

NOAA Arctic Ocean Operations, 2013-2014



Kathleen Crane

Arctic Research Program, Climate Program Office, NOAA

14 January

Arctic Icebreaker Coordinating Committee Meeting

Marine Acoustics Inc.

Arlington, VA 22203

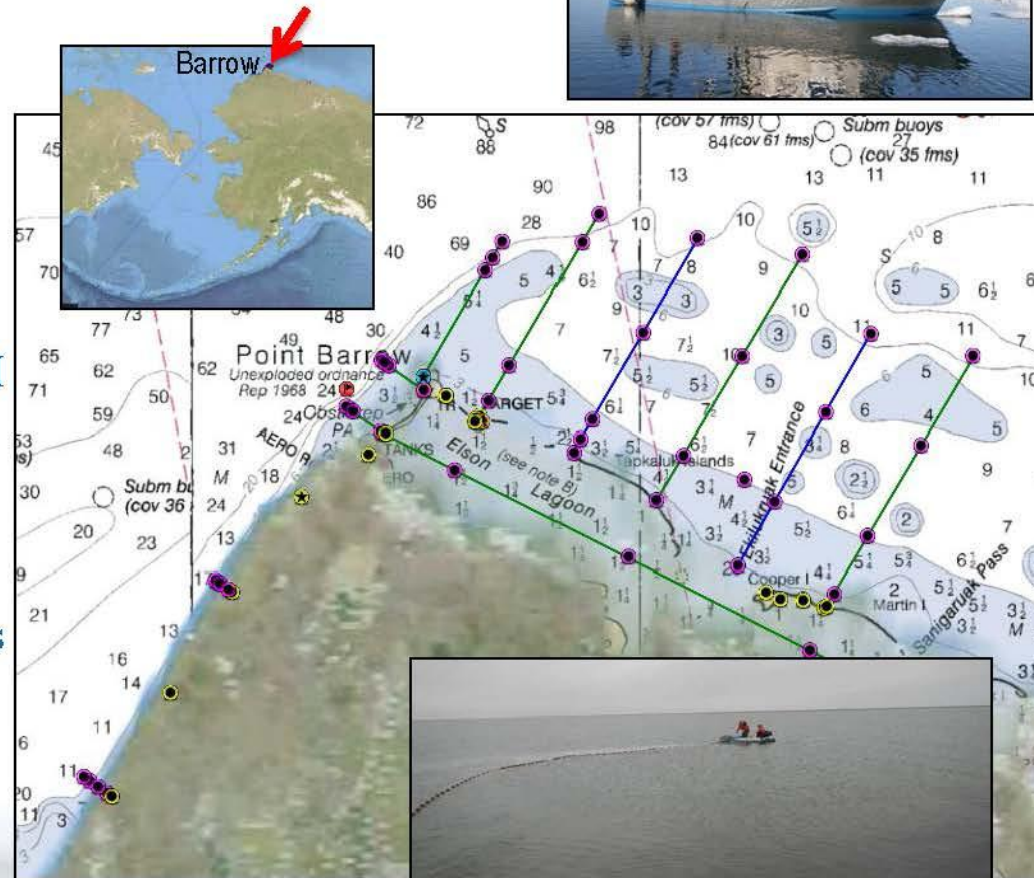
Arctic Ecosystem Integrated Survey (Arctic EIS) 2013

- **Where:** Chukchi Sea/Northern Bering Sea
- **When:** August 1 to September 29
- **Who:** UAF, AFSC (ABL, HEPR, RACE, MACE, Eco-FOCI, REFM), USFWS, ADFG
- **How:** funding from CIAP (\$3,000K), BOEM (\$300K), AYK SSI (\$150K)
- **Why:** to address objectives within the Arctic Fishery Management Plan and to conduct fisheries and oceanographic surveys in the region.
- **Planned:** Northern Bering Sea September 1 to 25, 2014



Arctic Coastal Ecosystem Survey (ACES) 2013

- **Where:** Chukchi & Beaufort Seas and adjacent lagoons
- **When:** 11 July – 25 August
- **Who:** AFSC, Florida International University, University of AK Fairbanks, Louisiana State University, North Slope Borough
- **How:** funding from NPRB (\$300K), BOEM (\$164K), in-kind AFSC (\$200K), in-kind FIU (\$90K)
- **Why:** to address objectives within the Arctic Fishery Management Plan and to understand the importance of Arctic lagoons and nearshore habitats (<20m) for juvenile fish through fisheries surveys and laboratory analyses (fish condition)
- **Planned:** Repeat July & August 2014



Hello North Slope Residents:

We are conducting a study in the Chukchi Sea called ARCWEST which will help us better understand where whales spend their time in relation to food, ocean conditions, and oil and gas activities.

R/V Aquila
August 20- September 12,
2013



Arctic Whale Ecology Study (ARCWEST)

Approximate Cruise Dates: August 20, 2013* (Nome) – September 12, 2012 *(Nome)

**Tentative dates, could be up to 5 days earlier*

(please see map on back)

Research Goals:

- Study the movements of humpback, fin, and gray whales in the Northeast Chukchi Sea using *satellite tagging*.
- Determine where bowhead, gray, fin and humpback whales are in the Northeast Chukchi Sea using shipboard observations, seasonal and year-round acoustic recorders.
- Study movement of krill and nutrients from the Bering Strait to the Barrow Canyon.
- Monitor changes in the marine ecosystem through time.
- Learn how whales respond to changes in climate and human activities.



Principal Investigators:

Nancy Friday, Catherine Berchok, Jeffrey Napp, and Alex Zerbini,
Alaska Fisheries Science Center, NOAA, Seattle, WA

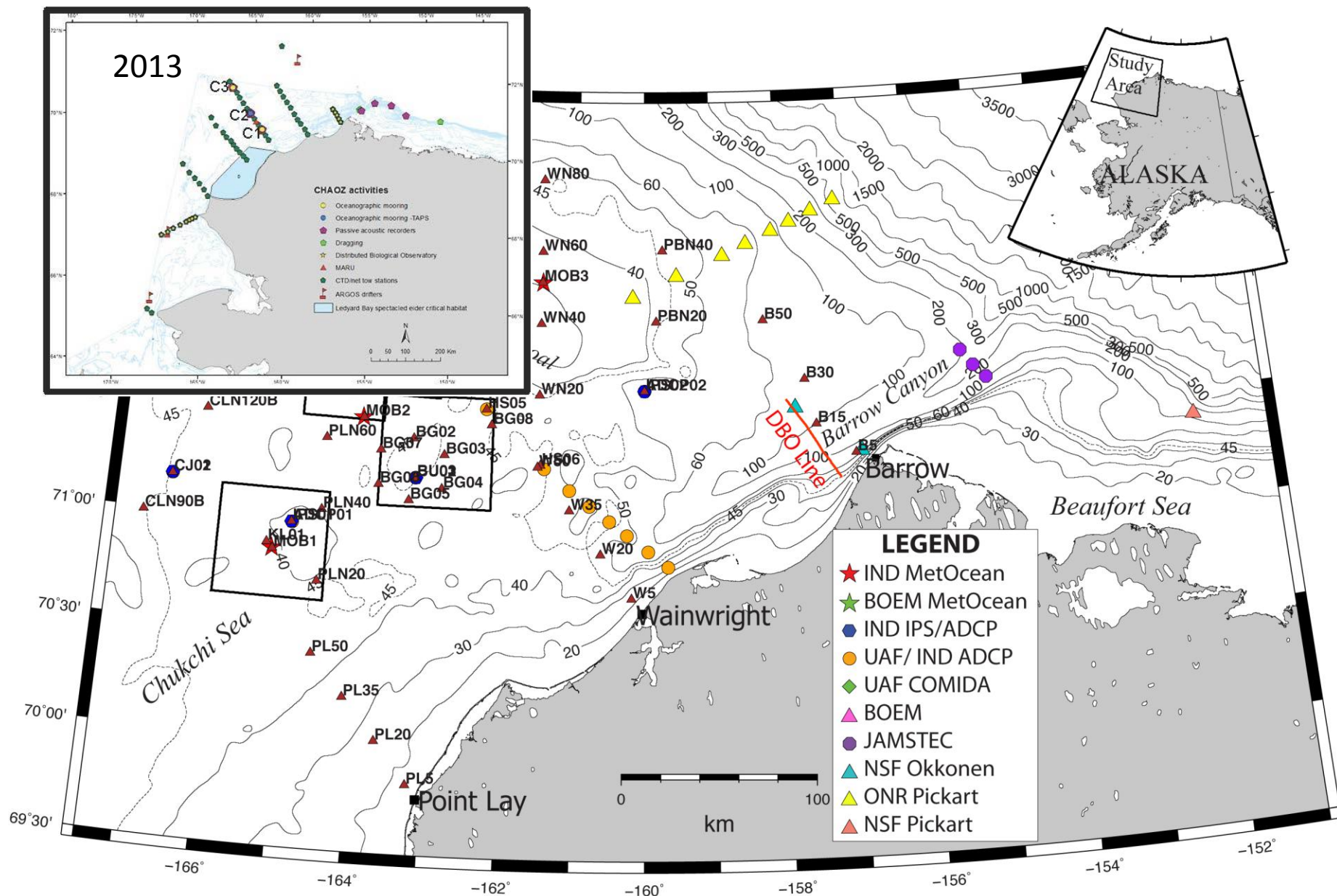
Phyllis Stabeno, Pacific Marine Environmental Lab., NOAA, Seattle, WA



If questions, contact: Nancy.Friday@noaa.gov 206.526.6266

Among many things, we will study krill and other important whale foods to determine where they occur and why.

CHukchi Acoustics, Oceanography, and Zooplankton (CHAOZ) Study II: FY10-FY15



RUSALCA, Bering Strait

Moorings

(Rebecca Woodgate, Chief Scientist)-July 2013

Ship-track, blue.

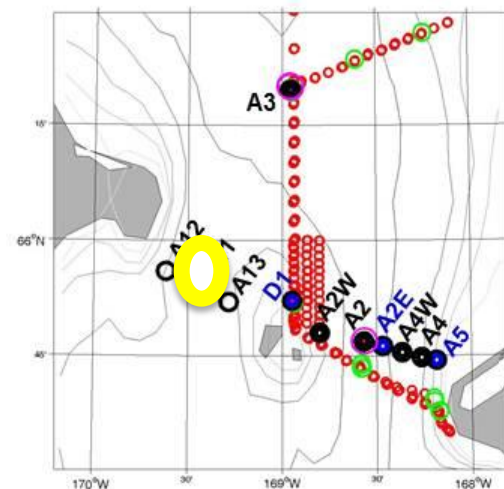
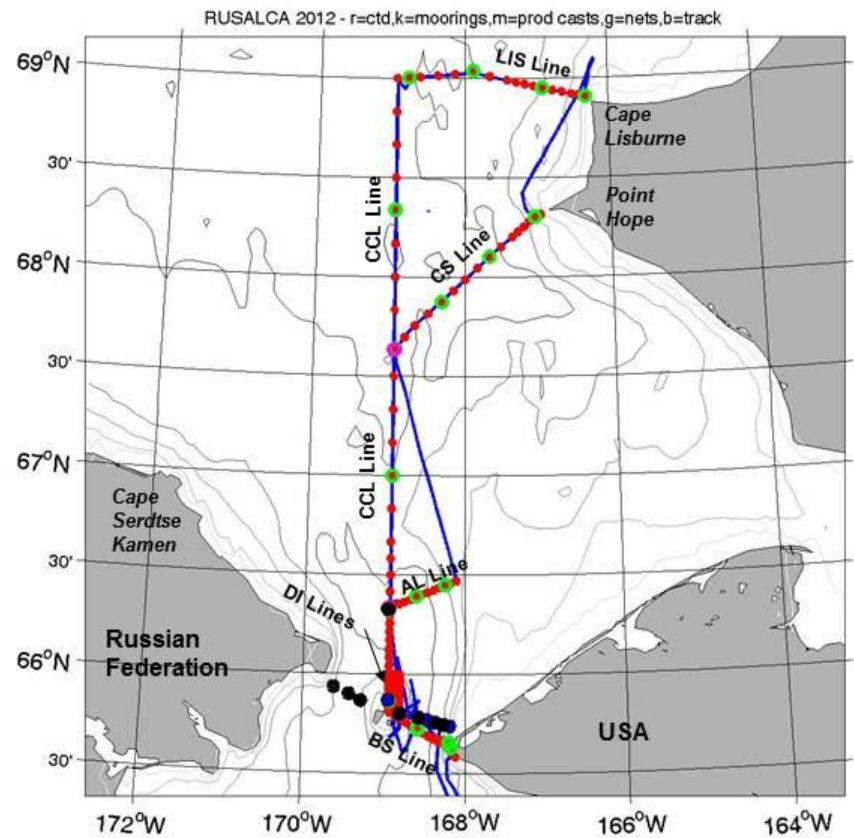
Mooring sites, black.

CTD stations, red.

Zooplankton nets, green.

Productivity casts, magenta.

Lower panel mooring detail: - black solid=recovered and redeployed; black with blue center =recovered, not redeployed; Ring: to be deployed in 2014, by RUSALCA with PMEL, NOAA

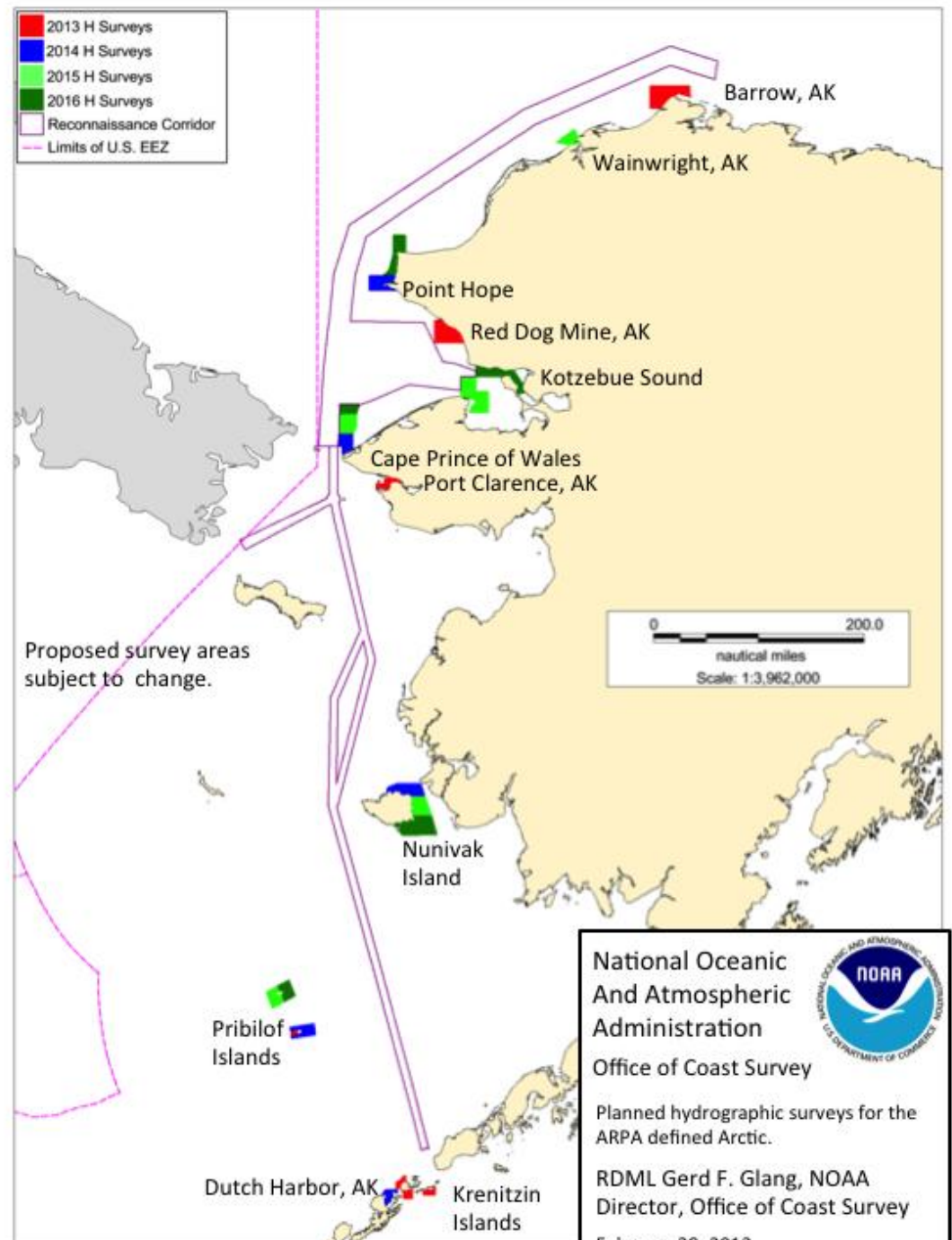


Funding in 2013 from ONR, NSF and NOAA

Fairweather did not operate in the Arctic in 2013

298 sq.nm were mapped near The Red Dog Mine & Krentizin Islands by Contractors.

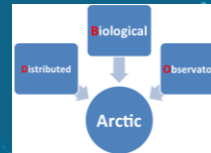
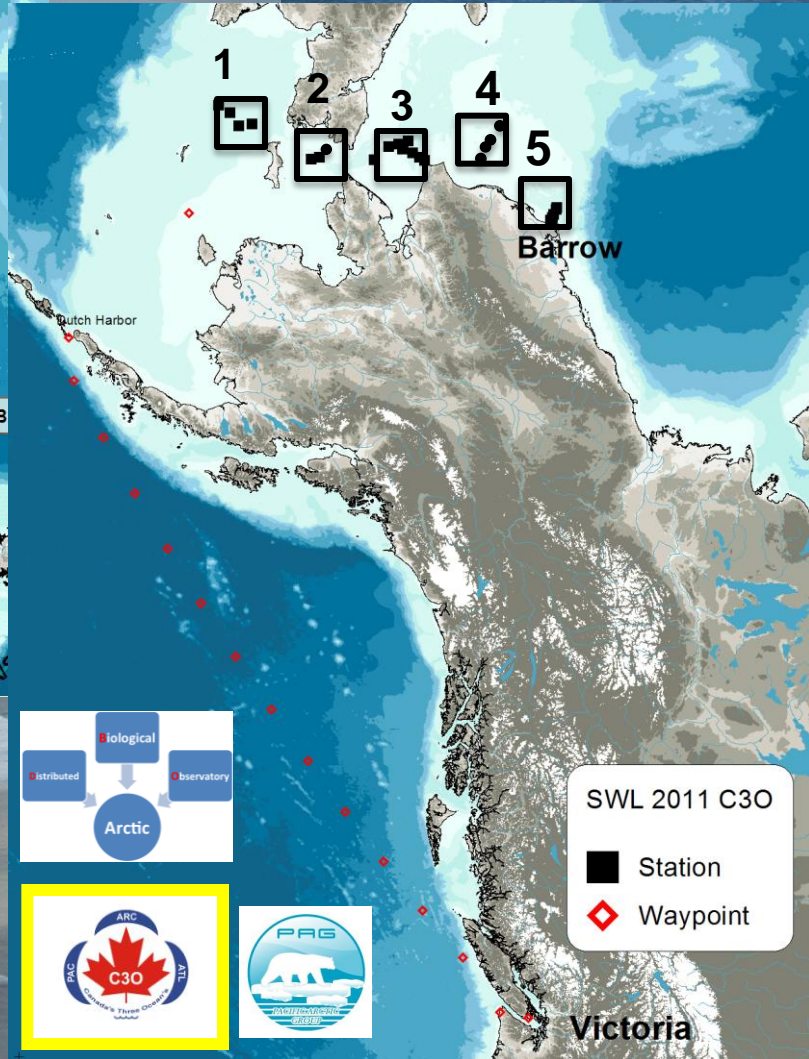
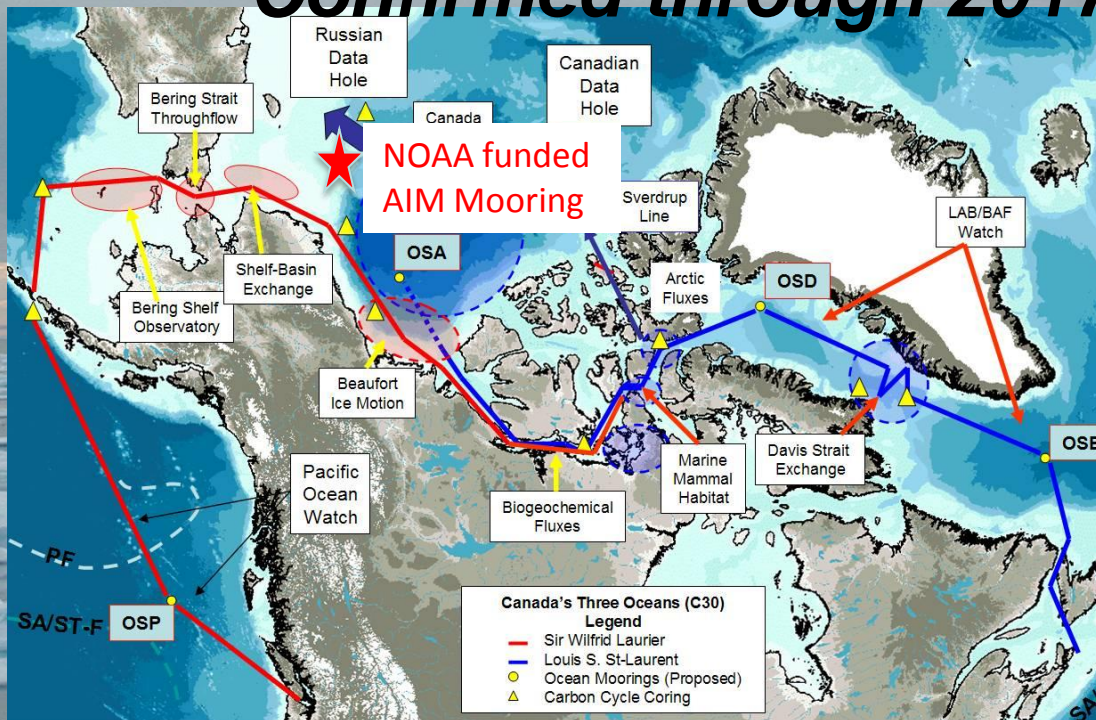
Plans for 2014-2015 may occur along these transects but may be revised due to budget allocations



US-Canada collaboration as part of the C30 and DBO efforts

~July 6-22, 2012 and July 7-25, 2013

Confirmed through 2017



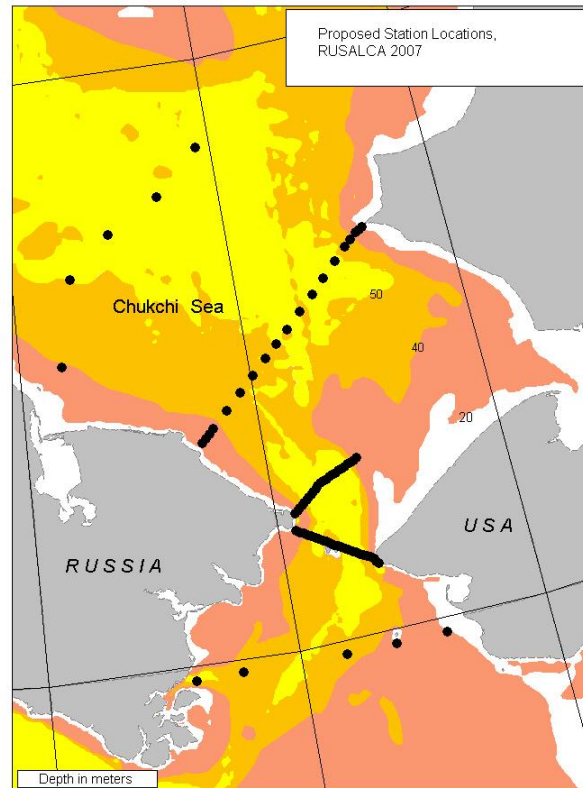
- Interdisciplinary
- Distributed, latitudinal mode of observations in Pacific sector
- Samples nearly same day in July as CCGS Sir Wilfrid Laurier transits to Canadian Arctic

RUSALCA 2014

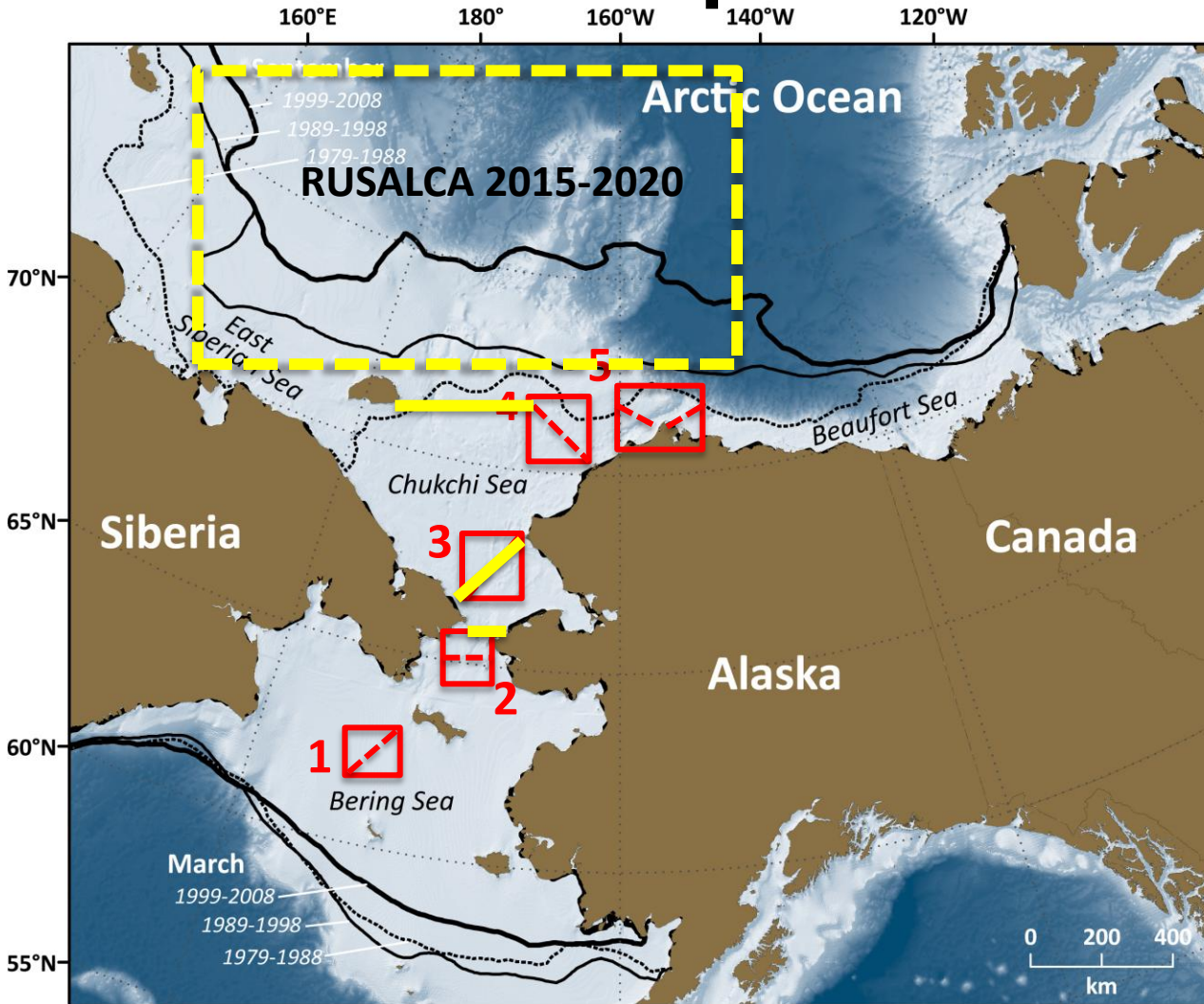
Anadyr to Anadyr

Deploy mooring on the
Russian side of the Bering
Strait

Carry out the DBO line 3
Transect from Russia to the
USA

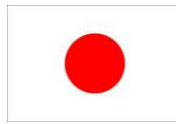


Arctic system changes in the Pacific Arctic Ocean: Causes and Impacts: RUSALCA 2015-2020



[modified by Karen Frey from Grebmeier et al. 2010, EOS 91]

- DBO sites (red boxes) are regional “hotspot” transect lines and stations
- Chukchi RUSALCA sites are considered to exhibit high productivity, biodiversity, and overall rates of change
- Northern RUSALCA sites will serve as a change detection array for the identification and consistent monitoring in the Pacific Arctic Ocean ,
- Sites occupied by national and international entities with shared c



2015-2020



2 U.S. Russian DBO lines



12 Repeat hydrography,
KOREA, JAPAN, RUSSIA- USA,
CHINA?

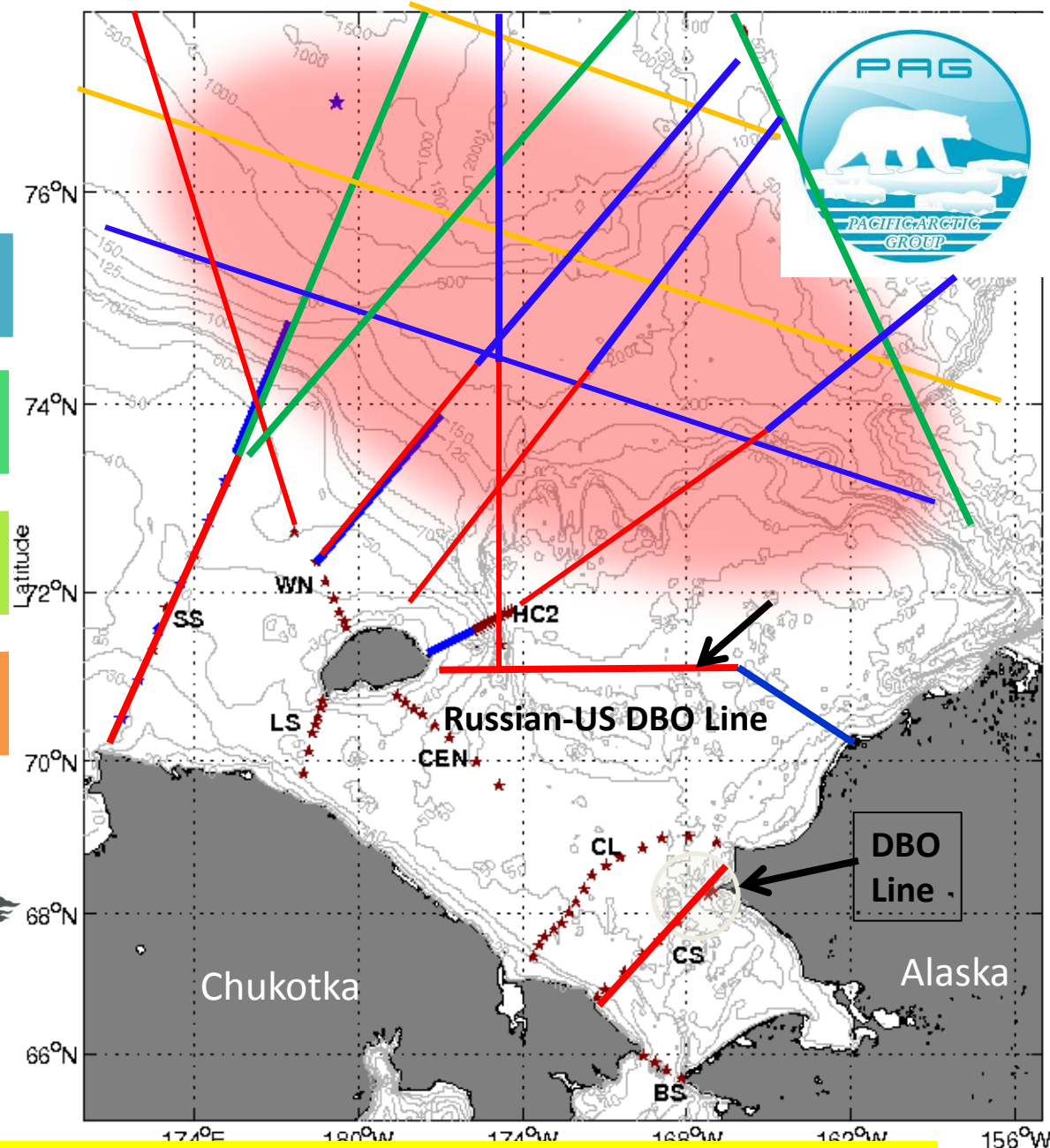


Ecosystem and Methane



RUSALCA + Korea, China,
Japan, Canada, Germany,
Sweden?

KOREA
JAPAN
RUSSIA-US
US ?
CHINA?



U.S.- Russia-Japan-Korea-China 2014-2019 synoptic surveys: