

Swedish Arctic Research

Swedish Polar Research Secretariat

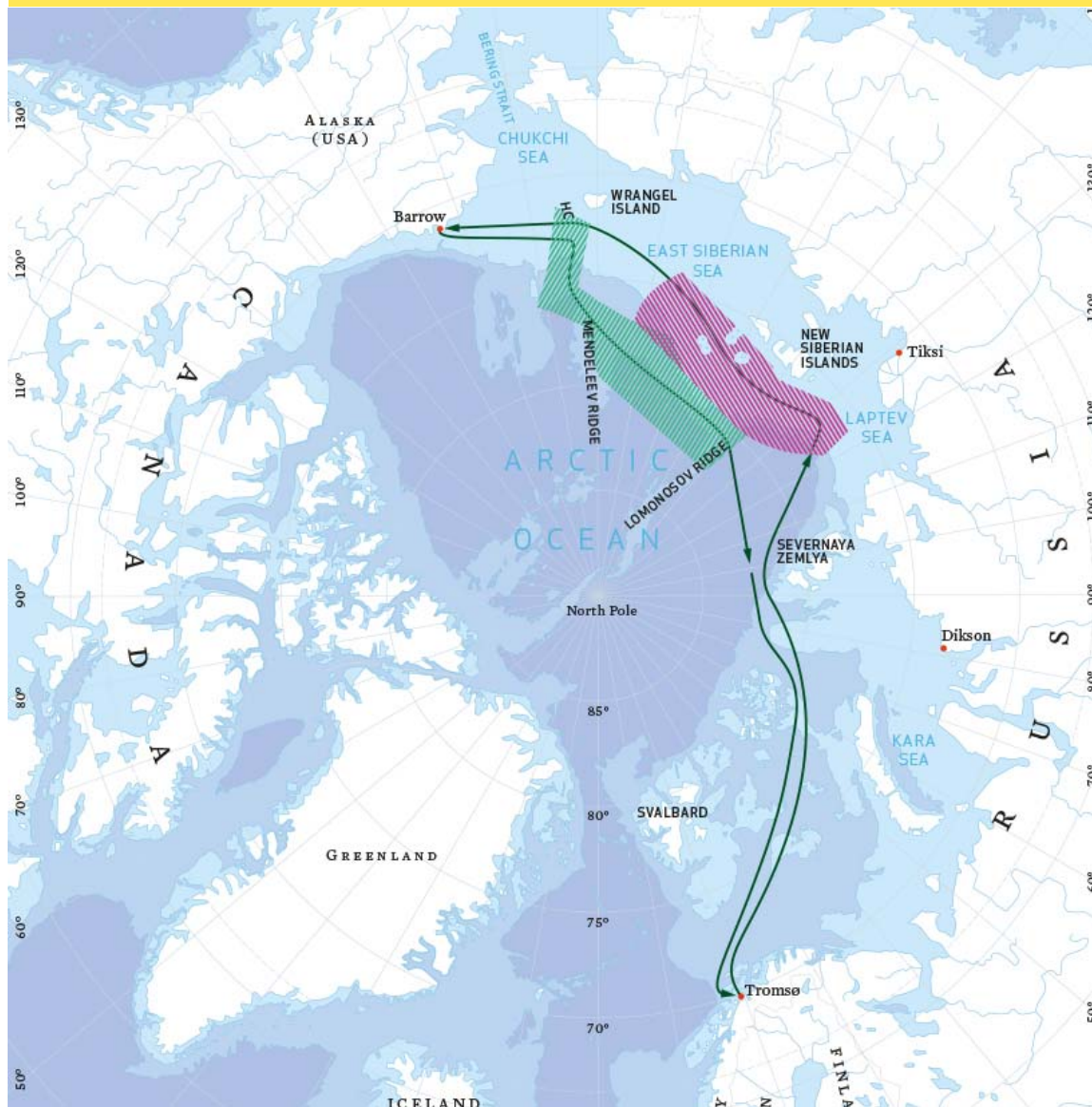
Björn Dahlbäck

FARO Helsinki 2014



SWERUS-C3

- » A Swedish/Russian/American research expedition
- » The Swedish icebreaker Oden
- » ~100 days: 6 July–4 October 2014
- » Investigating the interactions between cryosphere, carbon and climate (C3)
- » The northern stretches of the Laptev Sea, the East Siberian Sea and the Chukchi Sea



Expedition route

- » **6 July 2014:** Departure from Tromsø, Norway
- » **20 August 2014:** Change-over of researchers and crew in Barrow, Alaska
- » **4 October 2014:** Return to Tromsø, Norway

Researchers

SWERUS-C3 includes around 80 researchers from:

- » Stockholm University, Sweden
- » University of Gothenburg, Sweden
- » Russian Academy of Sciences (RAS), Russia
- » The International Arctic Research Center (IARC) at University of Alaska, United States
- » Rice University, United States

Research

Interactions between the thawing cryosphere, the carbon system and the climate system in the East Siberian Arctic Ocean.

- » Methane release from subsea permafrost and deep sea
- » The fate of carbon in the shelf sea released from thawing subsea and coastal permafrost
- » The historical (recent/post-glacial/paleoclimate) sediment record of permafrost carbon releases
- » The history of Arctic sea ice and its impact on carbon fluxes

Leg 1: From permafrost thawing to the venting of greenhouse gases

- » 6 July–20 August 2014:
Tromsø, Norway–Barrow, Alaska
- » **Chief scientists:** Örjan Gustafsson (Stockholm University) and Igor Semiletov (POI, FEBRAS, IARC)
- » The researchers will study the processes, sources and fluxes of methane in the East Siberian shelf seas, how they function today, and how it may evolve in the future.



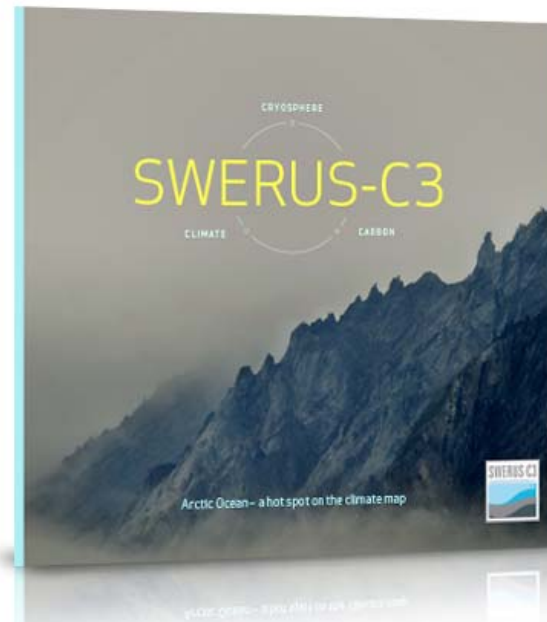
Leg 2: From warming seawater and shrinking sea ice to venting of greenhouse gases

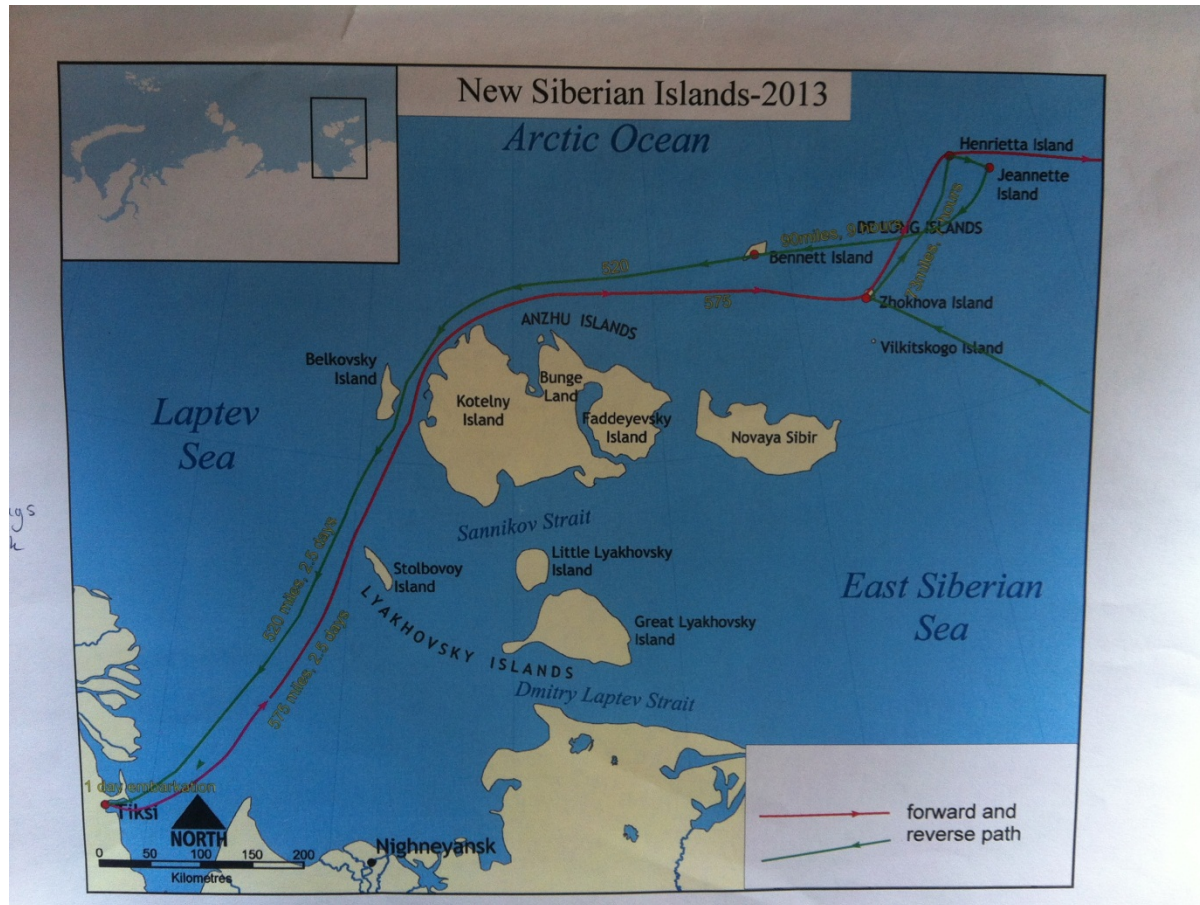
- » 20 August–4 October: Barrow, Alaska–Tromsø, Norway
- » **Chief scientists:** Martin Jakobsson (Stockholm University) and Oleg Dudarev (POI, FEBRAS)
- » The researchers will study the history of the Arctic sea ice, the inflow of relatively warm Atlantic water, and the conversion and transport of carbon from the East Siberian shelf seas to the deep seas och the Arctic Ocean.
- » Both legs: the role of the Arctic clouds in the climate system.



More information about SWERUS-C3

- » www.polar.se
- » www.su.se
- » swerus-c3.geo.su.se





A succesful expedition in 2013 to DeLong Islands

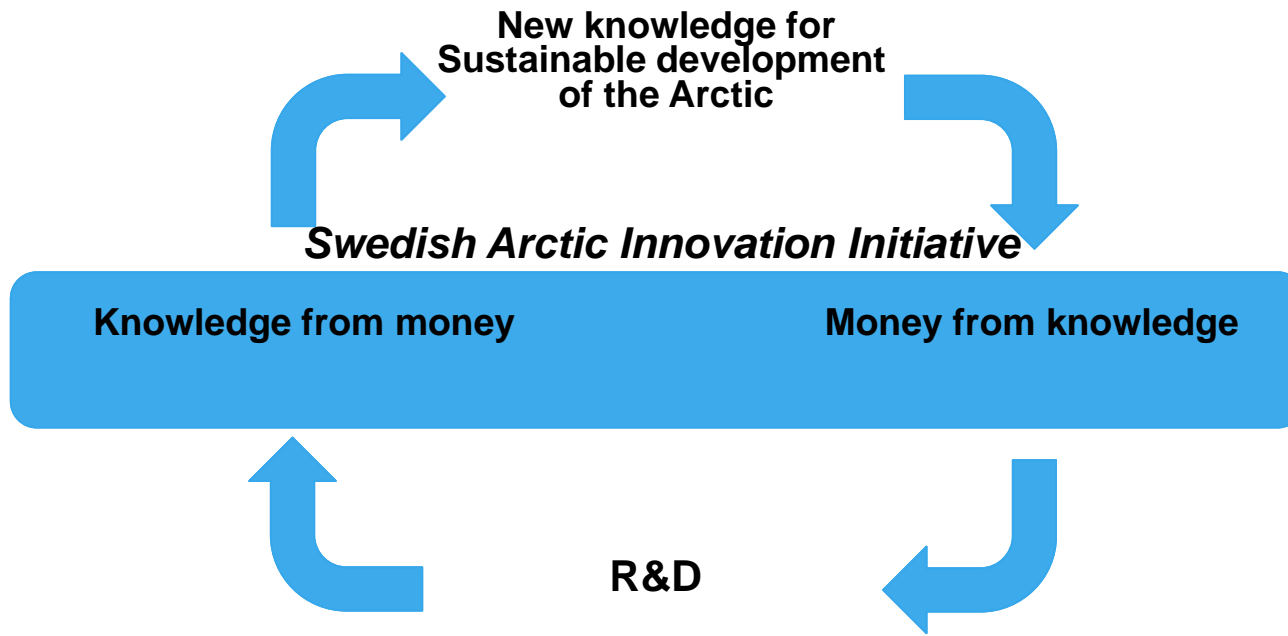


Abisko Research Station

200 km N of Arctic Circle
at tree line 68°N

- » 5055 guest days 2013 (+18%)
- » Environmental monitoring (since 1913)
- » ICOS - Integrated Carbon Observation System
- » INTERACT – Pan-Arctic infrastructure network

SAII – Swedish Arctic Innovation Initiative



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