

INTAROS – Integrated Arctic Observation System

A project funded by EC - H2020-BG-09-2016

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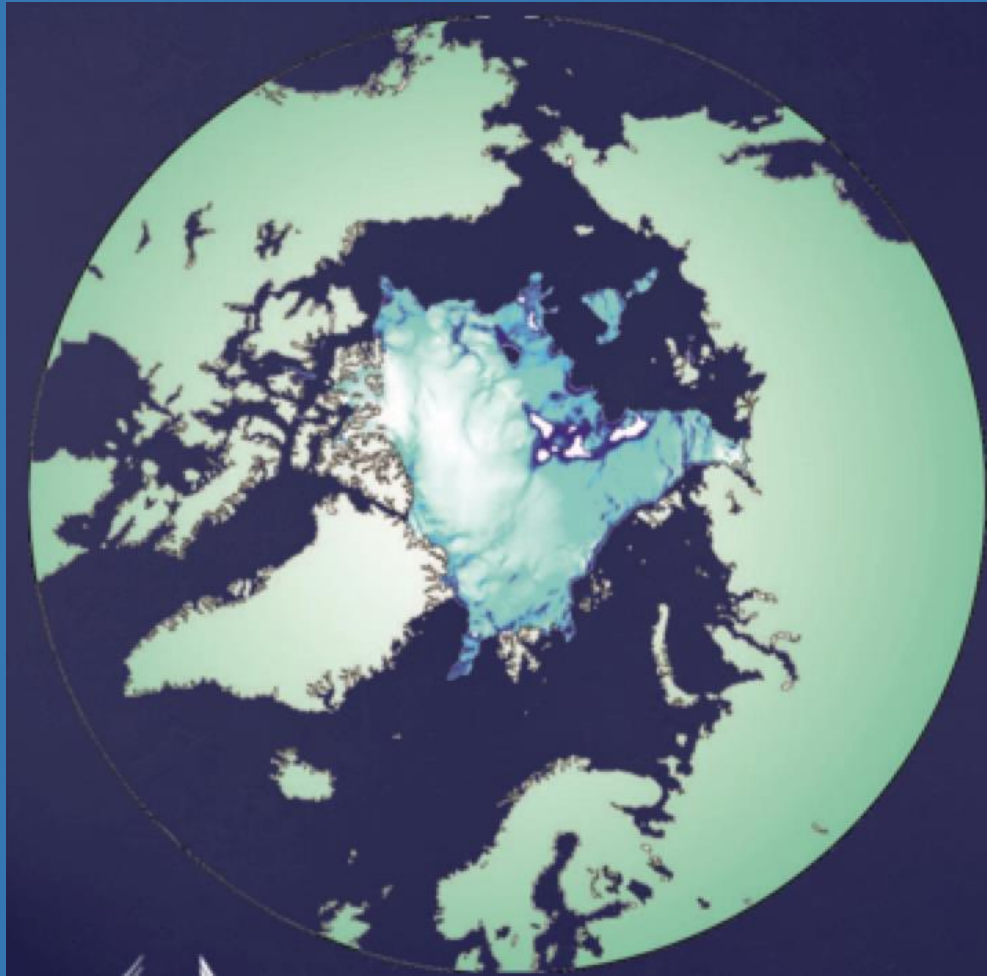
Nansen Environmental and Remote Sensing Center, Norway

Total budget: 15.5 mEuro - 49 partners from 20 countries

Start date: 01 December 2016 - Duration: 5 years



INTAROS overall objective



to develop an efficient integrated Arctic Observation System by

- extending,
- improving and
- unifying

existing and evolving systems in the different regions of the Arctic

INTAROS objectives

- ❑ Establish a *Pan-Arctic* forum for collaboration across EU and non-EU countries and transnational organisations (WP1)
- ❑ Develop a *Roadmap* for building a sustainable Arctic observing system (WP1)
- ❑ *Exploit existing observing systems and databases* (WP2)
- ❑ *Fill gaps* of the present in situ observing systems (WP3)
- ❑ Enhance *community-based* observing programmes (WP4)
- ❑ Develop and implement *the iAOS platform* for integration of multidisciplinary data from distributed repositories (WP5)
- ❑ Demonstrate *assimilation* into climate models (collaboration with BLUE ACTION)
- ❑ Conduct case studies using iAOS to selected stakeholders



An integrated Arctic Observing System needs to cover

- Atmosphere
- Ocean
- Terrestrial themes

at appropriate temporal and spatial scales and resolution.

The largest gaps are in the in-situ observation network, which should provide

- data not obtained from remote sensing and numerical models
- data needed for validation of remote sensing and numerical models

In situ observing system deployments

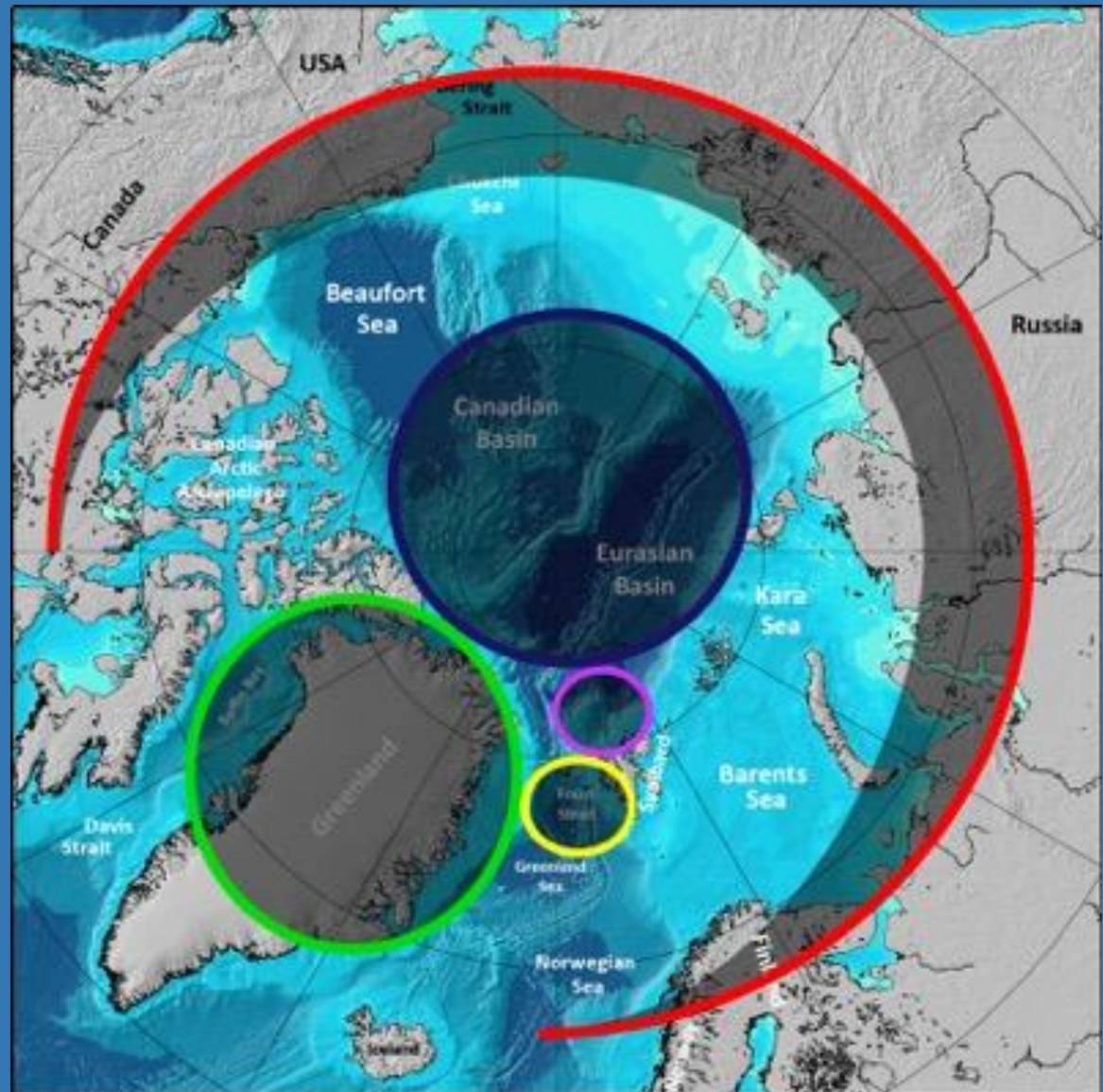
Coastal Greenland

North of Svalbard towards
the deep Nansen Basin

Fram Strait - Kongsfjorden

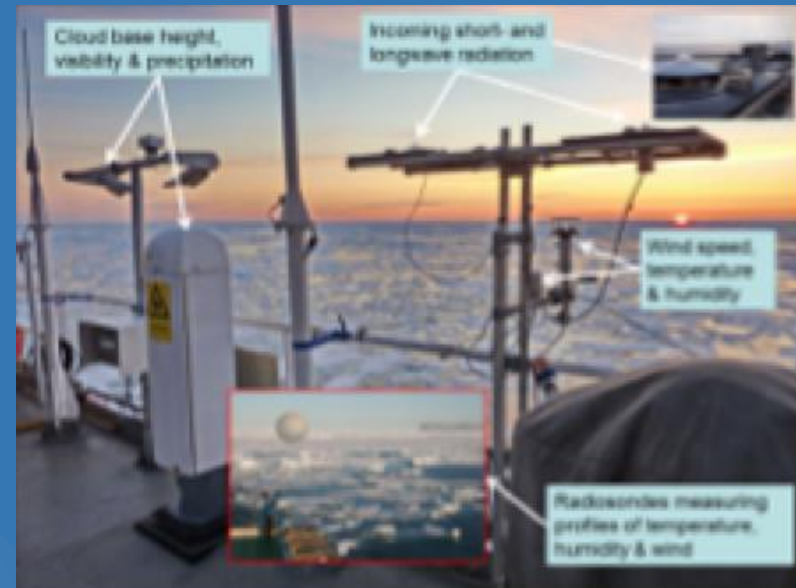
Central Arctic Ocean

Selected sites across Arctic
land areas



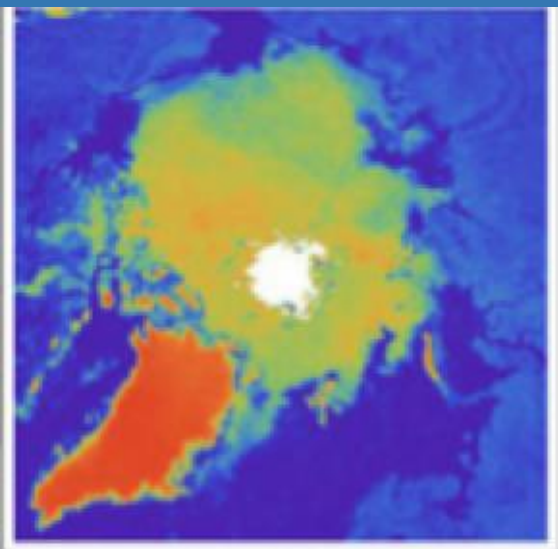
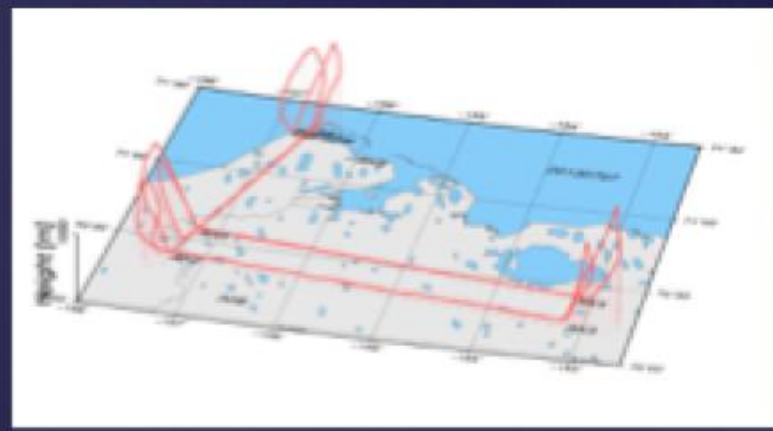
Atmosphere

Observing system using in-situ observations from supersites, field campaigns, buoys, research vessels, aircraft and satellites



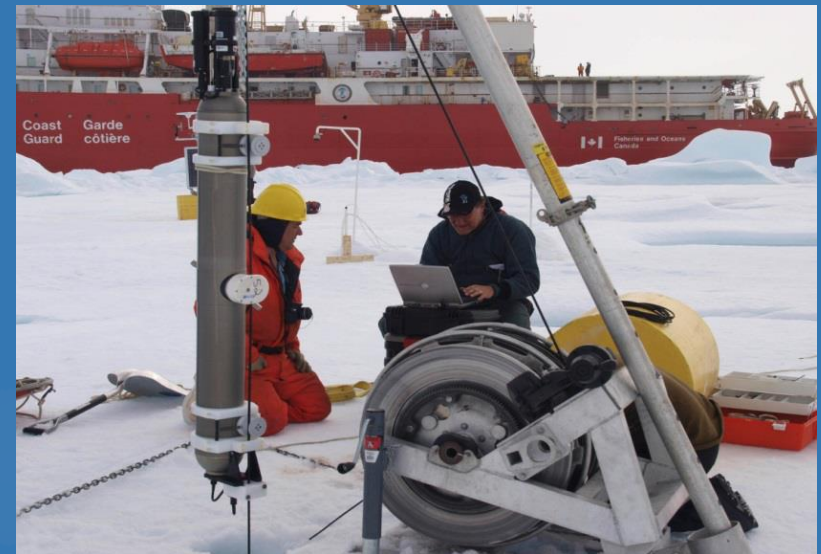
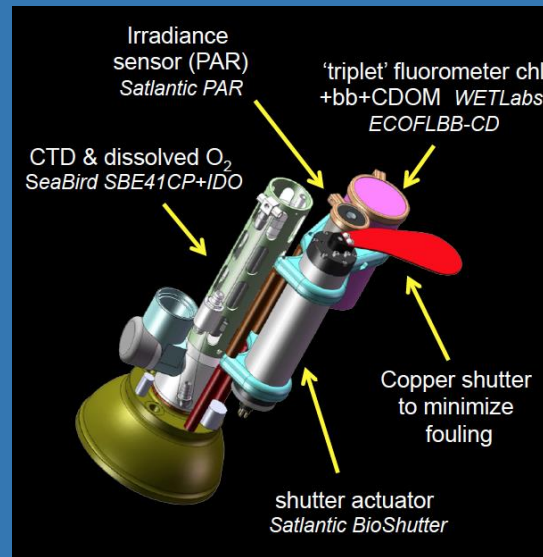
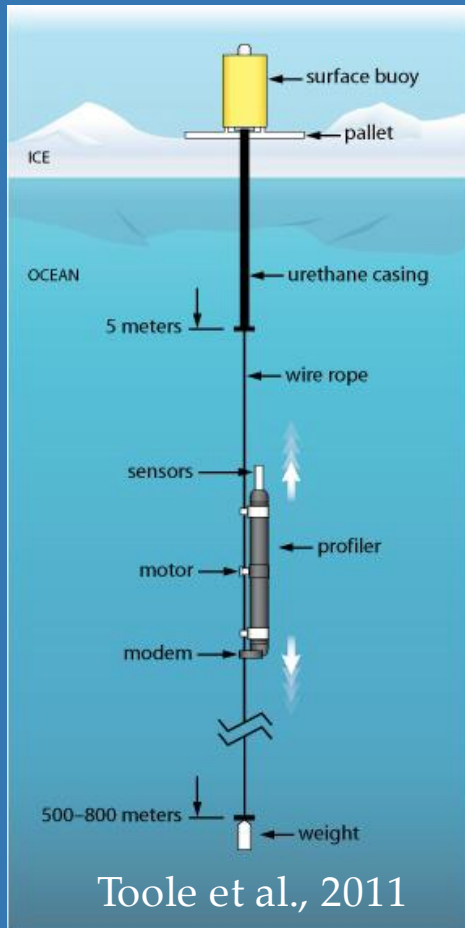
Cryosphere and land

- In-situ cryospheric and land observations from past and new campaigns and research stations
- Use of satellite snow, hydrological, and ice mass change products



Central Arctic Ocean

- ice-tethered platforms (WHOI) for measurements of ocean physical variables combined with biogeochemical sensors



Laney et al., 2014, 2015

Proposed sensors:

- Customized 'triplet' fluorometer to measure chlorophyll fluorescence, dissolved organic matter fluorescence, and optical scatter
- Radiometer (light levels)
- Copper shutter: for biofouling

Integrated Arctic Observing system: conceptual architecture

