NACO: Sustained gliders in the Atlantic approach to the Arctic

EGO meeting, Gran Canaria, March 2011

**Peter M. Haugan, Geophysical Institute,
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www.gfi.uib.no
www.bjerknes.uib.no

North Atlantic Sites/sections

Fram Strait

BSX

BSO

M

Greenland Scotland Ridge

"Nuka Arctica"

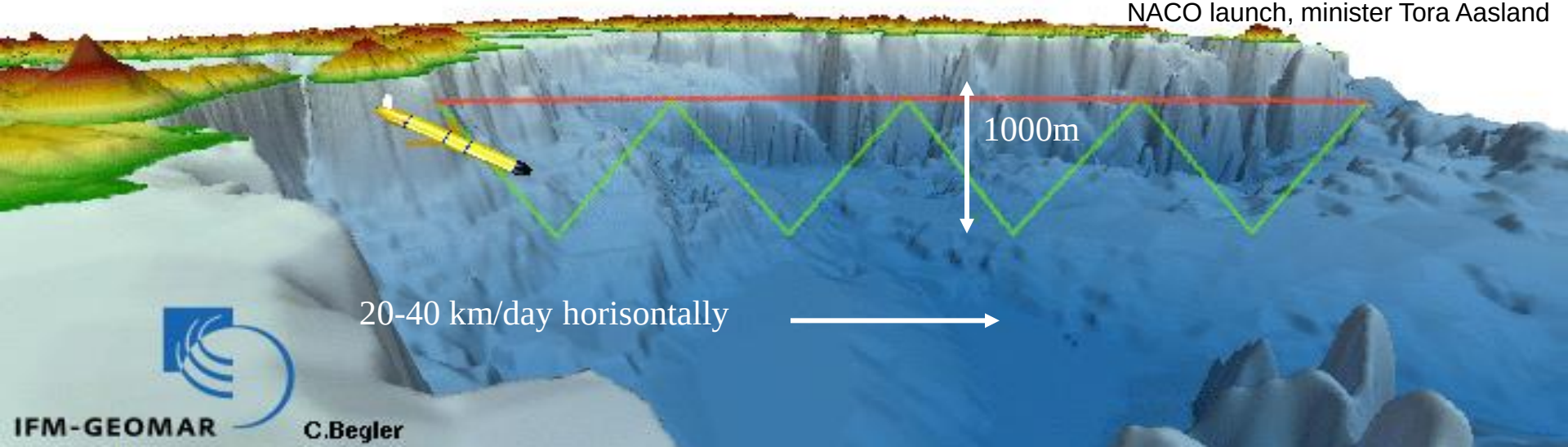
26.5 Rapid

New technology: Norwegian Atlantic Current Observatory (NACO)
Glider observatory off the mid-Norwegian shelf from 2011

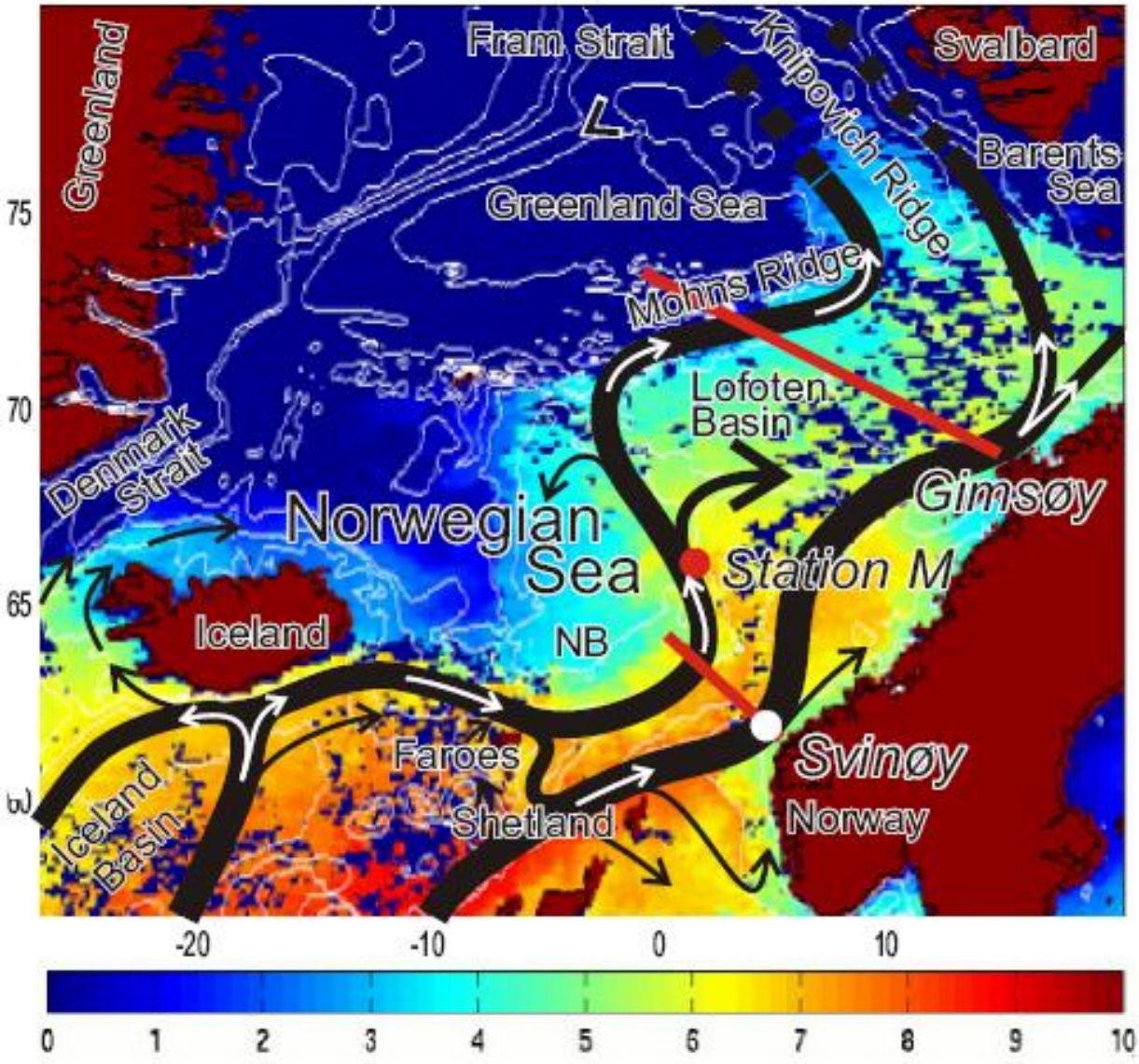
Operation central

Data centre → Models, ...

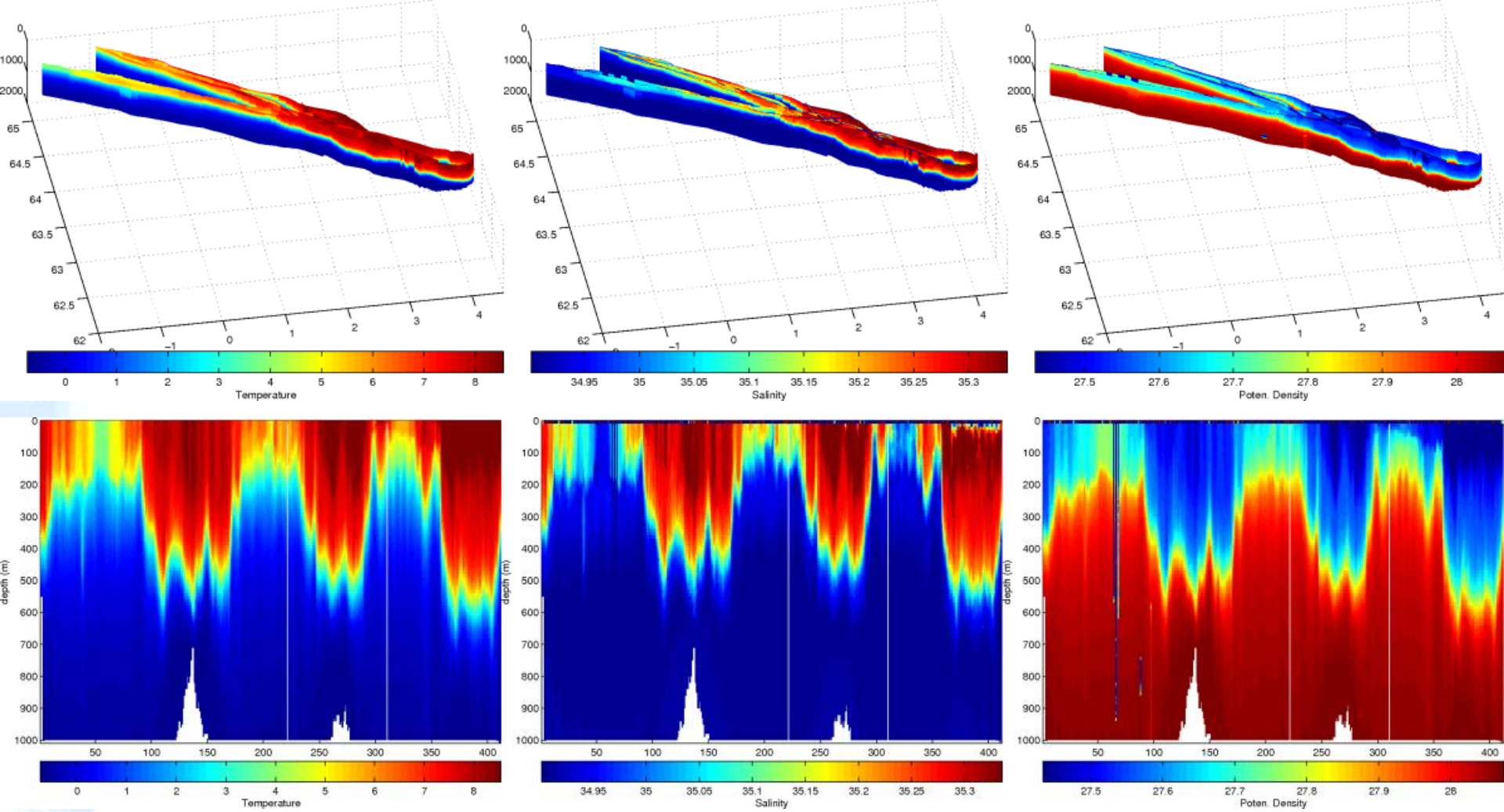
NACO launch, minister Tora Aasland



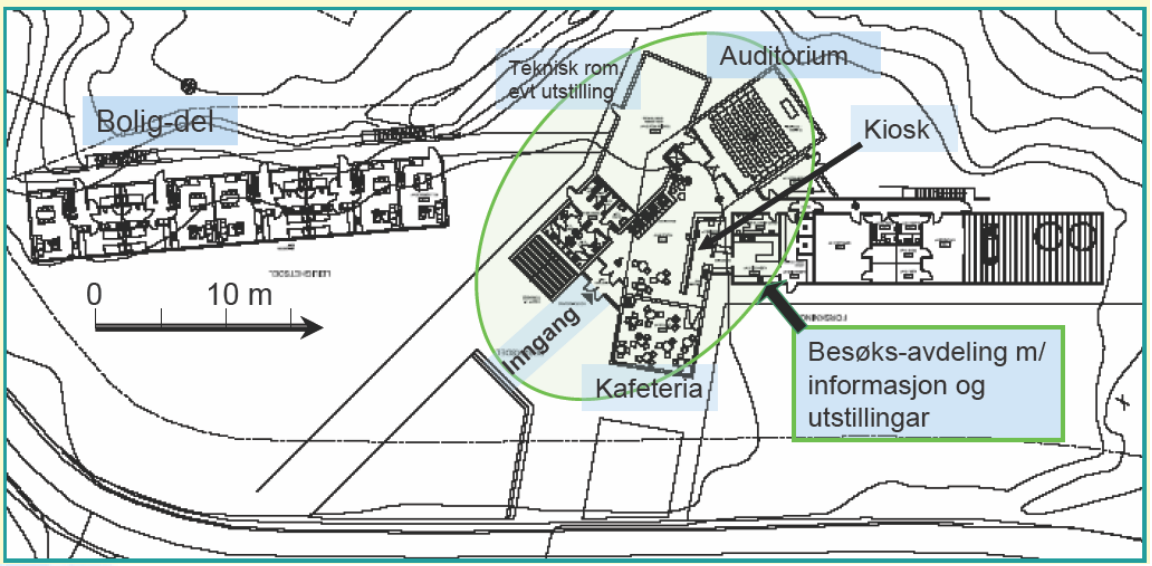
www.rundecentre.no

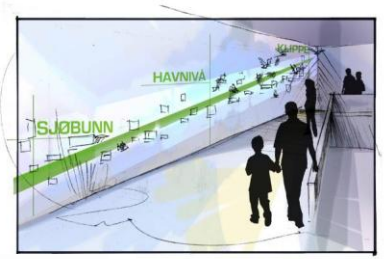


Initial focus area for NACO, national base funding for 6 gliders and support, available for international research projects contributing to running costs.



Single project data from gliders at Svinøy section 2009
(Ref talk by Kjell Arild Orvik yesterday)





Runde Environmental Centre

Waters near Runde

Nationally unique in terms of marine biodiversity and bioproduction – spawning areas, seabirds, flora/fauna, and wave energy resources

Status NACO March 2011

Revised contract with Norwegian Research Council expands responsibility – not only regional off mid-Norwegian shelf but serve all Norwegian glider user projects as national facility (e.g. towards Faroes already, probably Svalbard soon). Also still serve non-Norwegian users as appropriate.

Include and involve Institute of Marine Research (Henrik Søiland et al) as full partners in the infrastructure together with Geophysical Institute, UiB, and Runde Environmental Center. Include also existing gliders in Norway (Slocum, IMR).

We are here to enjoy EGO and learn from all of you:

Peter M Haugan, GFI, NACO resp.

Kjell Arild Orvik, GFI, oceanography

Idar Hessevik, GFI, IT

Henrik Søiland, IMR, oceanography

The vision: The 2nd Marine Board Forum, held in Brussels on 16 September 2010, culminated in a unanimous call from its participants for the prioritization at national and EU level of actions to deliver:

"A long-term, stable and integrated network of strategic marine observatories, installed and operated through multi-national cooperation and support, providing consistent in situ data from the seas and oceans in support of the EU Integrated Maritime Policy and as a driver for smart, sustainable and inclusive growth in Europe (Europe 2020).

Actions

1. A Europe-wide mapping exercise and gap analysis on long-term marine data provision

2. A European strategy on the development of an integrated network of marine observatories.

Thermae Palace (Oostende, Belgium, 12-13 October 2010)

Real-time, Long-term Integrated Observations of European Seas for Monitoring and Research

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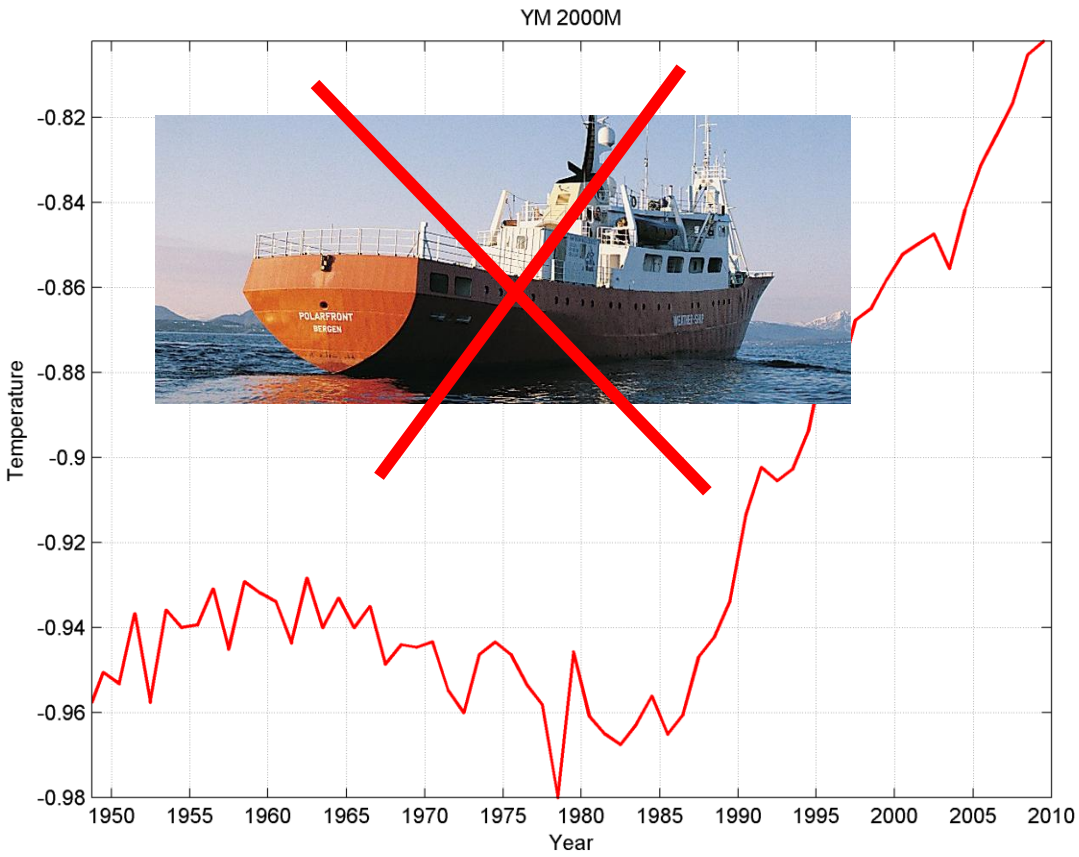
From POLARFRONT to (1) PolarBuoy



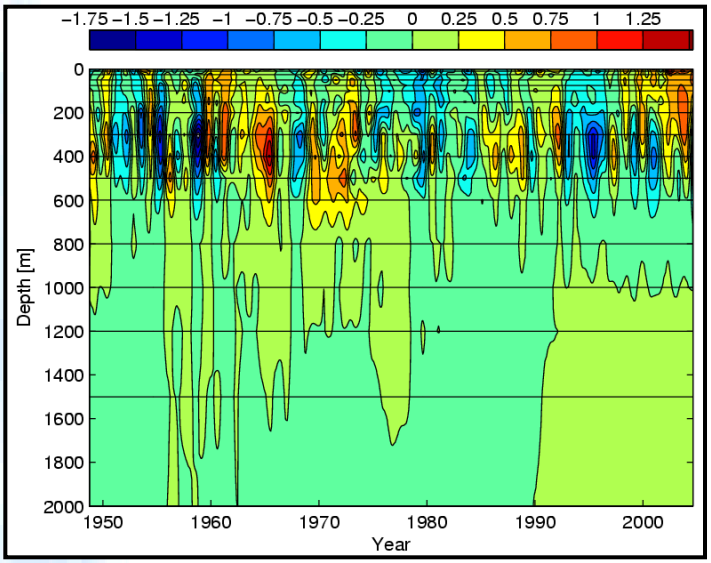
1948-2010 Temperature from 2000 m depth at station M

Ship operations discontinued December 2009. Cost 2-3 MEUR/year not sustainable over Met Office budget.

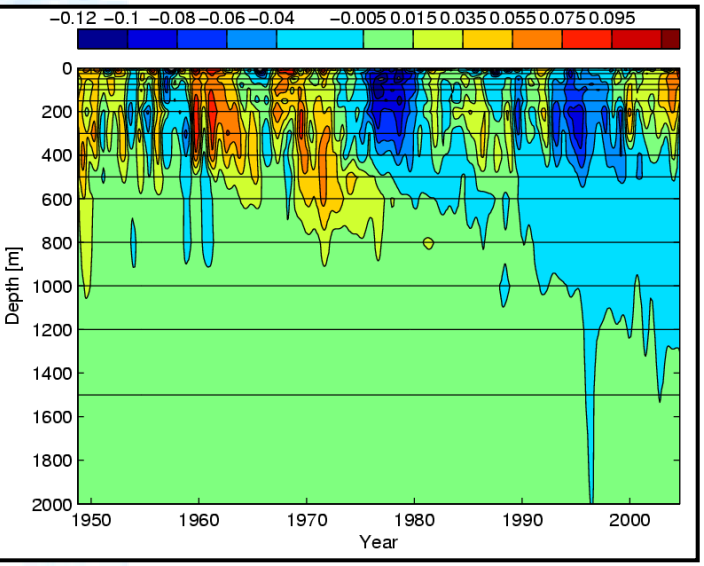
New "PolarBuoy" funded from Norwegian Research Council with similar one time investment cost. Will not measure atmospheric parameters or ocean carbon with similar precision, but provide continuity in deep ocean hydrography.

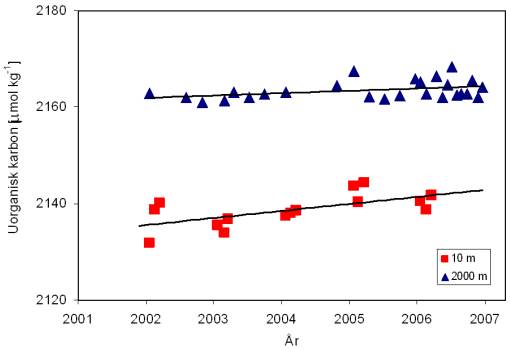
Also invite all passing RVs to contribute to time series

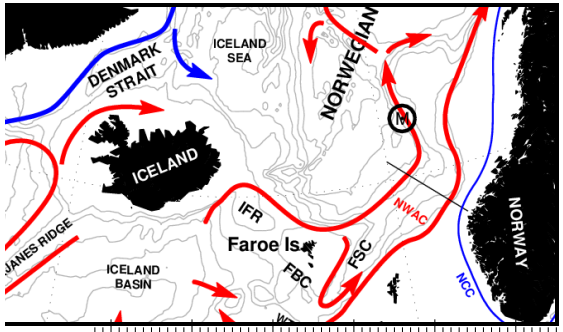
Station M-60 years in the Nordic Seas

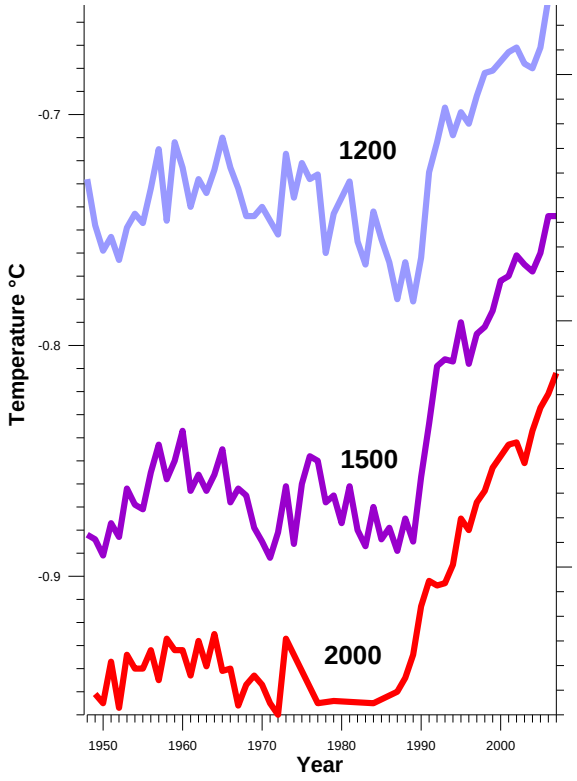


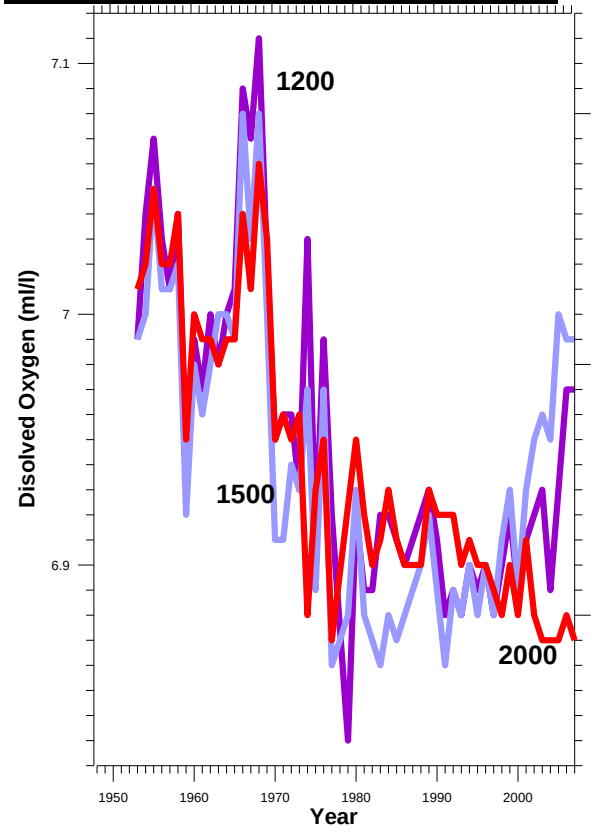
Temperature & salinity anomalies











Temperature and O_2 at 1200, 1500, 2000 m

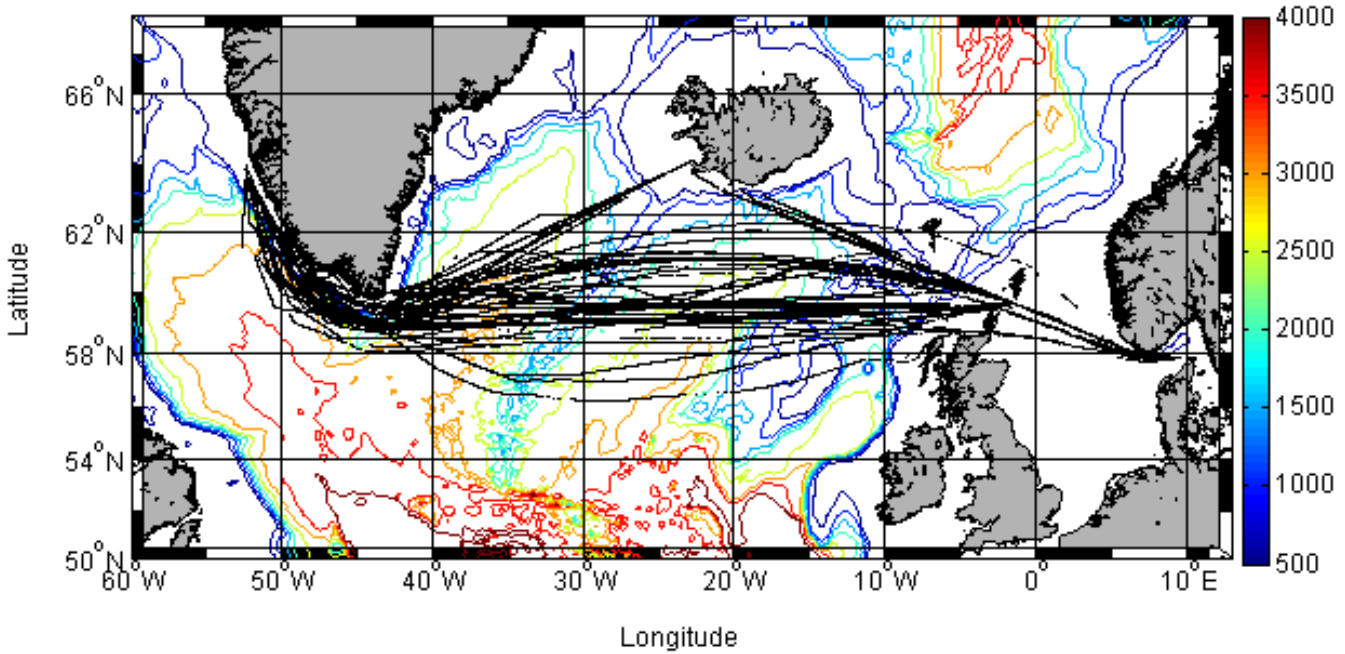
Nuka Arctica – ship-mounted ADCP, underway carbon

- Installed in 1999
- Cooperation with

➢NIVA

➢University of Rhode Island

➢Fisheries Laboratory of the Faroes



Establishment of cable-based ocean observatories in Norway:

"The gateway to the far north"

Operation:

Hardanger Fjord

Implementation:

Vesterålen Margin

Svalbard Margin

Ocean Ridge Demo Mission

Planning:

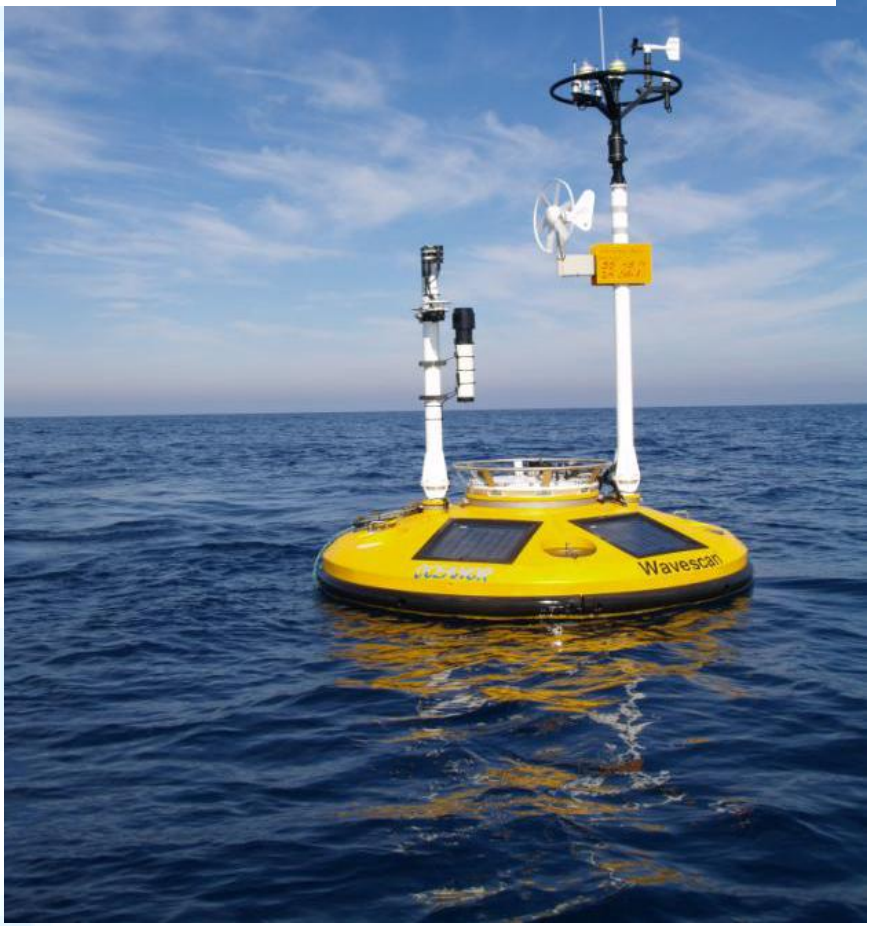
Svalbard Ocean Ridge

Snøhvit

Main surface currents

EFOWI Instrumentation

2 met-ocean buoy systems



3 laser wind profilers

laser scintillometer

Funded from 2009 NORCOWE/NOWITECH: Joachim Reuder GFI/CMR

NOWERI coming infrastructure