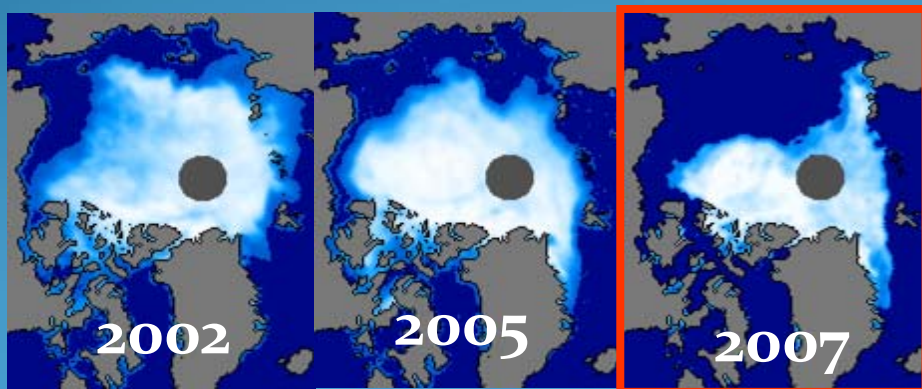
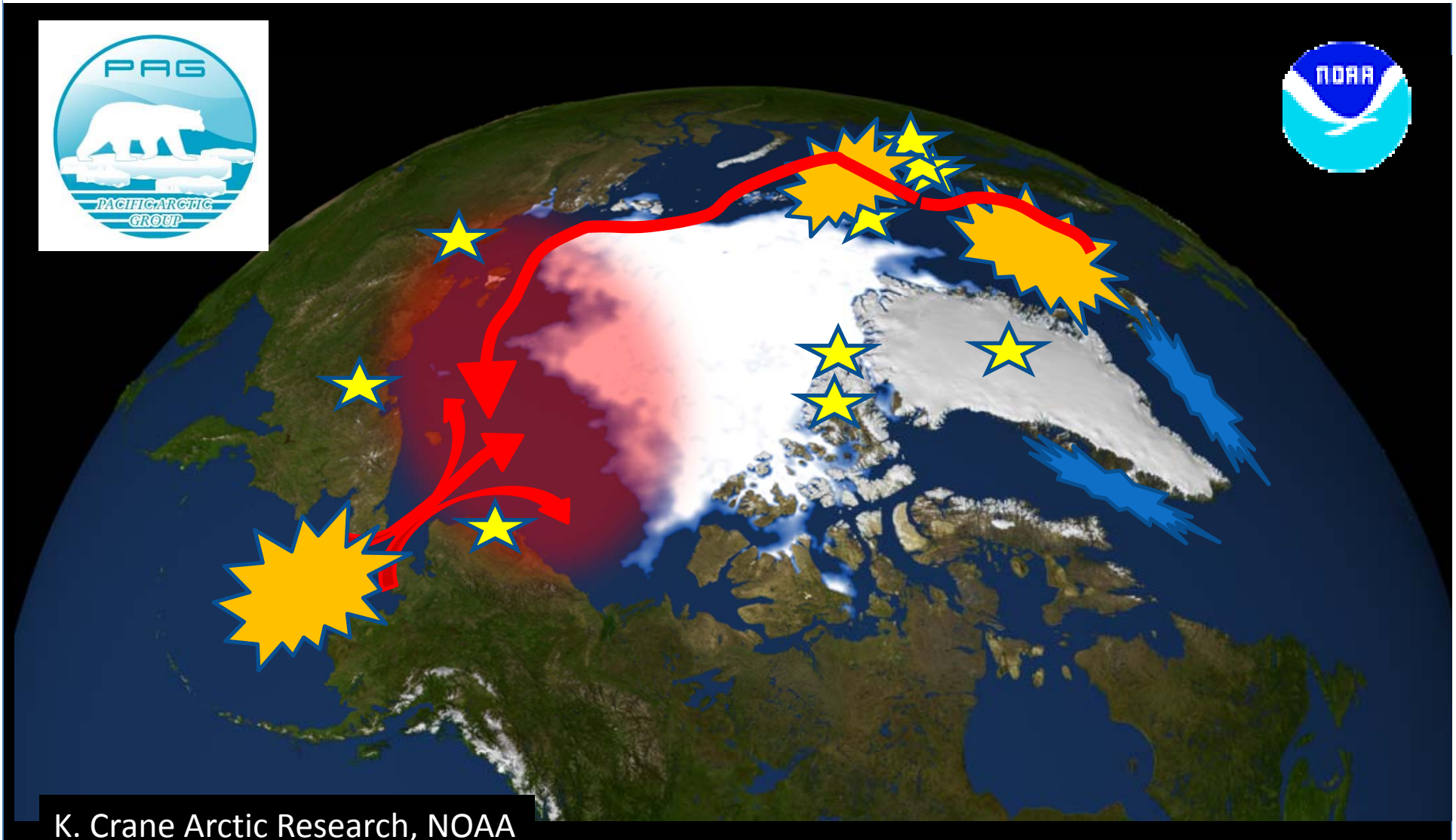


NOAA's Interest in developing a Pacific Arctic Climate Observing Network

Kathleen Crane
Arctic Research Program,
NOAA



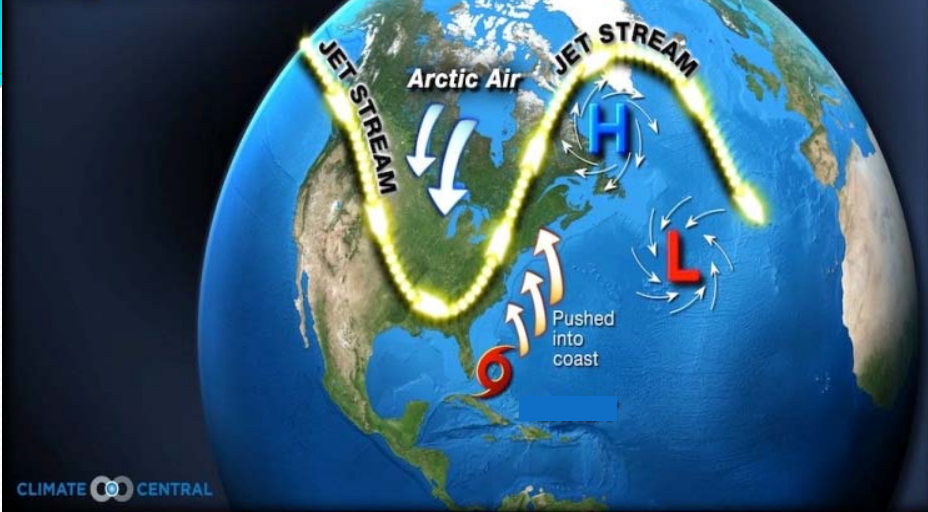
ARCTIC SYSTEM CHANGE DETECTION AND IMPACTS: A 5 Year Plan to Address Causes and Consequences of Sea Ice Loss, Warming Atmosphere, and Changing Ecosystems



K. Crane Arctic Research, NOAA

Sandy Pinned & Pushed West

Makings of a "Frankenstorm"



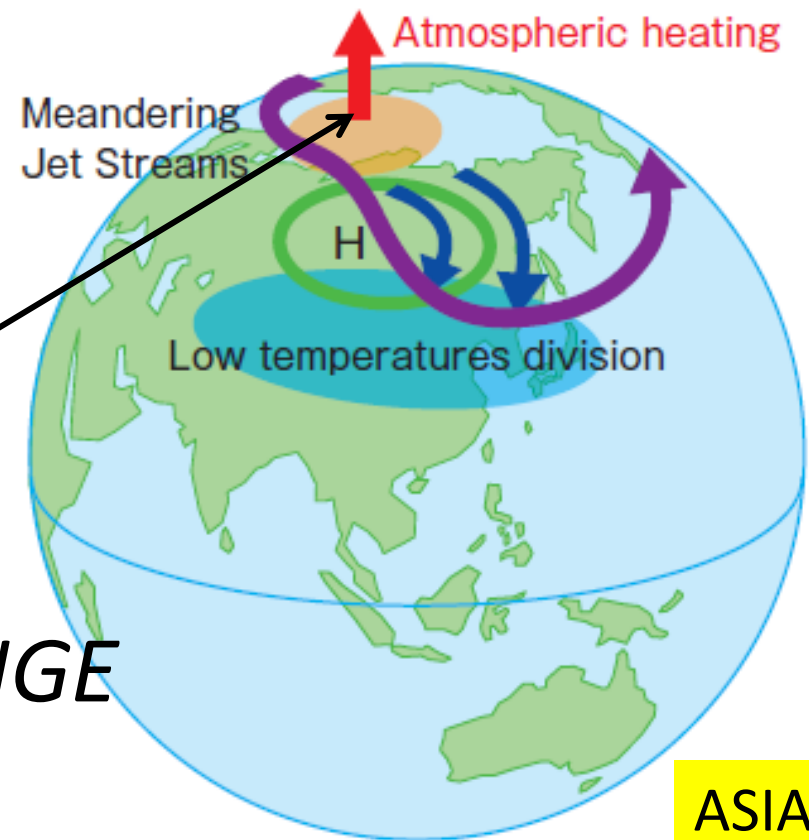
NORTH AMERICA

NEED OBSERVATIONS FROM THE PACIFIC ARCTIC HOT SPOT

IMPACTS OF ARCTIC CHANGE ON THE MID-LATITUDES

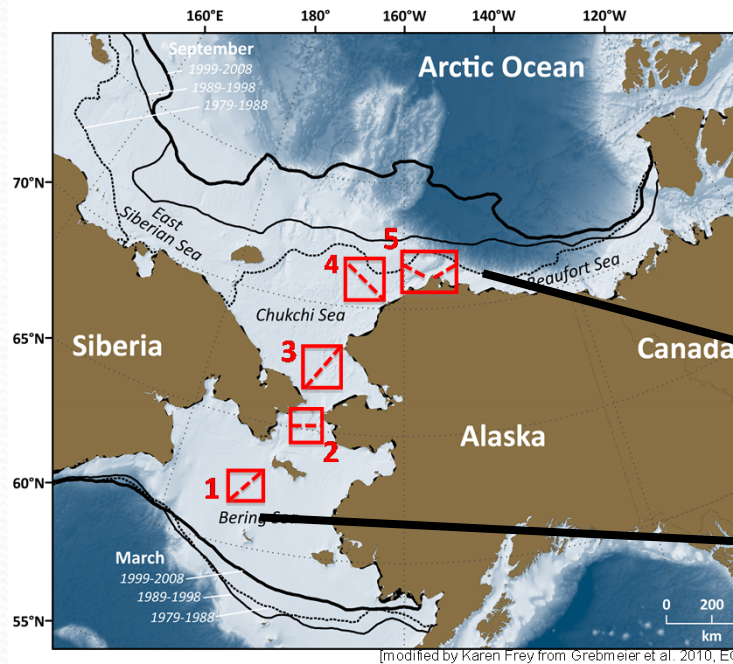
Which parts of the Globe are responding to Arctic Change

The impacts of Arctic changes on weather and climate in Japan

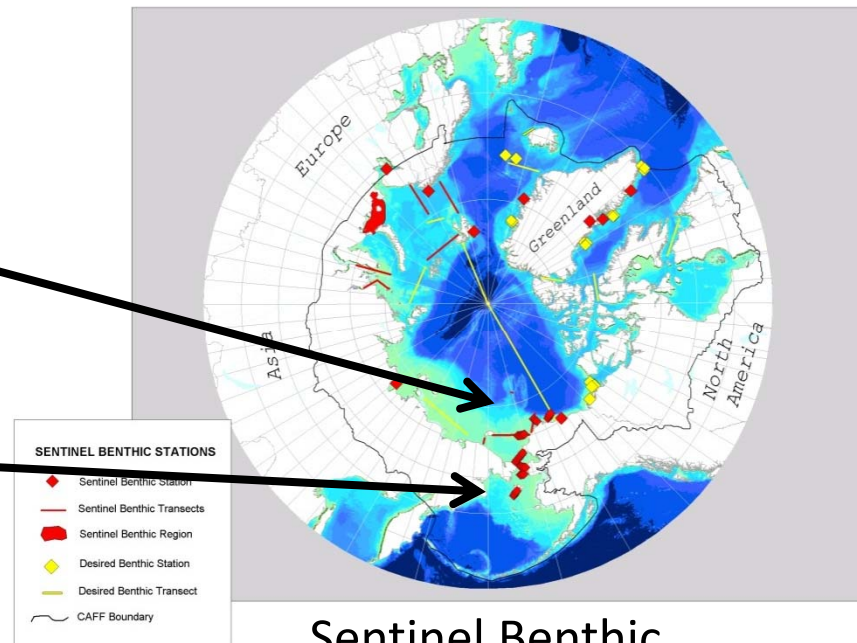


ASIA

Relationship Between Pacific Arctic Stations and Arctic Council Marine Monitoring Plan



Sentinel Benthic Regions, Stations and Transects

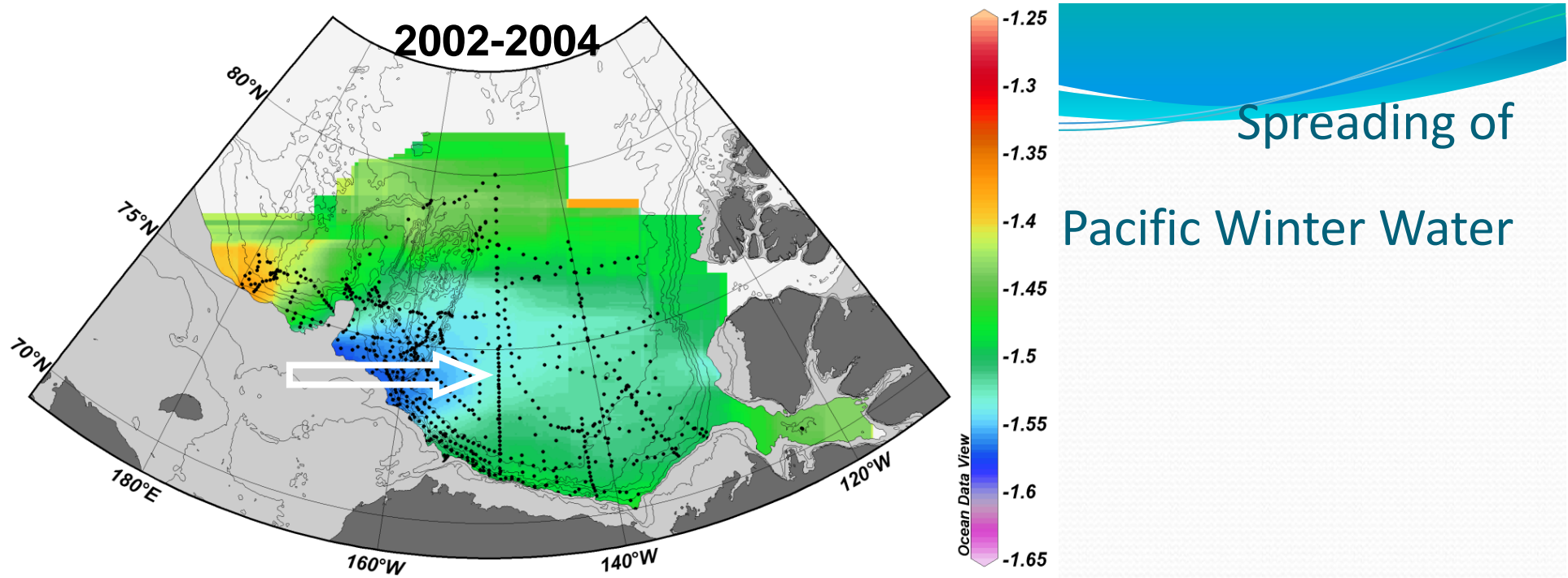


Sentinel Benthic Stations (Arctic Council)

The current Distributed Biological Observatory: Linking Physics and Biology under conditions of sea ice loss.

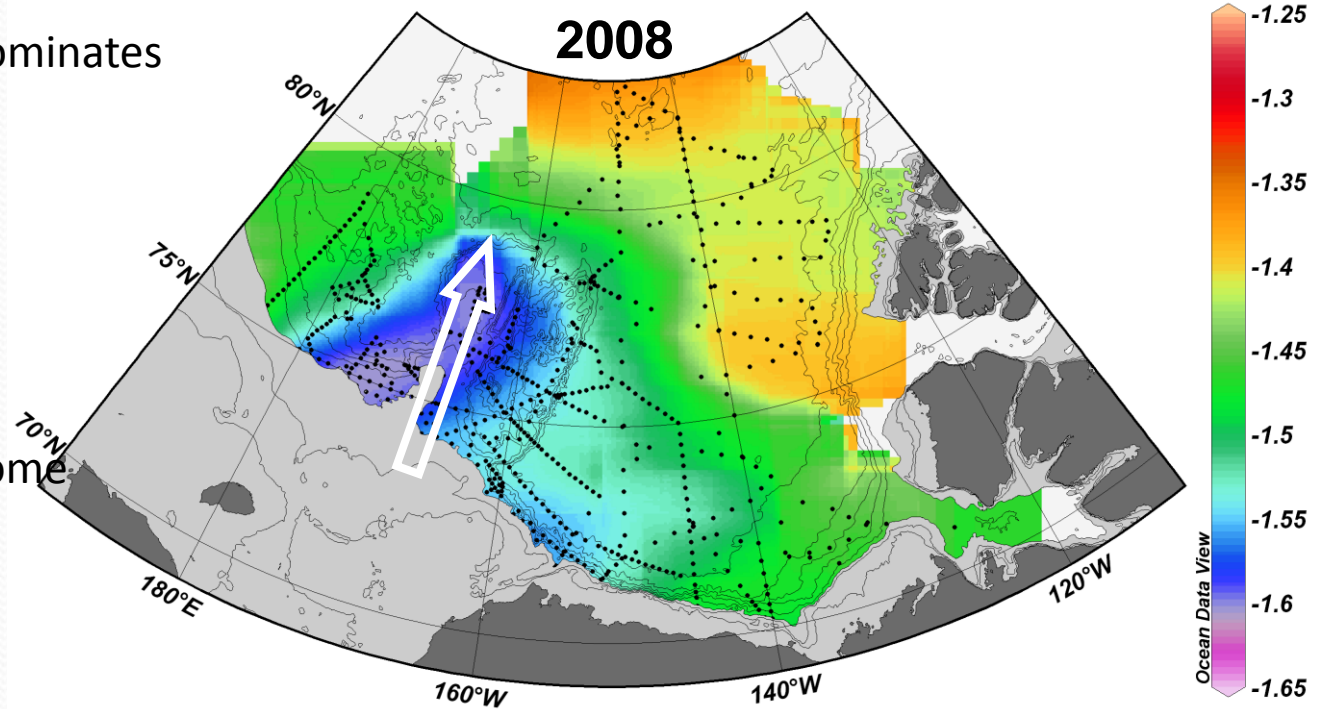
Increase ability to monitor and assess environmental conditions under changing climate scenarios through **new collaborations and partnerships**



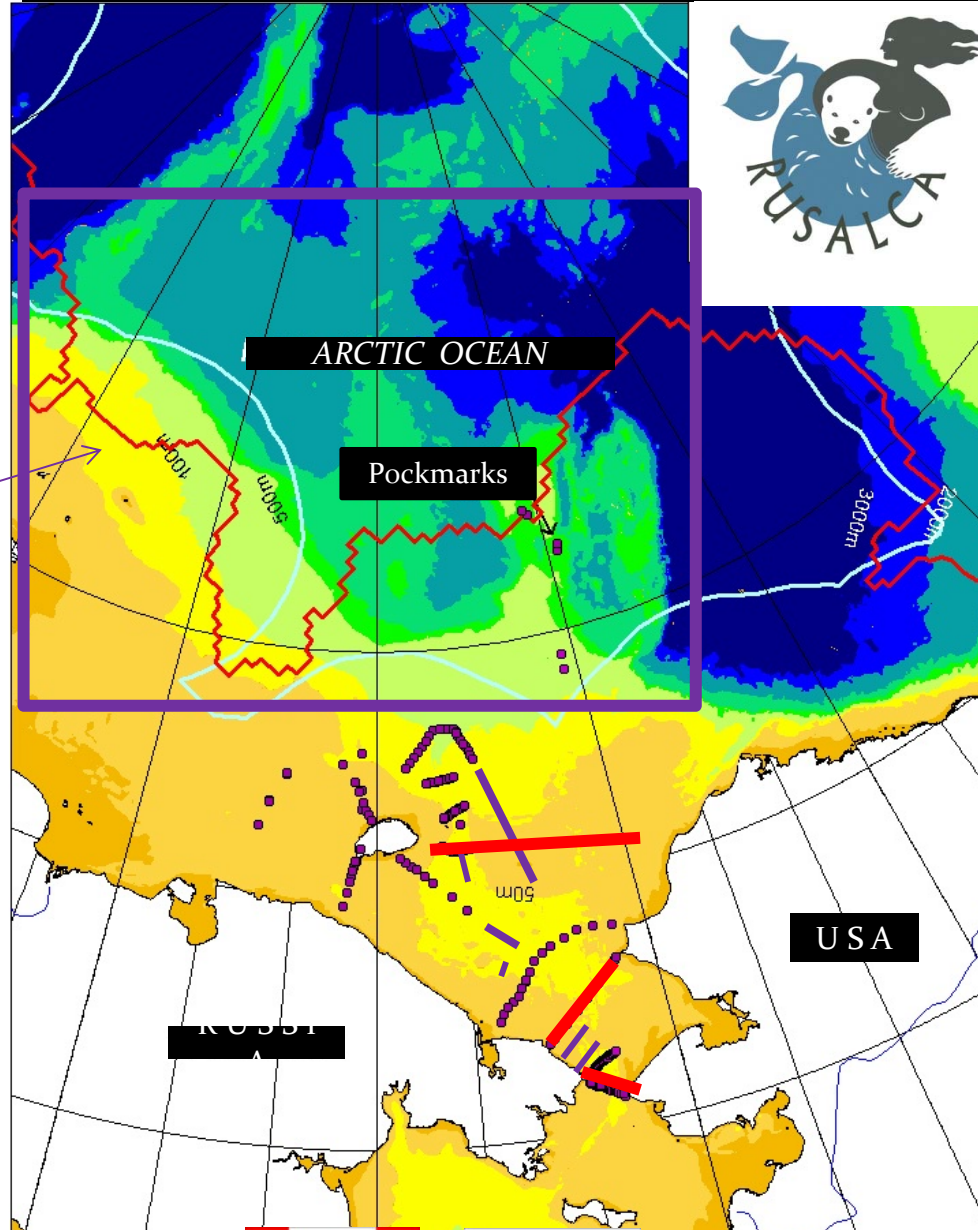


buoyancy driven currents dominates

Wind driven currents overcome buoyancy driven currents



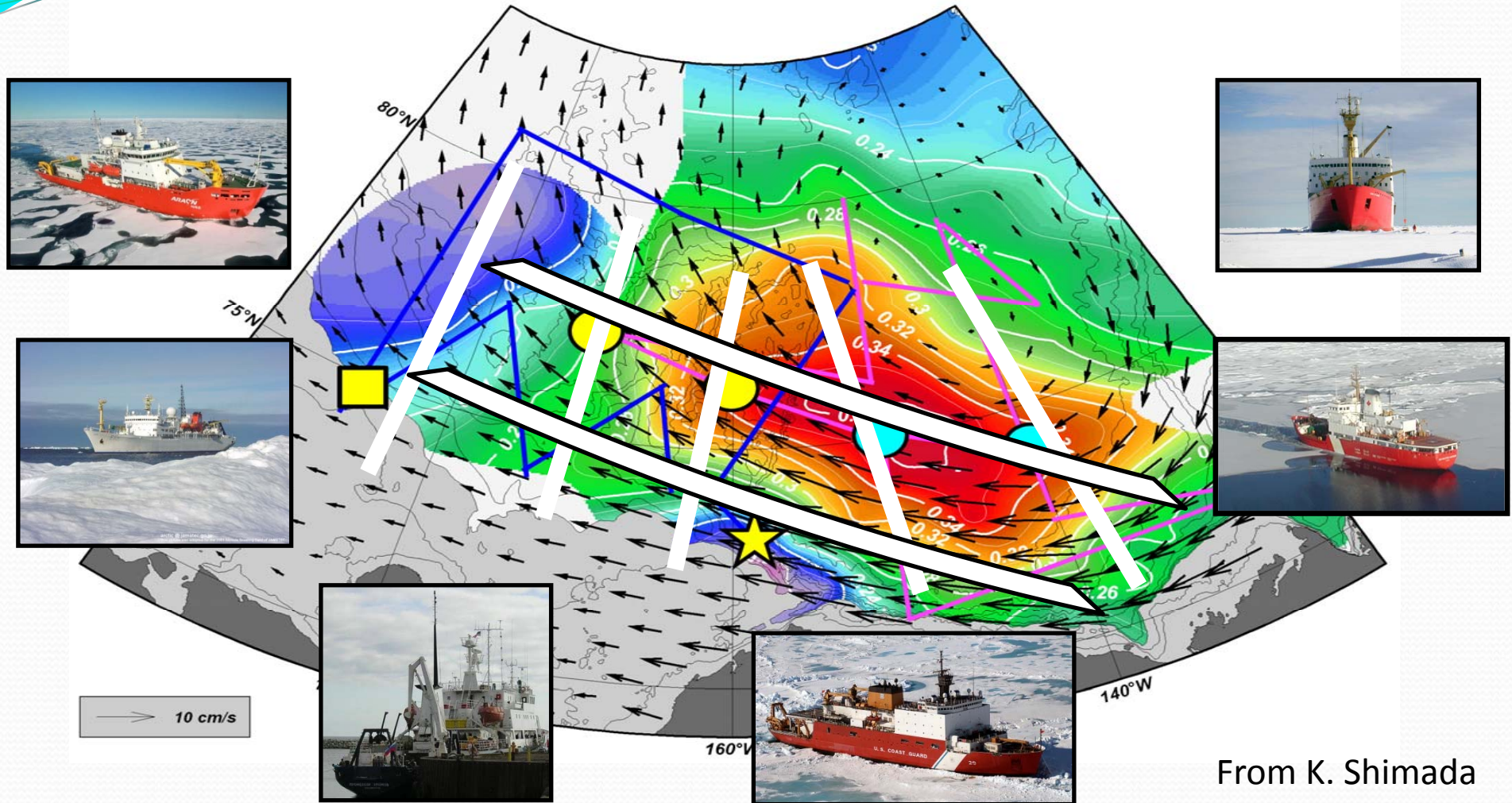
RUSALCA 2ND DECADE



RUSALCA-PAG
Proposed survey
area 2015-2020



Proposed international Pacific Arctic climate observing sections

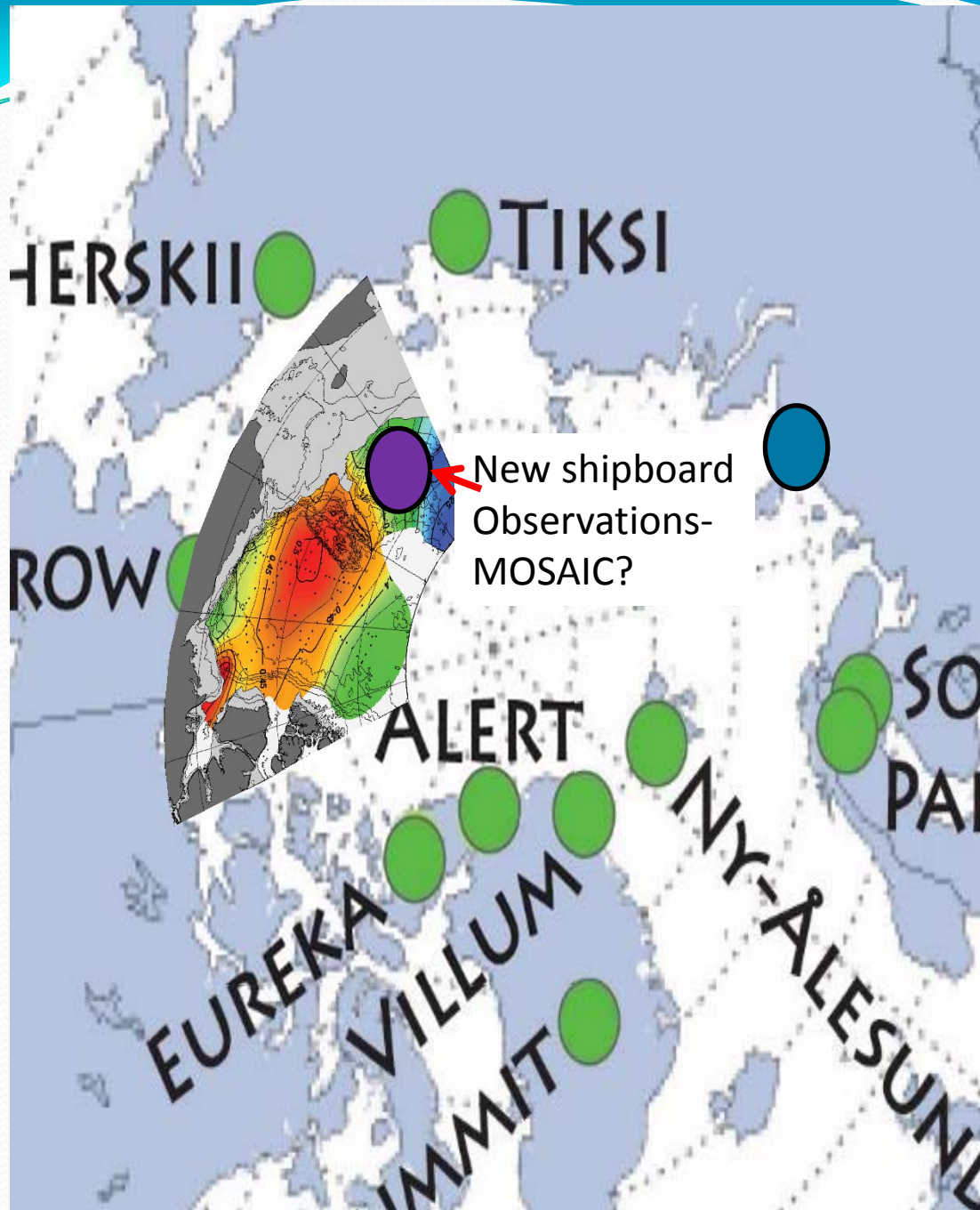


From K. Shimada

Background color: dynamic height at 100dbar relative to 800dbar from Mirai and Louis S. St-Laurent 2008 cruises (Oceanic Beaufort Gyre)

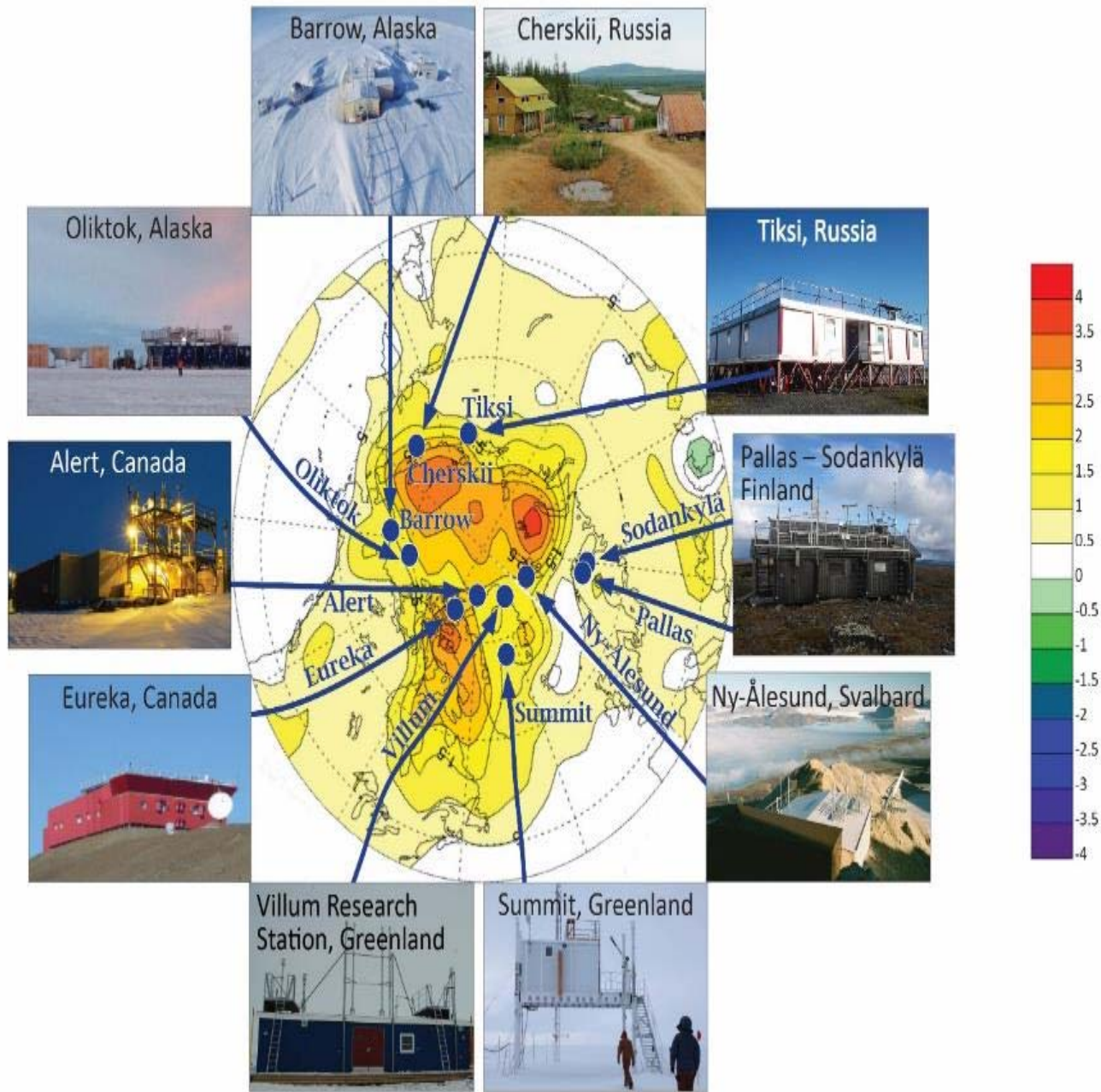
Black vectors: average sea ice motion vectors for Nov. 2007- Apr. 2008 (Sea Ice Beaufort Gyre)

Symbols: Mooring array in 2012-2013 (TUMSAT/KOPRI/NIPR & WHOI)



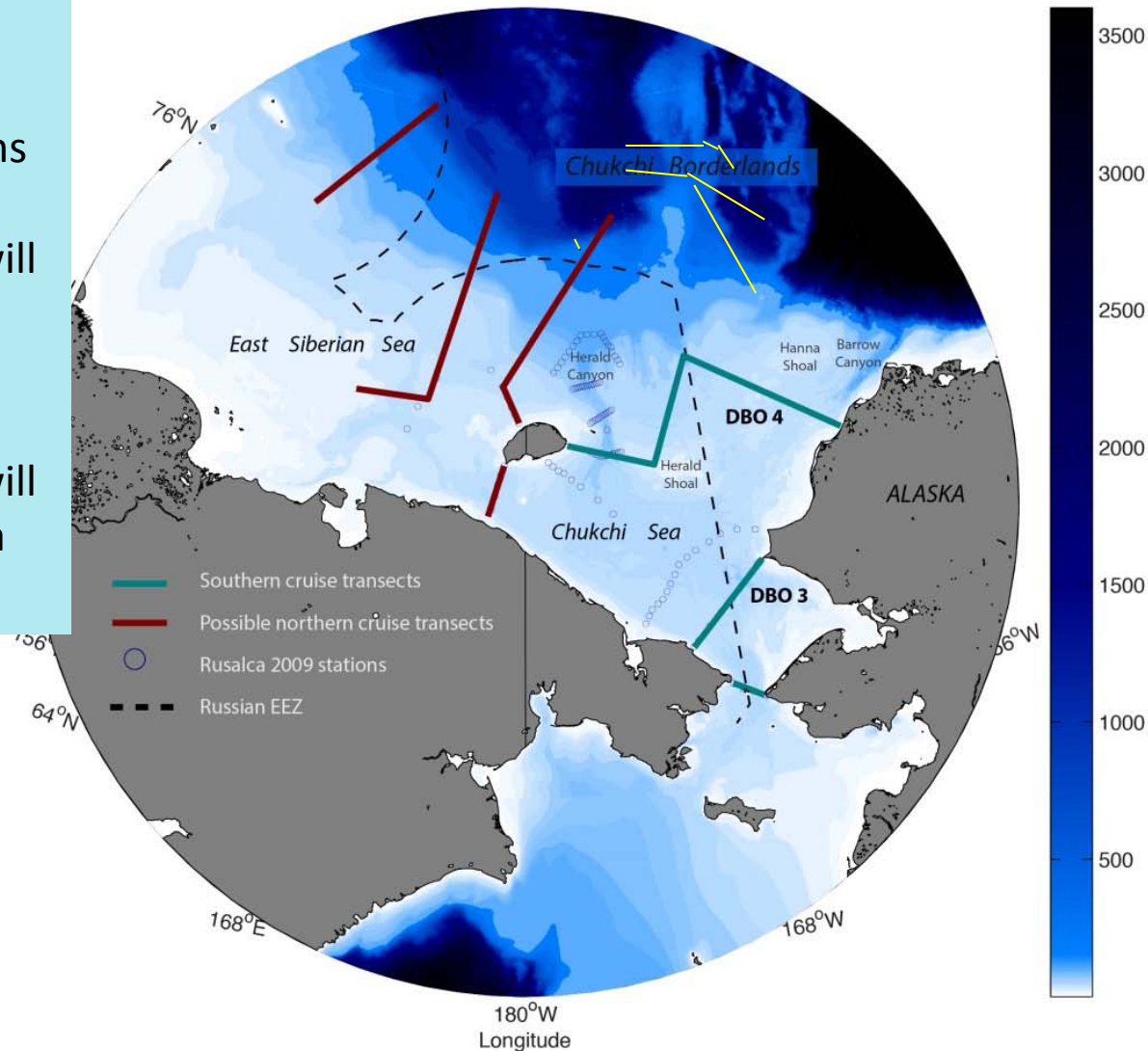
ATMOSPHERIC OBSERVATIONS

- International Arctic System or Observing the Atmosphere
- Linkages between Atmospheric Observatories and new atmospheric measurements with PAG



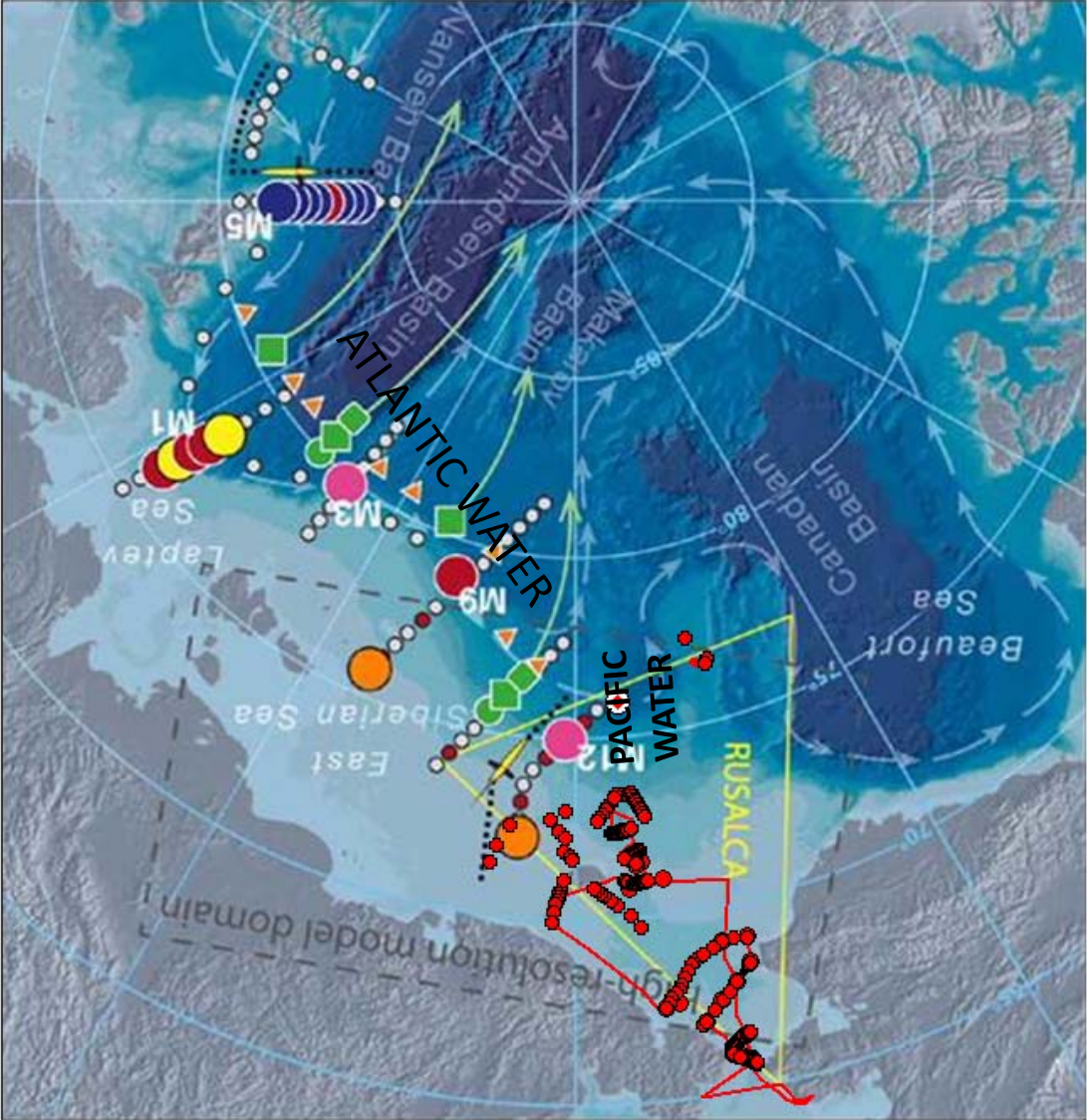
RUSALCA Proposed New Lines

- Oceanographic transects and critical Ecosystem observations
- In 2015 RUSALCA will cover DBO3 and the Bering Strait Line
- In 2016 RUSALCA will cover B.S, DBO3 and a New DBO4 line

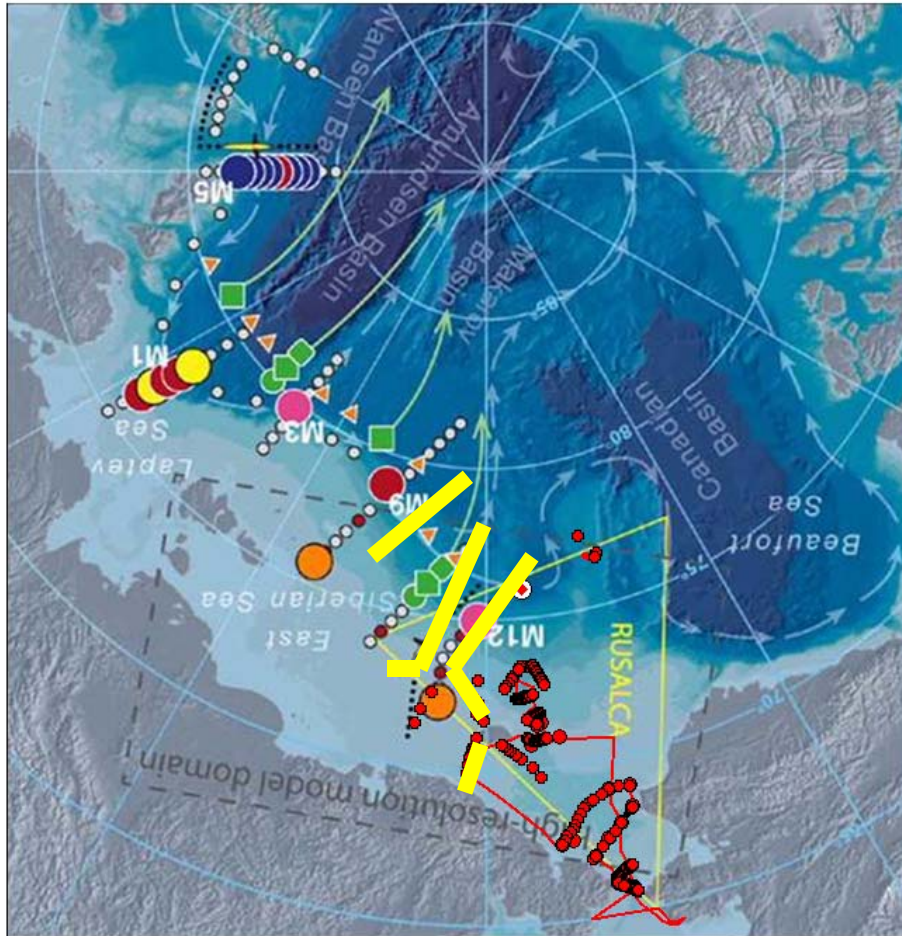


NEW NABOS AND RUSALCA LINKAGES

NSF, NOAA
Roshydromet
funding

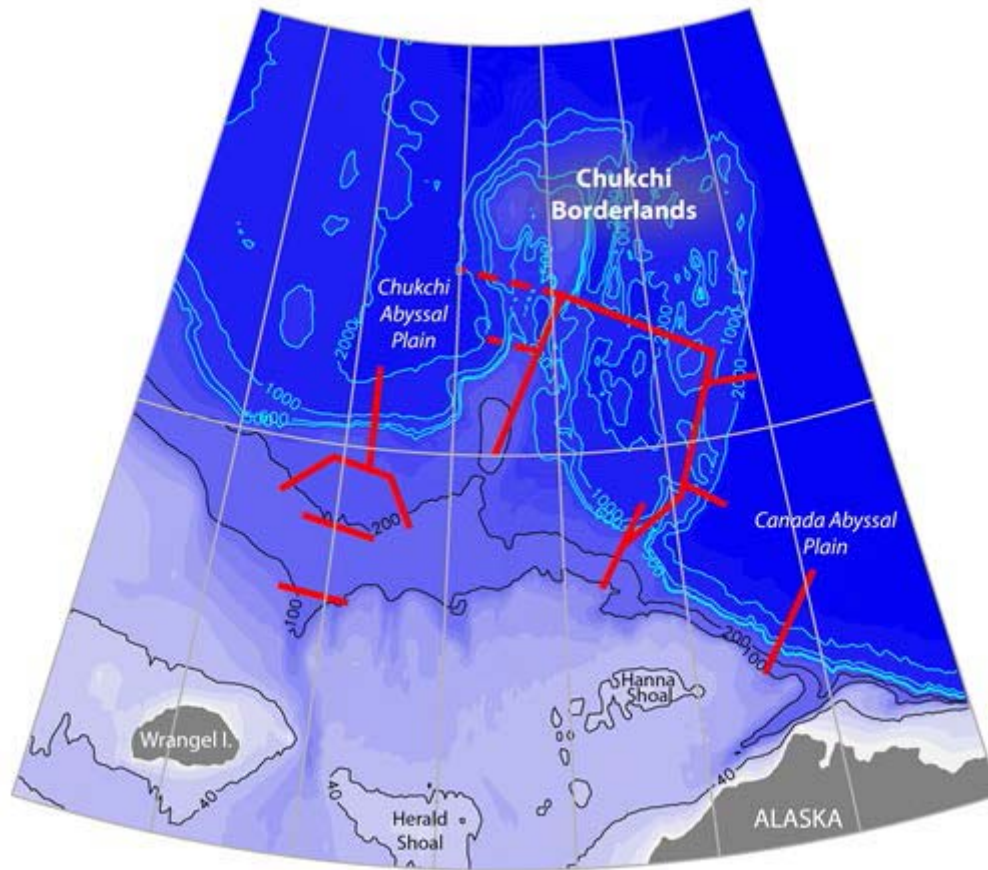


NABOS, RUSALCA, PLUS NEW TRANSECTS



- NOAA proposes to anchor the PAG Climate Observing Network on the Western side of the proposed observing area
- USA-Russian Federation funded biophysical expedition in 2015 and 2017.
- Will serve as a platform for YOPP

Possible NOAA-PMEL- Ocean Exploration proposed Transects- 2016

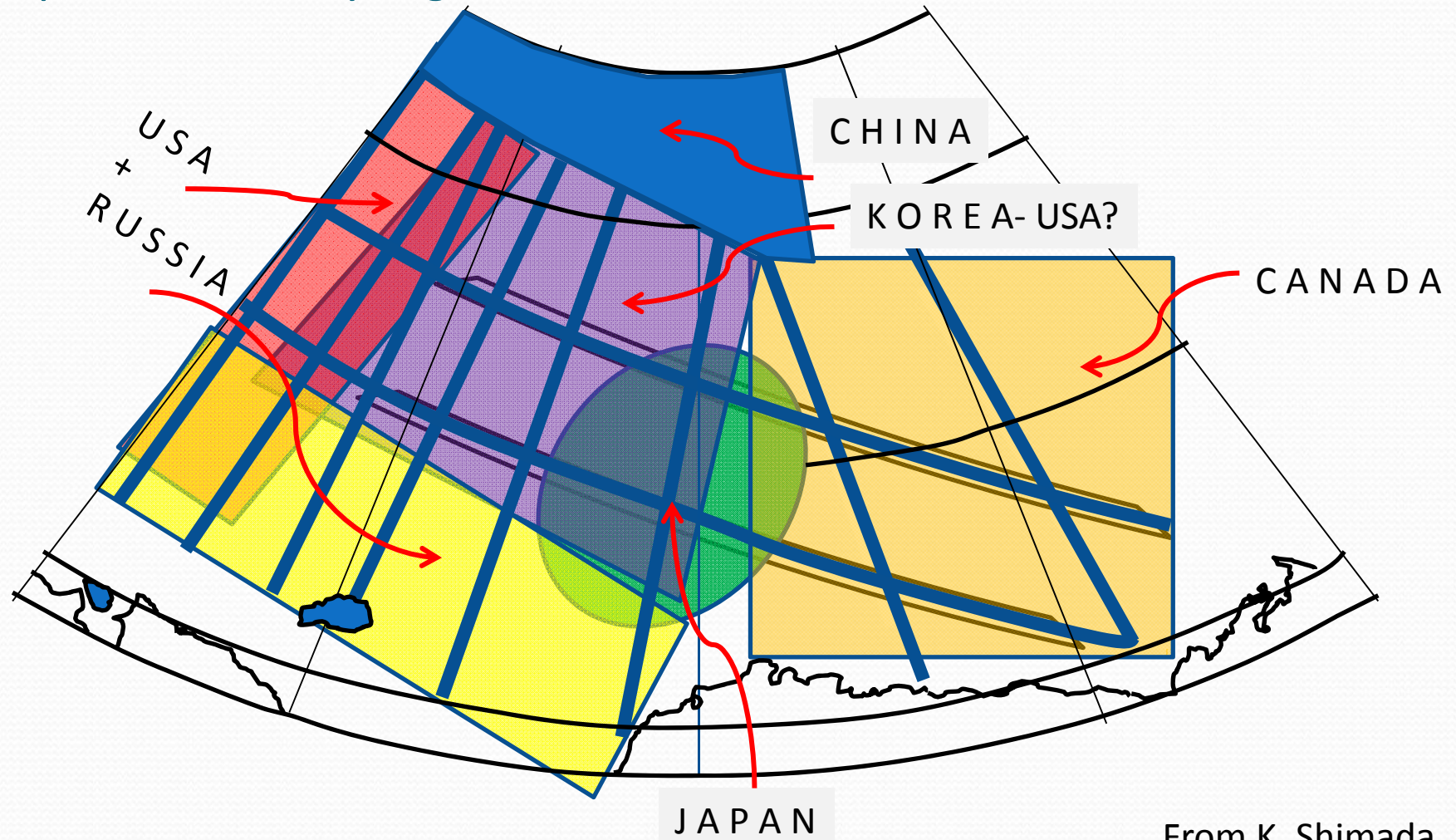


2016- NOAA Ocean Exploration
Will take biophysical Observations
Over the Chukchi Borderlands

May invite participation from other
PAG countries.

Cost 3 Million \$

Possible international Pacific Arctic climate observing domain:
possible survey regions : To Discuss



PACIFIC ARCTIC DATA

**Sustaining Arctic
Observing
Network (SAON)**

The SAON *vision* is that users should *have access to free, open & high quality data that will realize pan-Arctic & global value-added services & provide societal benefits.*

To attain that vision, SAON's *goal* is to enhance Arctic-wide observing activities by facilitating partnerships & synergies among existing 'building blocks', & promoting sharing & synthesis of data & information.

Co-Funded-BUDGET

- Synoptic survey of the region where Atlantic and Pacific waters mix.
- Vessels from PAG, RUSALCA, SWERUS, others?
- Shared scientist participation on RUSALCA and Ocean Exploration
- Coordinated sampling and observations
- DATA sharing operations
- TIME frame: two expeditions between 2015 and 2020.
- Need to link observations and data management with the Framework of Ocean Observations. (Framework of Arctic Observations?)