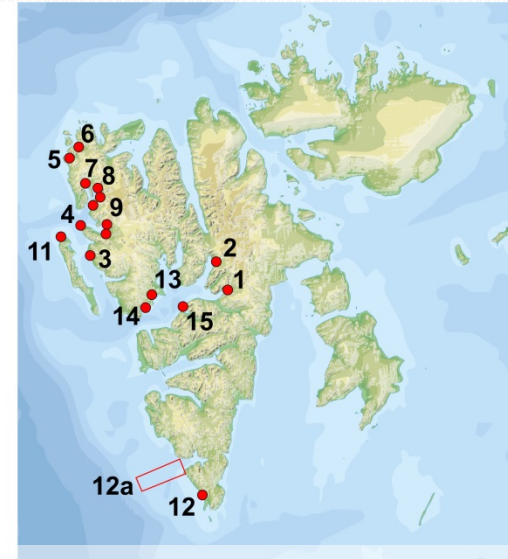
S/Y Magnus Zarembo, S/Y Toroa



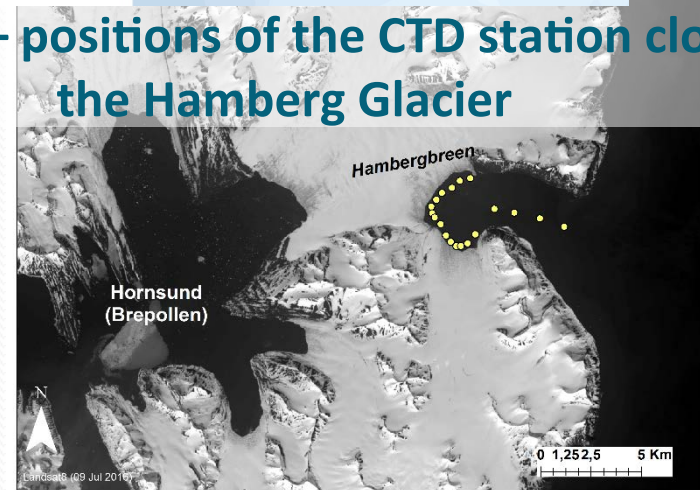
S/Y Magnus Zarembo

CTD profiles, acoustics measurements, plankton samples

- 1 Tempelfjord
- 2 Adolfbukta
- 3 Hornbaeckbukta
- 4 Ny Alesund
- 5 Magdalenafjorden
- 6 Smeerenburgfjorden
- 7 Lillehoekbreen
- 8 Kollerbreen
- 9 Mayerbreen
- 10 Kongsfjorden
- 11 Fuglehuken
- 12 Olsokbreen
- 12a plankton profiles
- 13 Borebukta
- 14 Ymerbukta
- 15 Longyearbyen



S/Y Toroa – positions of the CTD station close to the Hamberg Glacier





Summary

- 270 CTD, LADCP stations in deep ocean
- 70 stations in Svalbard fjords
- 2 Argo floats in the WSC
- Sediments stations



- Slight increase of the AW water temperature and salinity in the Fram Strait region;
- Positive trends of AW salinity and temperature.



2017 Plans

- Continuation of the AREX long-term monitoring program (summer field campaign, June-August)
- Operational access to the IOPAN database
- Participation in the H2020 INTAROS project
- Organisation of the ASOF meeting in Sopot (March 2017)
- Deployment of 2 Argo floats in the West Spitsbergen Current
- Recovery and redeployment of moorings north of Svalbard under the A-TWAIN project