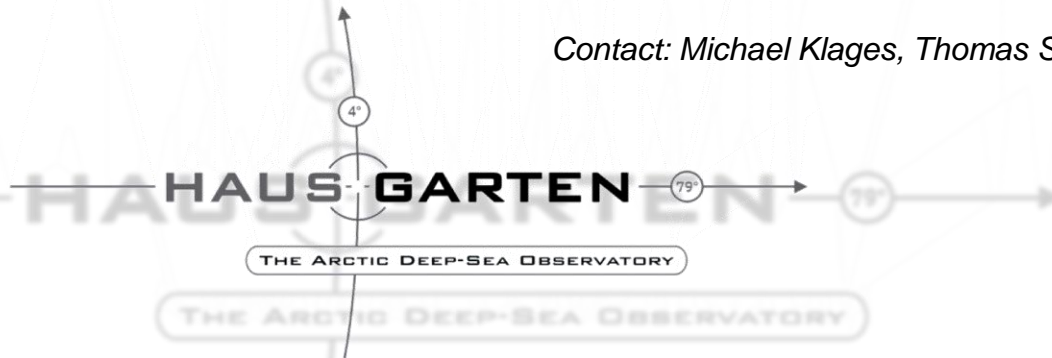
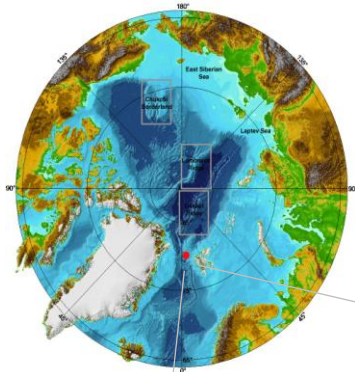
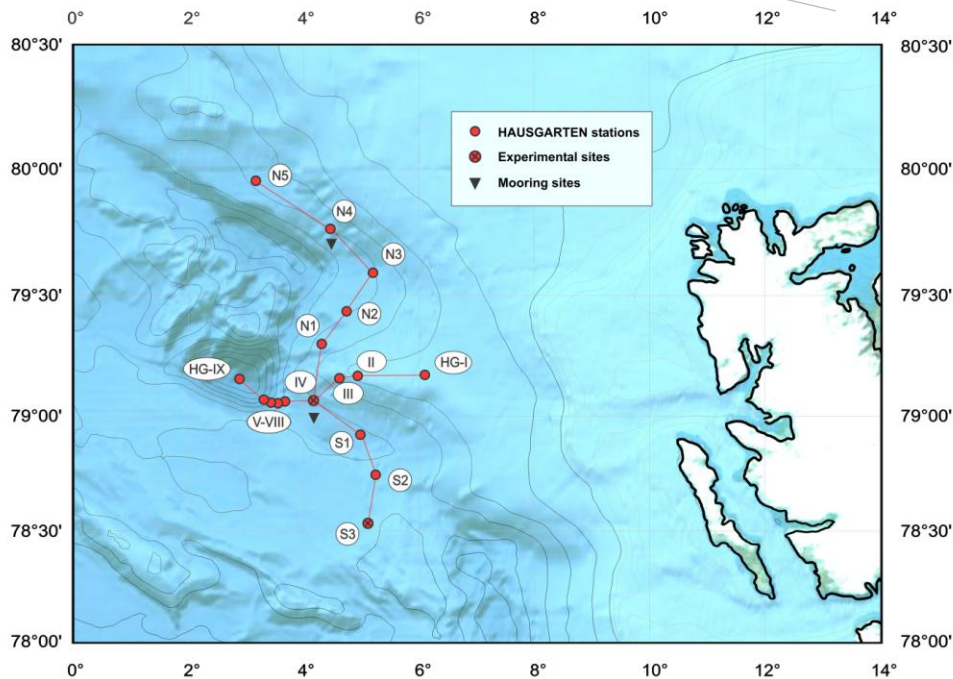


Contact: Michael Klages, Thomas Soltwedel



State of the Art:

- since 1999
- 17 stations along two transects
- 1000 - 5500 m water depth
- repeated sampling in summer months
- continuous measurements and sampling in the water column
- visual observations at the seafloor
- benthic experimental work



Core Measurements

- Pelagic Zone*

particle flux (biogenic, lithogenic), currents (speed, direction), oxygen concentrations

- Near-Bottom Zone

currents and oxygen concentrations in high-resolution, nutrients, bacterial densities

- Sediment-Water-Interface

carbon remineralisation (oxygen microelectrodes, sediment community oxygen consumption)

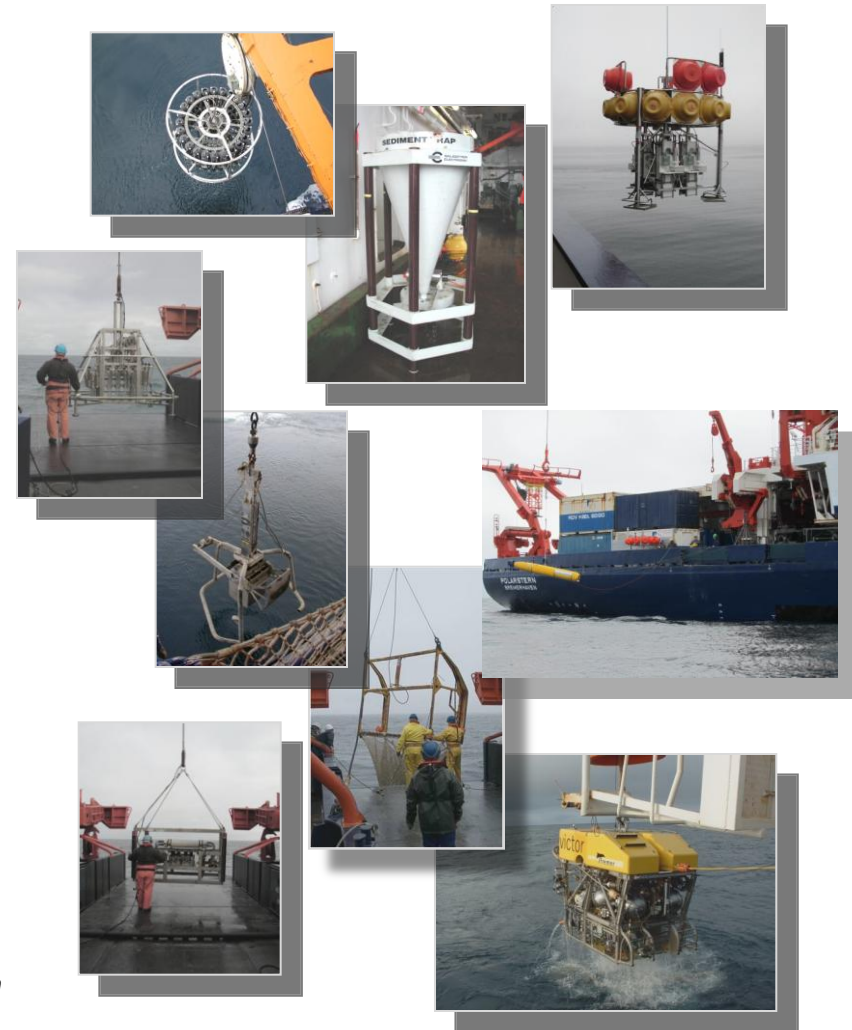
- Sediments

granulometry, porosity, organic carbon, carbonates, opal, C/N ratios, biomarker (e.g. alkenone, n-alkanes), organic matter input (phytodetrital pigments)

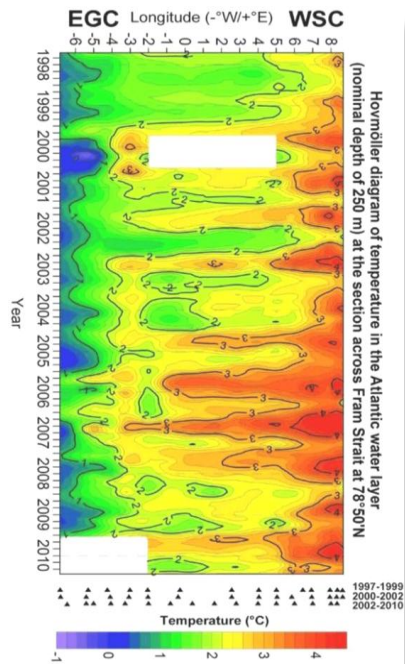
- Benthos

bacteria, meiofauna, macrofauna, megafauna including fish (densities, biomass, dispersion, biodiversity)

* new working on “Phytoplankton Ecology and Biogeochemistry in the Changing Arctic Ocean” (PEBCAO)

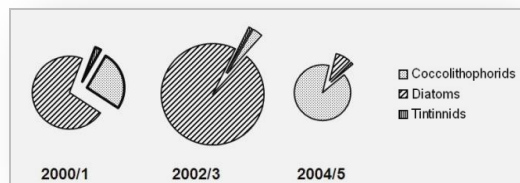


Some results from the Time-Series.....

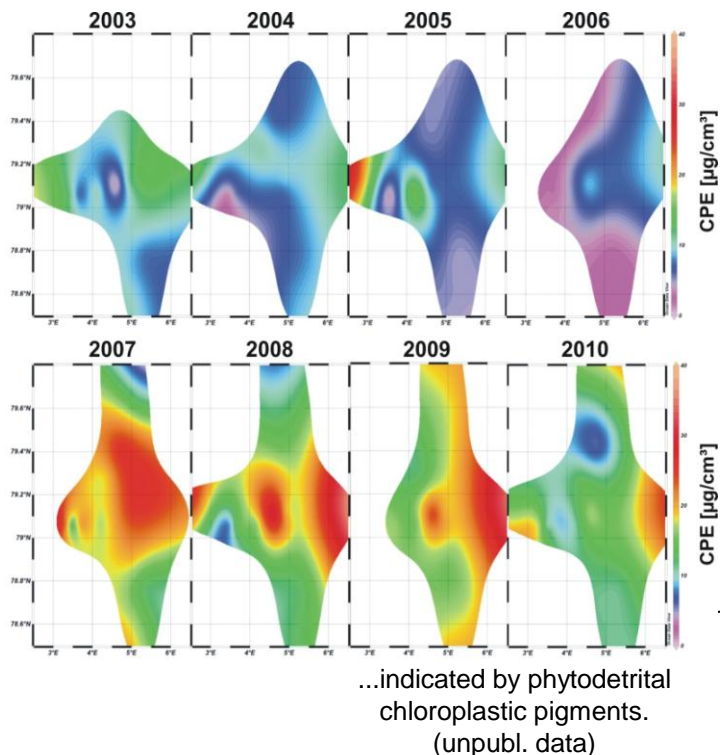


SST increase at 250 m in Fram Strait (Beszczynska-Möller A. et al. (subm.) ICES J. Mar. Sci.)

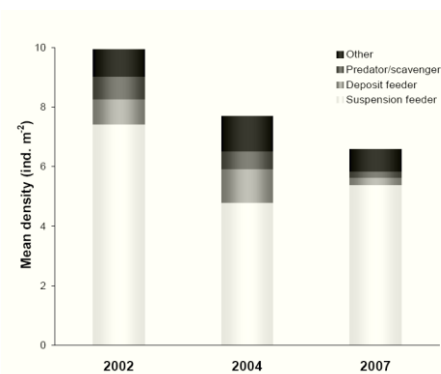
Variations in sediment-bound organic matter in the HAUSGARTEN area...



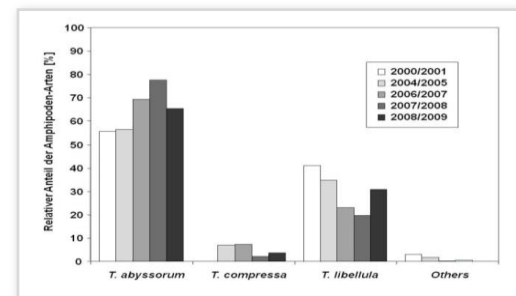
Temporal variability of particle fluxes between 2000 and 2005 (Bauerfeind et al., 2009)



...indicated by phytodetrital chloroplastic pigments. (unpubl. data)



Temporal variability in mega/epibenthos composition between 2002 and 2007 (Bergmann et al., 2011).



Relative proportions of *Themisto libellula* (polar) and *Themisto abyssorum* (boreal-subpolar) (Kraft et al., 2010)

Contributions to international Projects:

- European Seas Observatory Network (ESONET)
- European Multidisciplinary Seafloor Observatory (EMSO)
- Marine Biodiversity and Ecosystem Functioning (MarBEF)
- Continental Margin Ecosystems (COMARGE)
- Hotspot Ecosystem Research (HERMES / HERMIONE)
- Svalbard Integrated Arctic Earth Observing System (SIOS)
- Integrated Carbon Observation System (ICOS)
- Oxygen Monitoring in Aquatic Ecosystems (HYPOX)
- Arctic Regional Ocean Observing System (ArcticROOS)

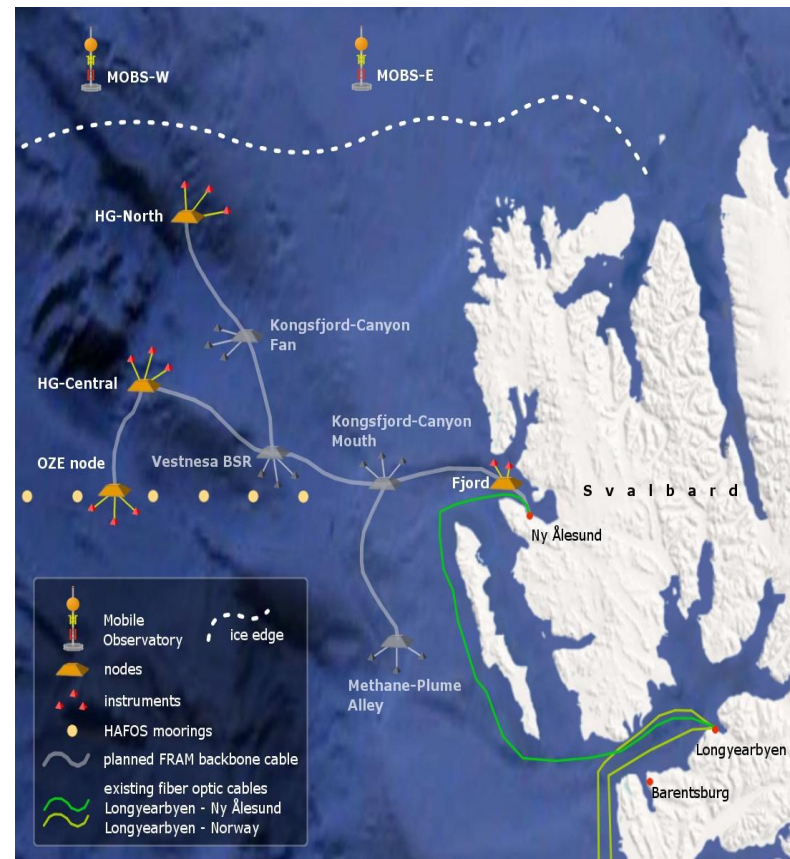
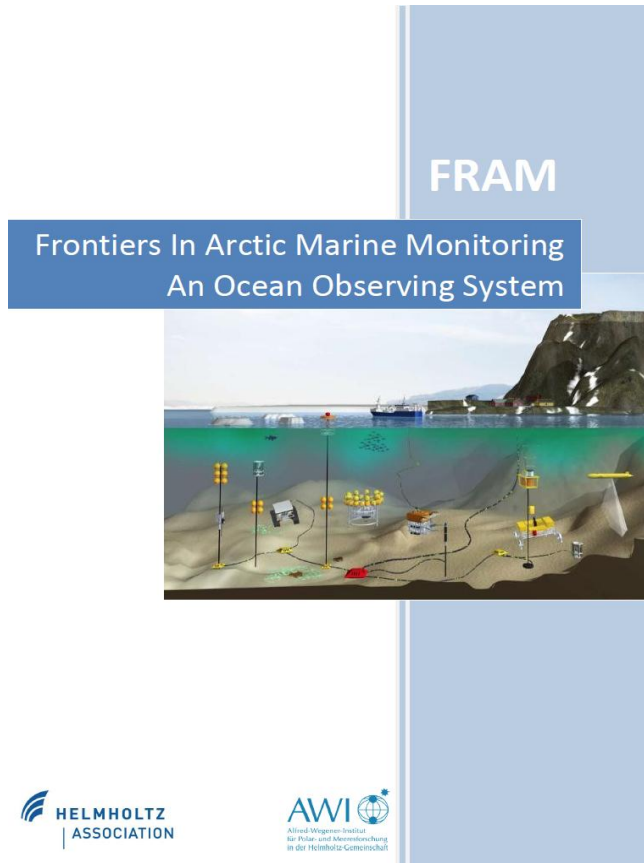


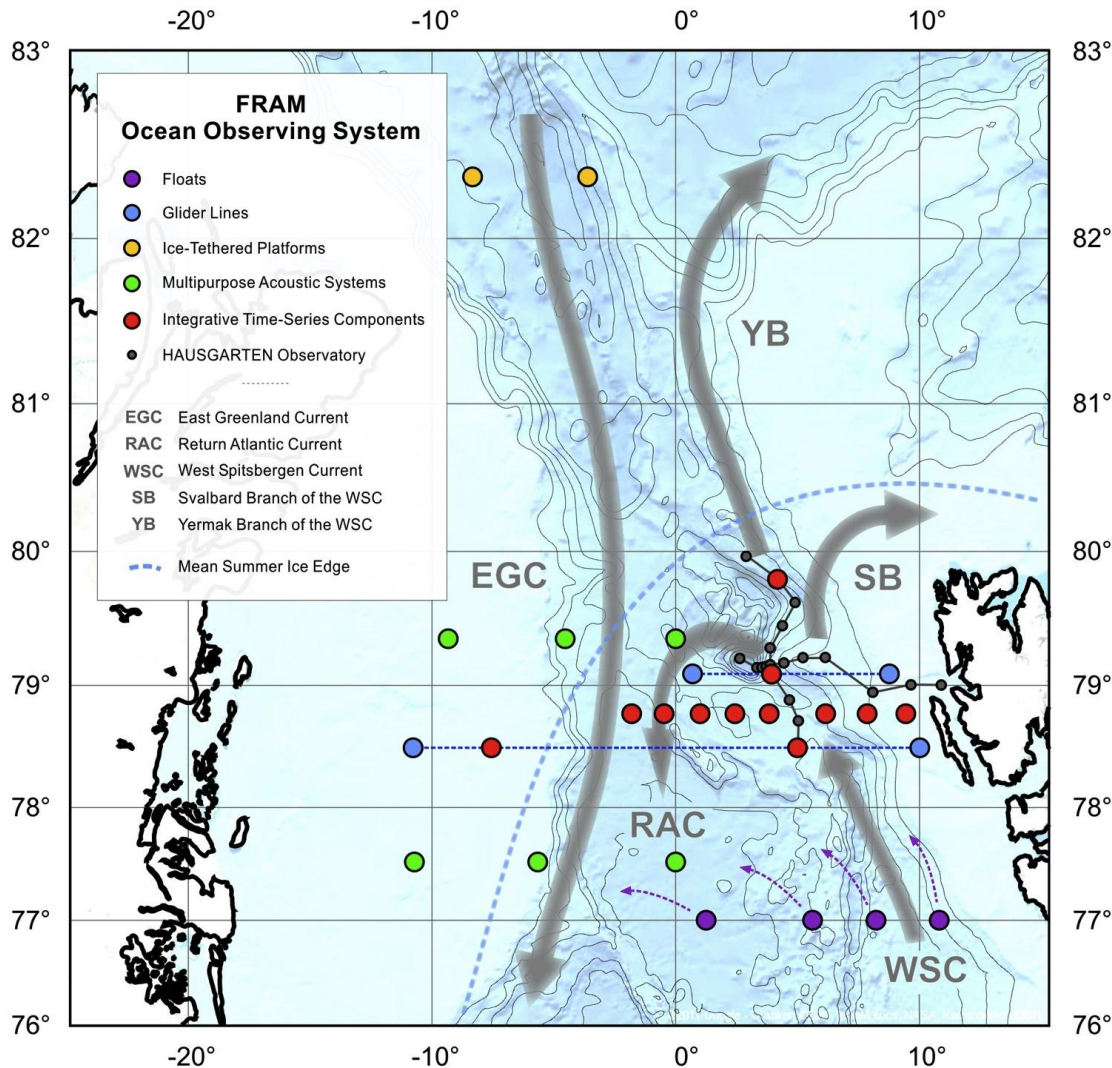
Future Perspectives:

FRAM - Observatory infrastructure proposal submitted by AWI to the Helmholtz Association has been recently evaluated

FRAM Cabled Observatory

- ☞ consortium of national and international partners
- ☞ on-line / real-time data from the deep Arctic Ocean
- ☞ unlimited energy supply for scientific instruments





FRAM Frontiers In Arctic Marine Monitoring An Ocean Observing System

