NOAA'S Arctic Progam in 2017

NOAA's Arctic Mission

To determine how the Arctic system is changing on time scales of weeks to decades, particularly with respect to the consequences that the loss of sea ice may have on Arctic ecosystems, coastal management, economic development and northern hemisphere severe weather events.

NOAA Arctic Priority #1

Develop sustained Arctic observing and data management capabilities to improve coupled ocean-sea ice-atmosphere monitoring and modeling efforts in order to advance understanding of climate impacts on ecosystems and biological resources.

NOAA Arctic Priority #2

Enhance the scientific framework and capabilities forming the foundation for navigation services and spill response, to support increased ship traffic and commercial development across the Arctic Basin.
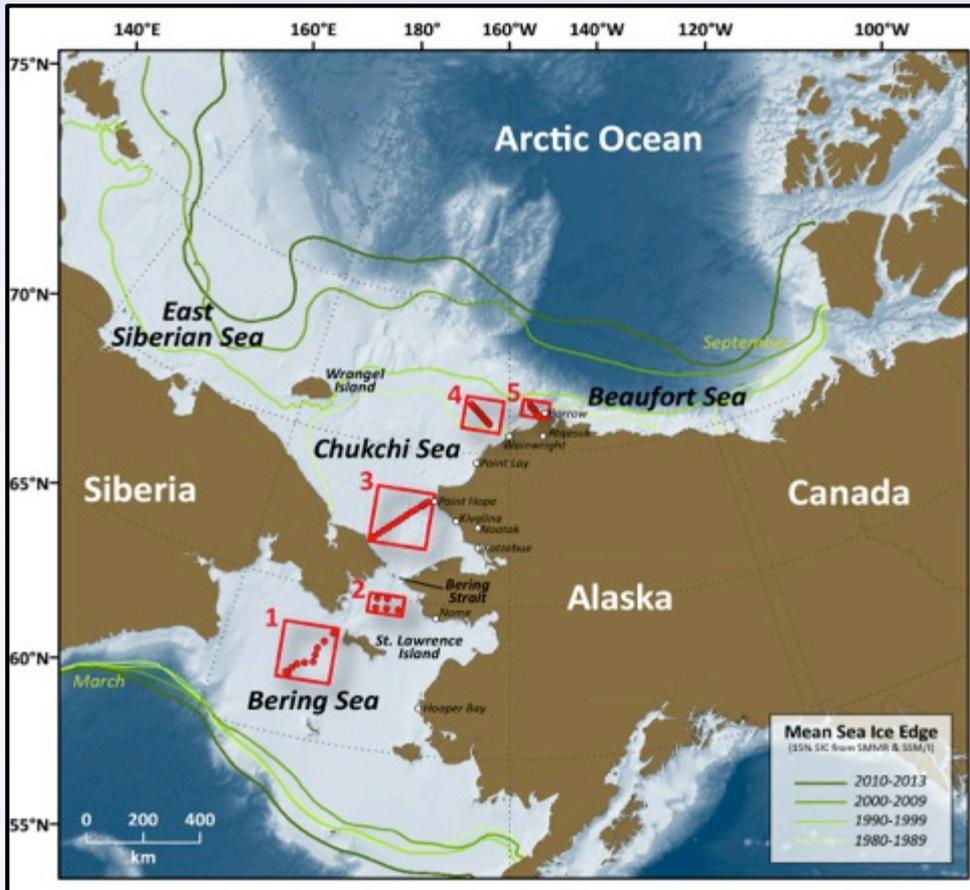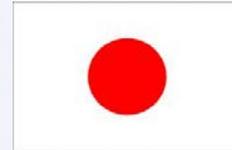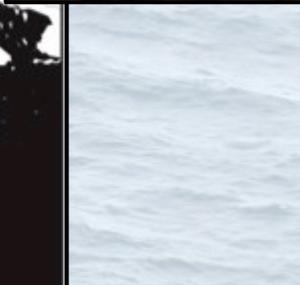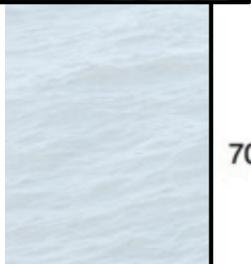
Arctic Research Program LOE 1
Distributed Biological Observatory (DBO)
http://www.arctic.noaa.gov/dbo

- **DBO regions are centered on "hotspots" located along a latitudinal gradient**

- **The DBO serves as a *change detection array*, via standardized sampling of biophysical processes**

- **Building *links* to coastal ecosystem health *via* Community Observations**
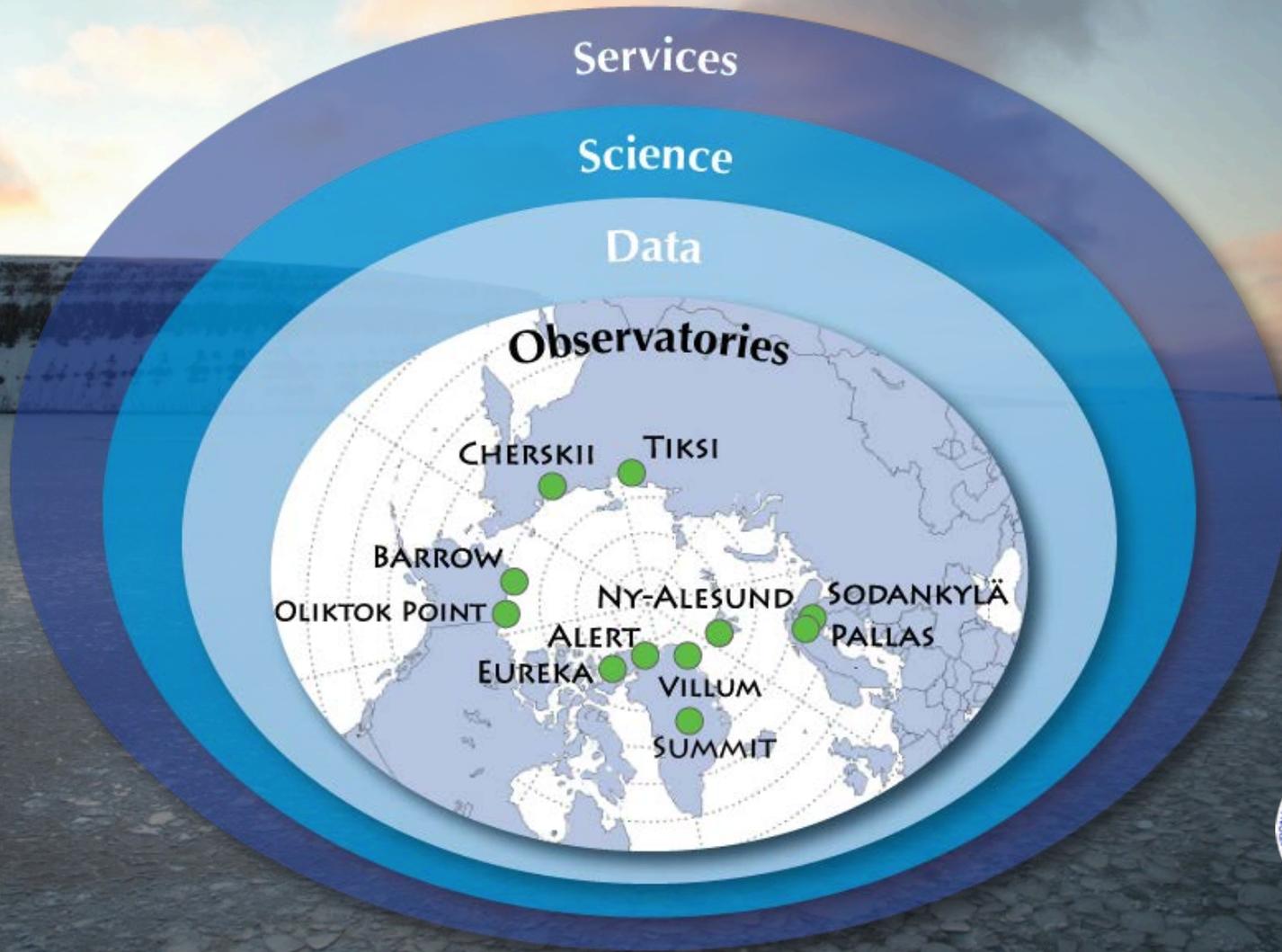
Herald
Canyon

Wrangel
Island

Chukchi
Sea

Herald
Shoal

Hanna
Shoal

DB04

DB05

Pt. Barrow

Cape Lisburne

DB03

Alaska

Siberia

★ DBO stations
★ Shelf Survey stations

70°N

175°W   170°W   165°W   160°W   155°W
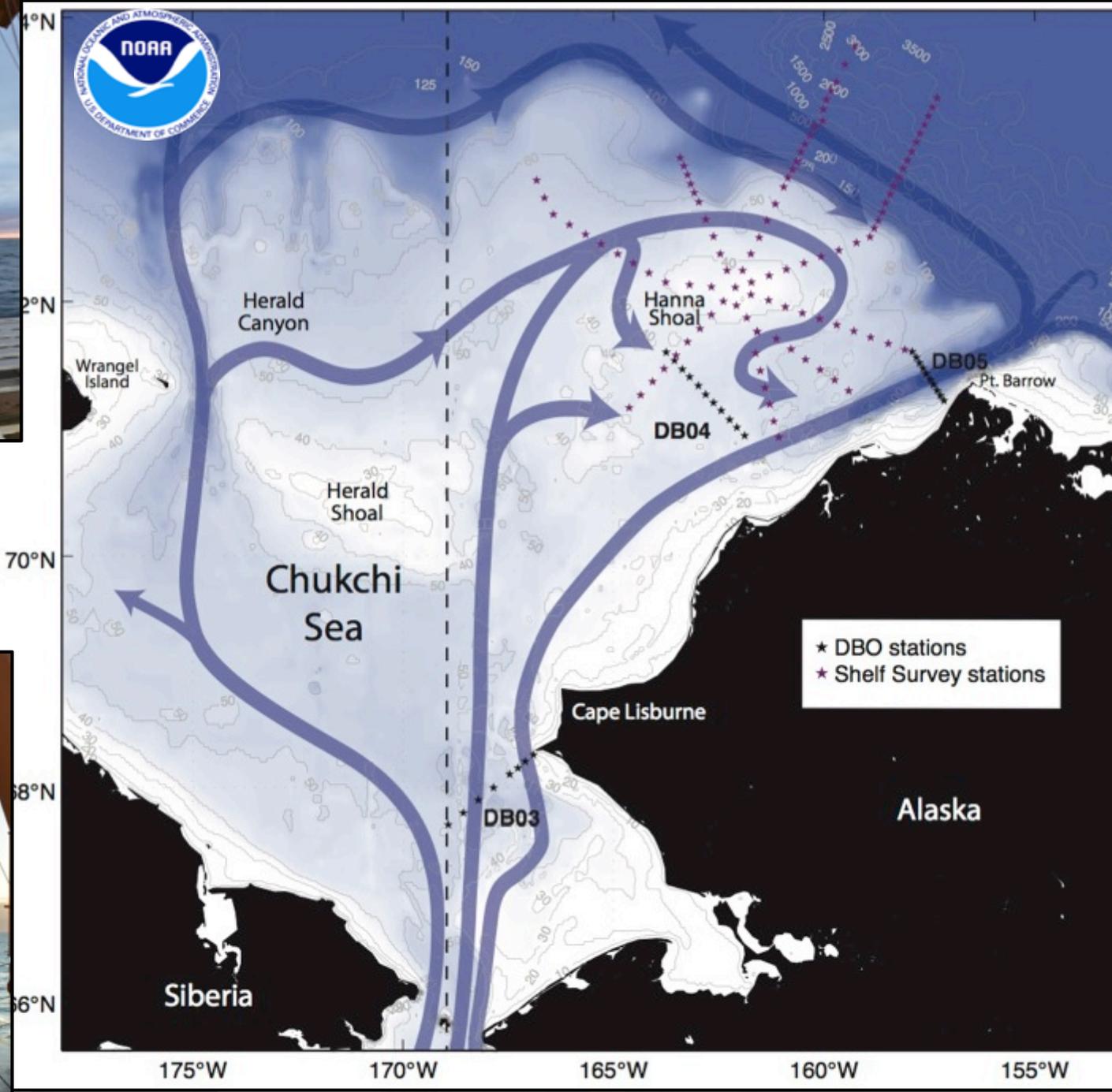
Arctic Research Program LOE 2
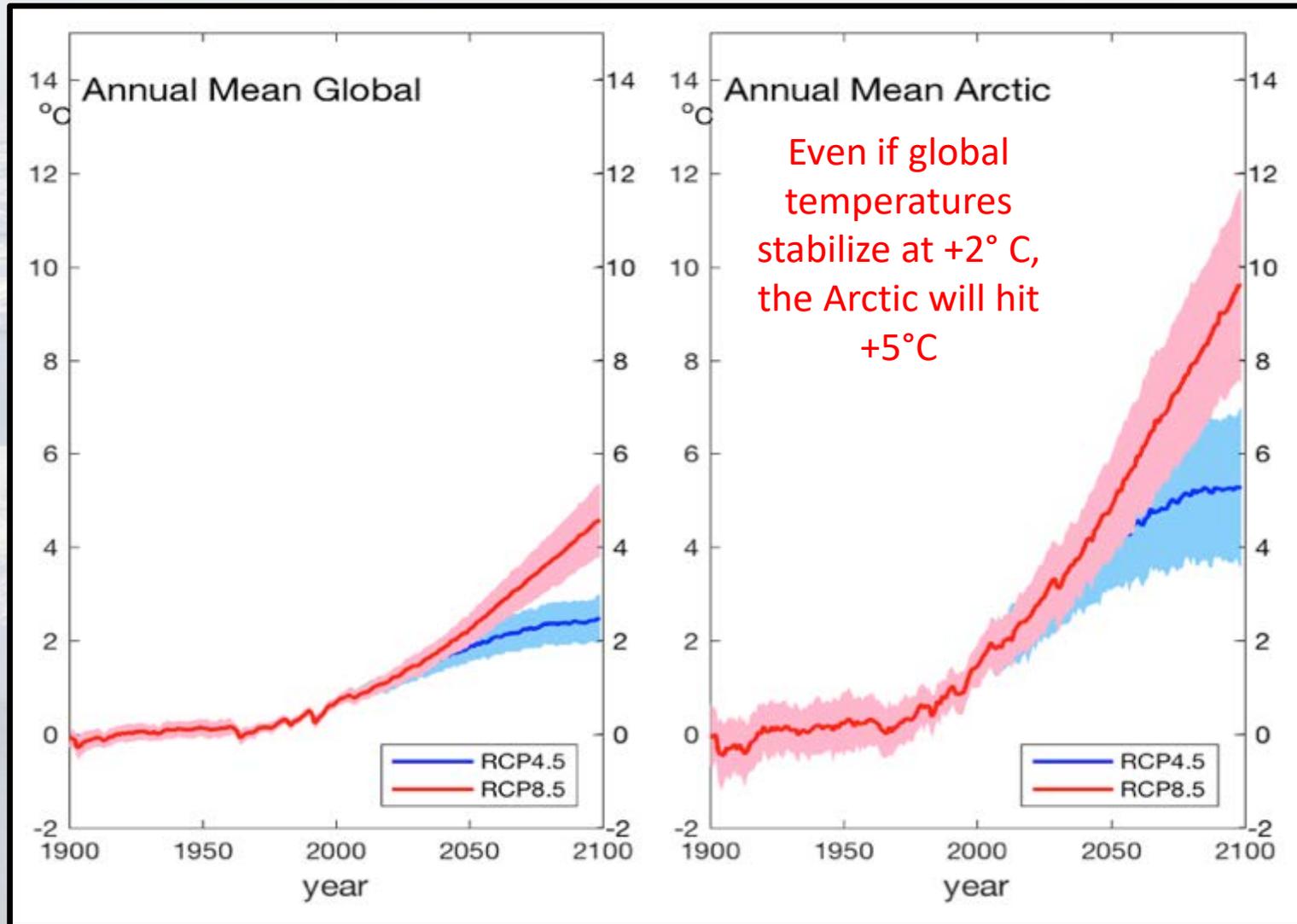# Arctic SailDrones

Arctic Research Program LOE 3
International Arctic Systems for Observing the Atmosphere (IASOA)

Arctic Research Program LOE 4

Support expanded modeling of climate, sea ice, and ecosystems

Arctic Research Program LOE 5

U.S. Arctic Observing Network (AON)

Establish and support a task-driven US AON to mobilize U.S. contributions towards <u>integrated</u> and <u>well-defined</u> observing networks that <u>enable access</u> to high quality data, expertise and information in support of scientific understanding, local needs, and agency operations.

- Improve observing capacity for sea ice forecasting and navigation products;

- Improve cyberinfrastructure for synthesizing and applying ship tracking data (AIS) towards regional decision making;

- Improve observational products for terrestrial snow cover;

- Improve biogeochemistry products for fisheries management.