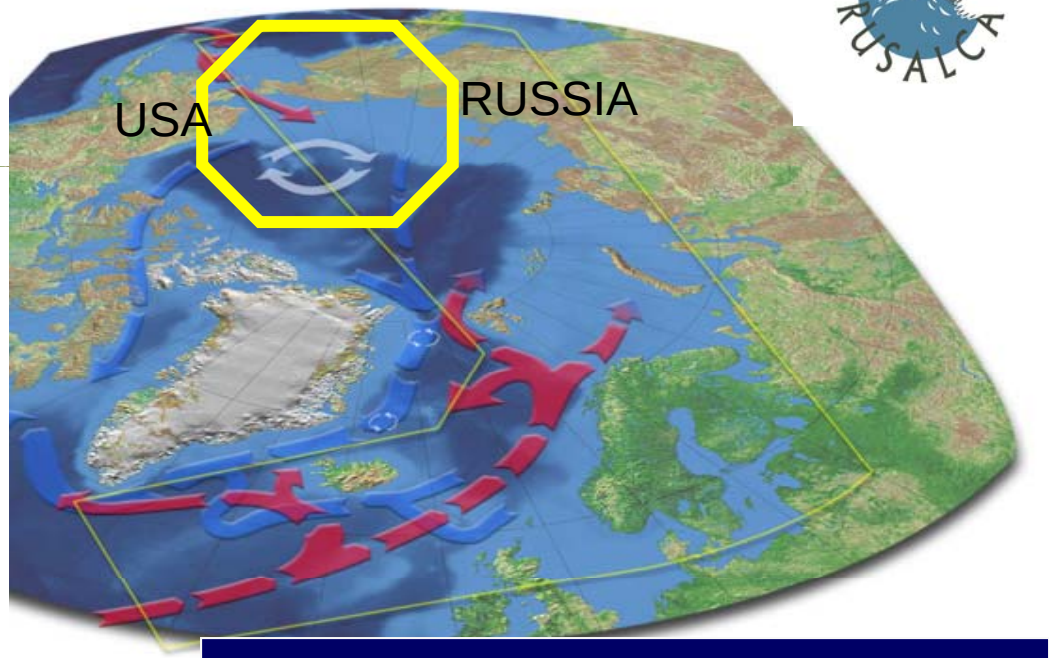
RUSALCA 2004-2012

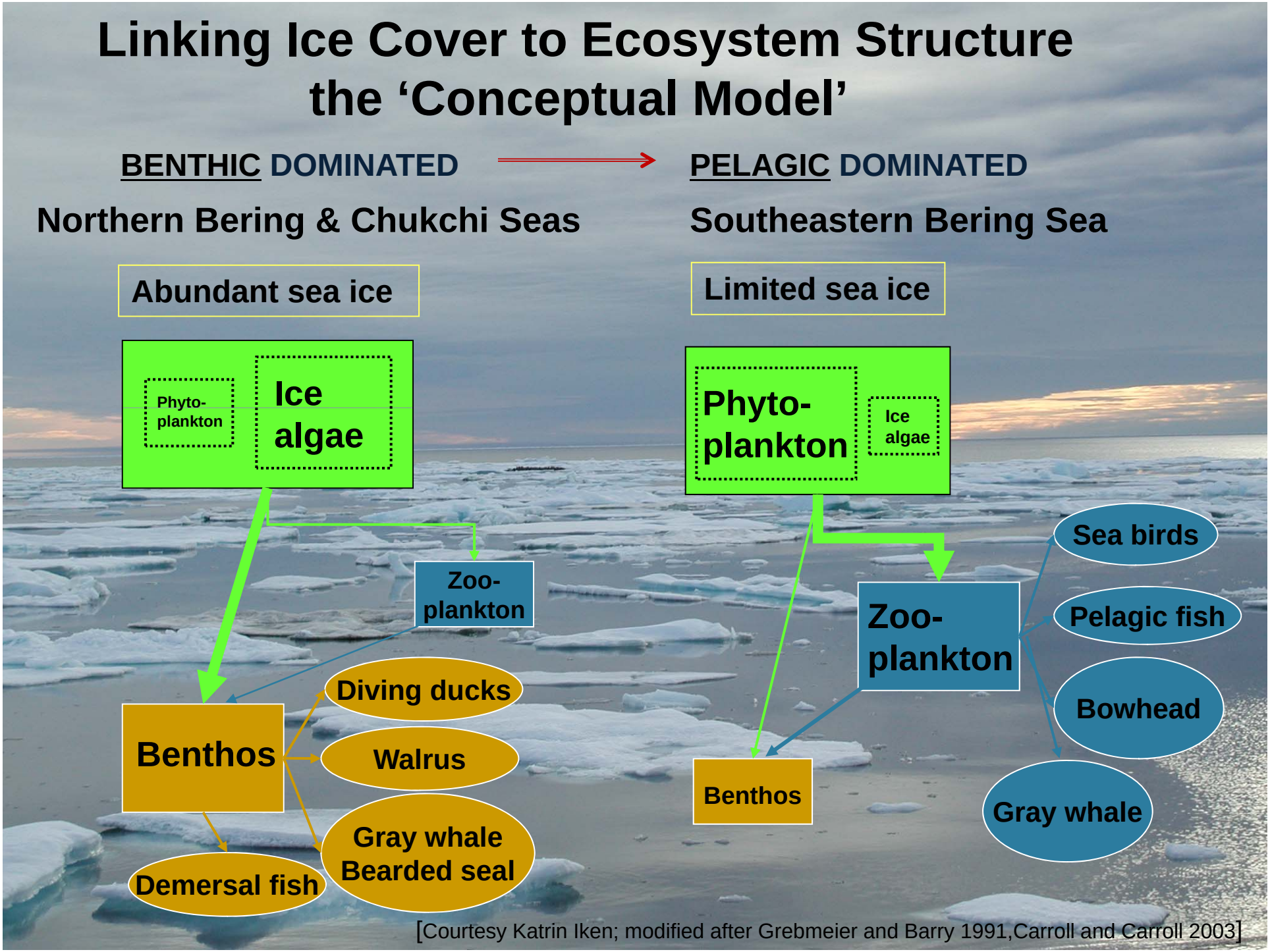
RUSALCA Goals:

- Observations where Arctic sea ice is reducing rapidly
- Bering St. fresh water, nutrient fluxes
- Regional physics and ecosystem response to change.
- Improve international Arctic science collaboration
- Explore the unknown Arctic
- Link with PAG vessels and programs



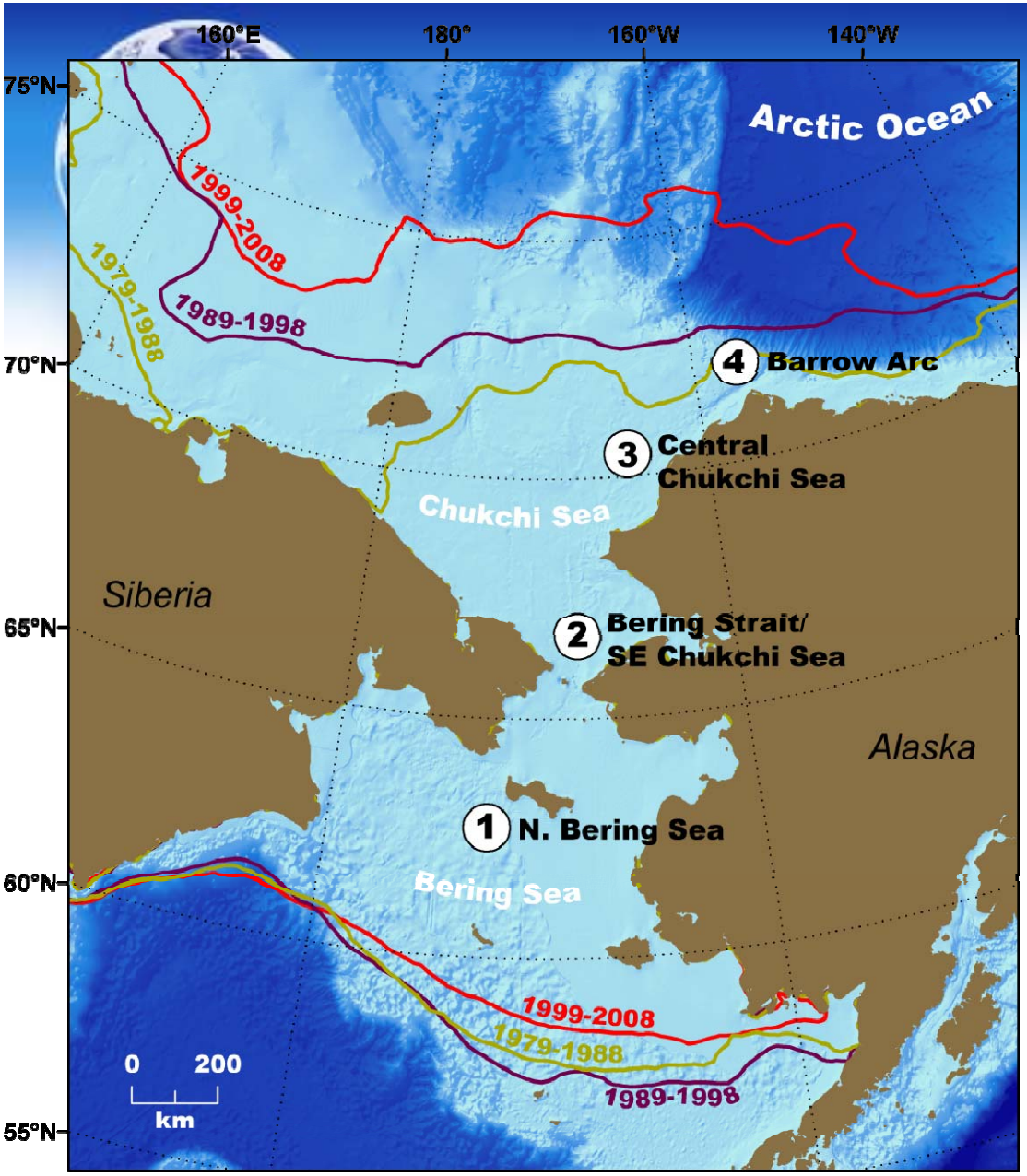
Russian American Long-term Census of the Arctic

Linking Ice Cover to Ecosystem Structure the 'Conceptual Model'



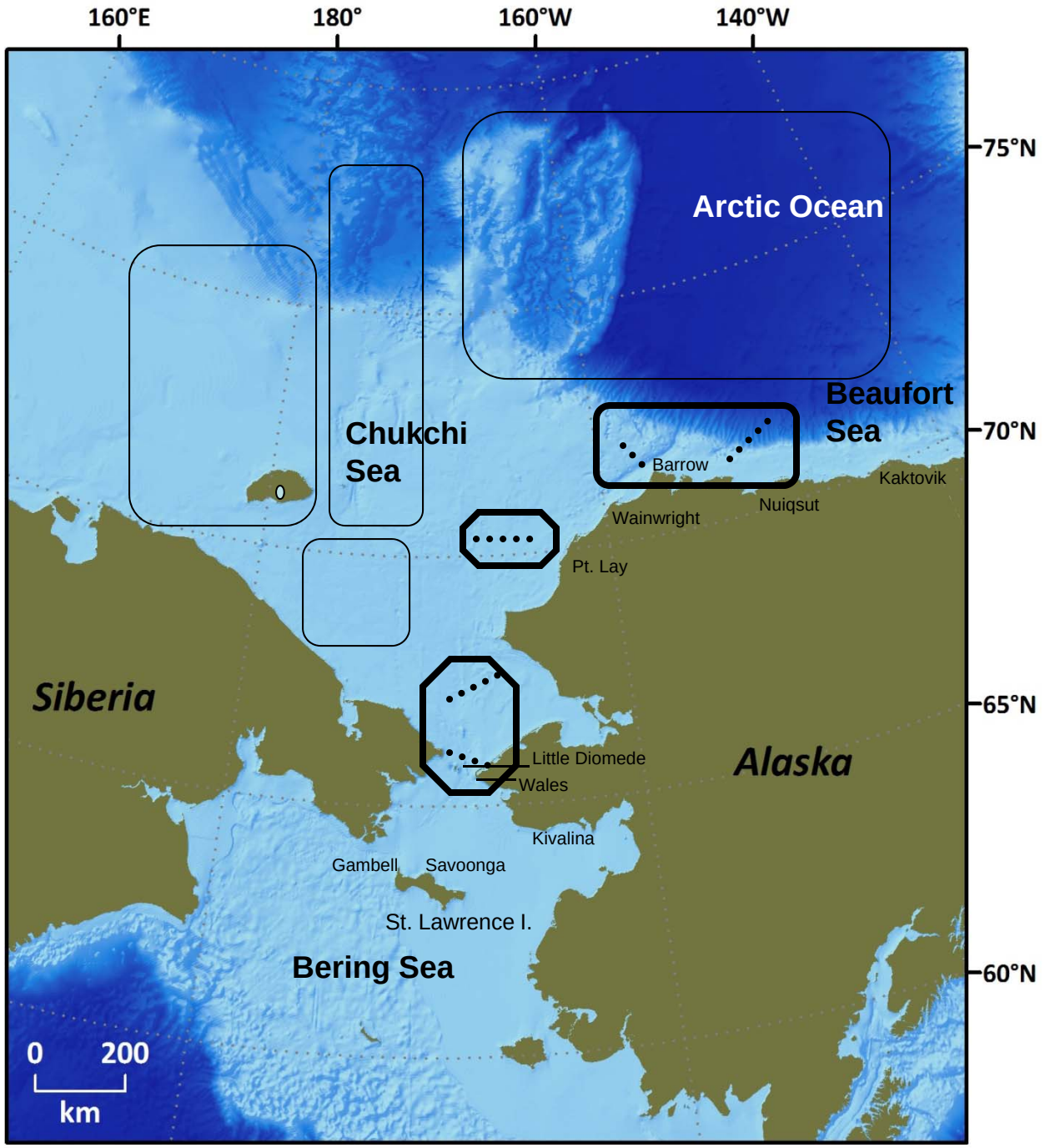
[Courtesy Katrin Iken; modified after Grebmeier and Barry 1991,Carroll and Carroll 2003]

Linking Physics & Biology: the Distributed Biological Observatory (DBOs) Concept



[map courtesy Karen Frey; further details see Grebmeier et al. 2010, EOS 91(18):161-162]

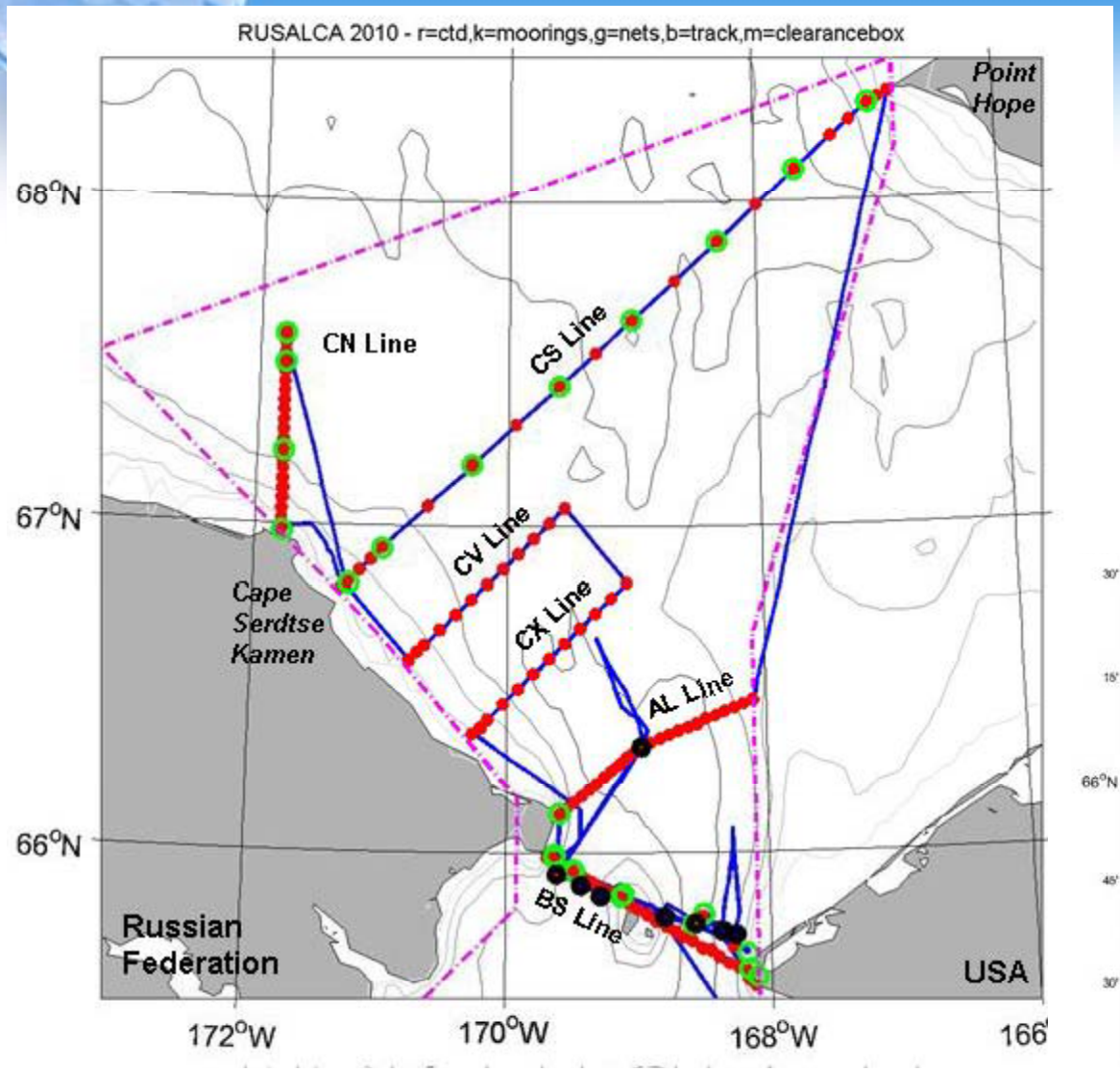
- **The DBO will focus on four regional "hotspot" locations along a latitudinal gradient**
- **DBO regions exhibit high productivity, biodiversity, and overall rates of change**
- **The DBO will serve as a *change detection array* for the identification and consistent monitoring of biophysical responses**



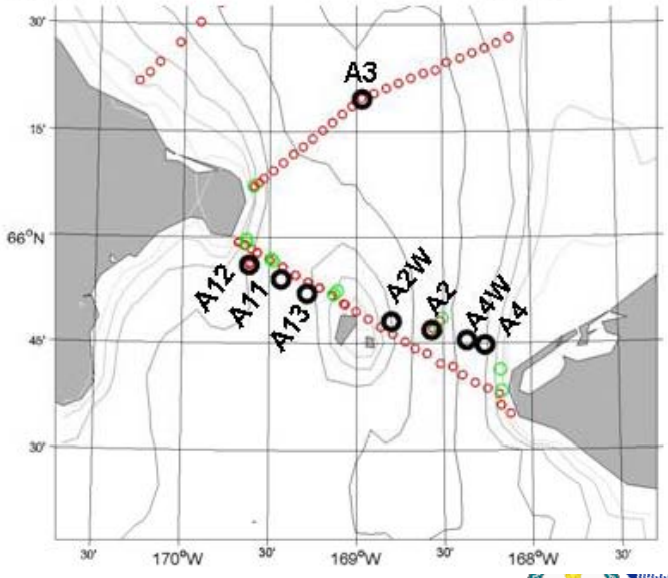
DBO (Including RUSALCA and other PAG observations)

RUSALCA 2010

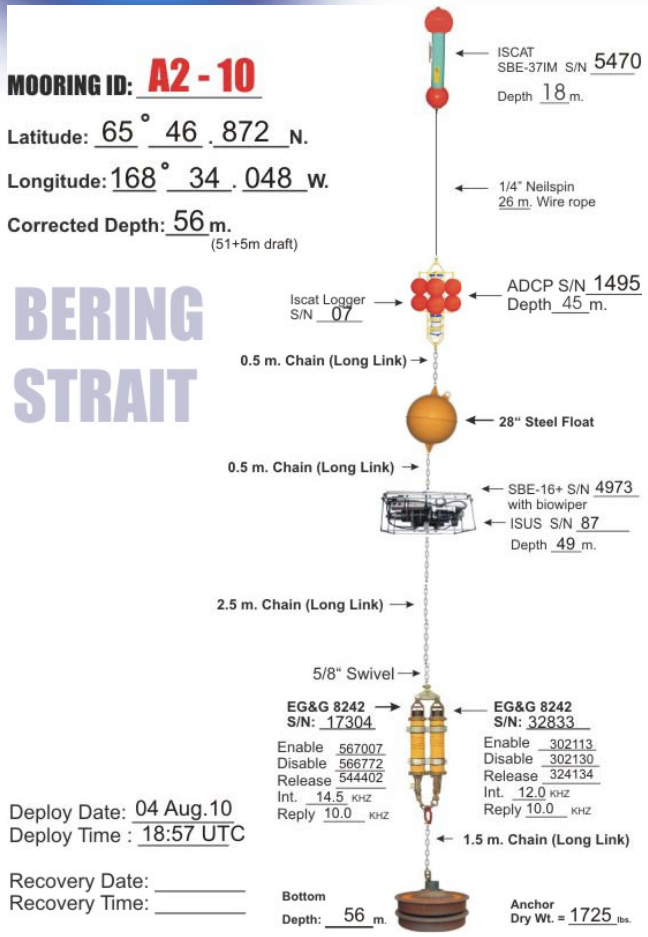
31st July – 11th Aug 2010
Nome to Nome

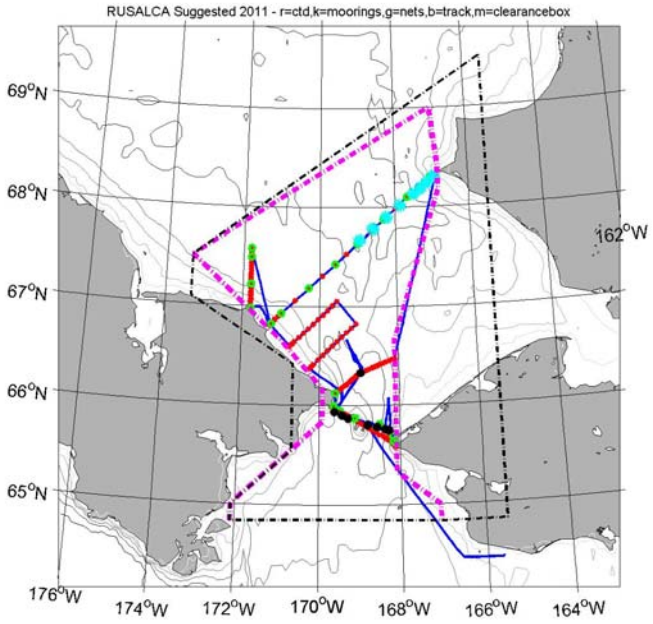


Mauve = clearance box
Blue = ship track
Black dots = moorings
Red dots = CTDS
Green dots = nets
+ 4 Primary productivity stations



RUSALCA 2011



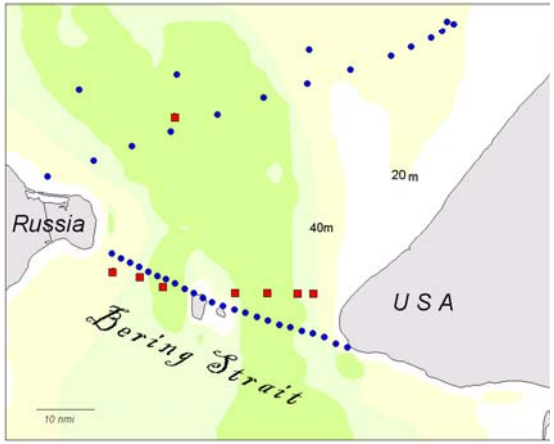


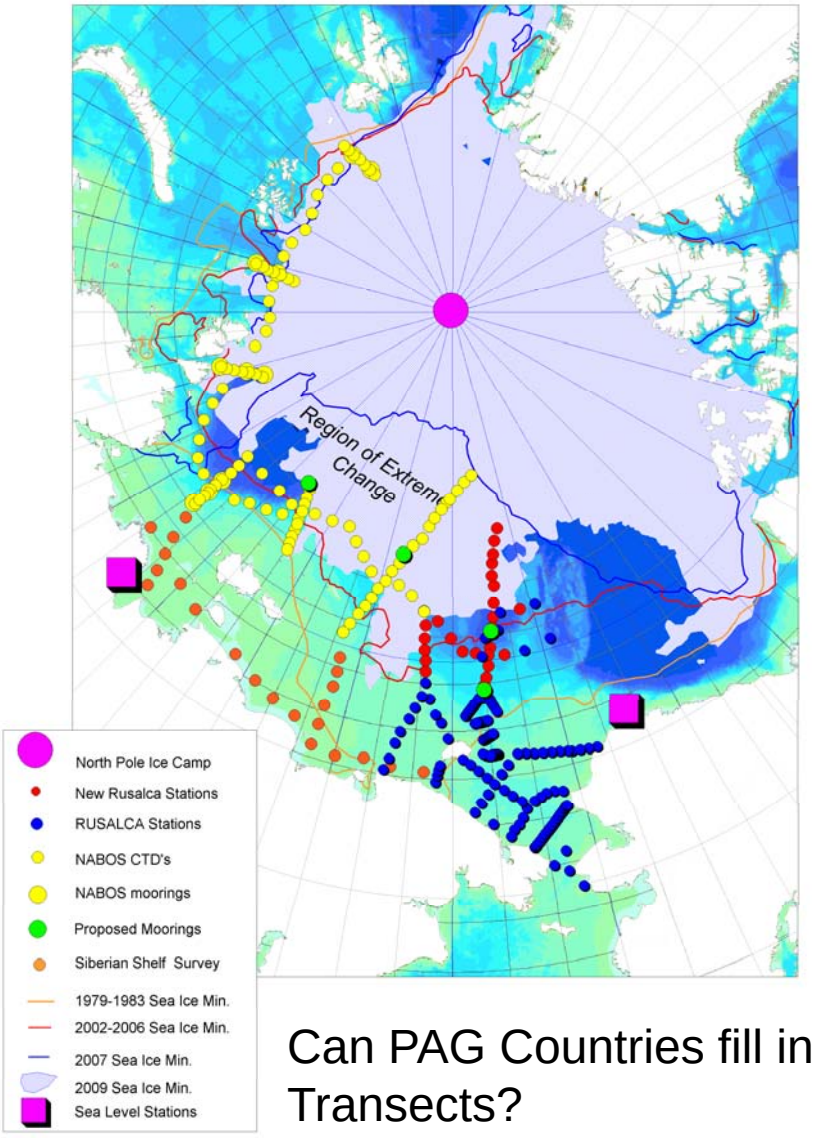
Operations:
Moorings, CTD's, Chlorophyll, Nutrients, Plankton, Marine Mammal Observations, Ocean Acidification

FUTURE PRIORITY : Causes and Consequences of Sea Ice Loss

Pacific and Atlantic Water Confluence And effects On Ecocystems

RUSALCA 2012 + PAG





Proposed 2012 Observations

Can PAG Countries fill in parts of these Transects?