

NOAA report to the AICC

**December 2010
Seattle, Washington**

**Kathy Crane
NOAA Arctic Research**

and

**Kevin Wood
Univ. of Washington (JISAO)**

NOAA Activities

**In the Bering – Chukchi – Beaufort Sea Region
(2010 – 2011)**

NOAA Arctic: RUSALCA (with the RF Academy of Science)

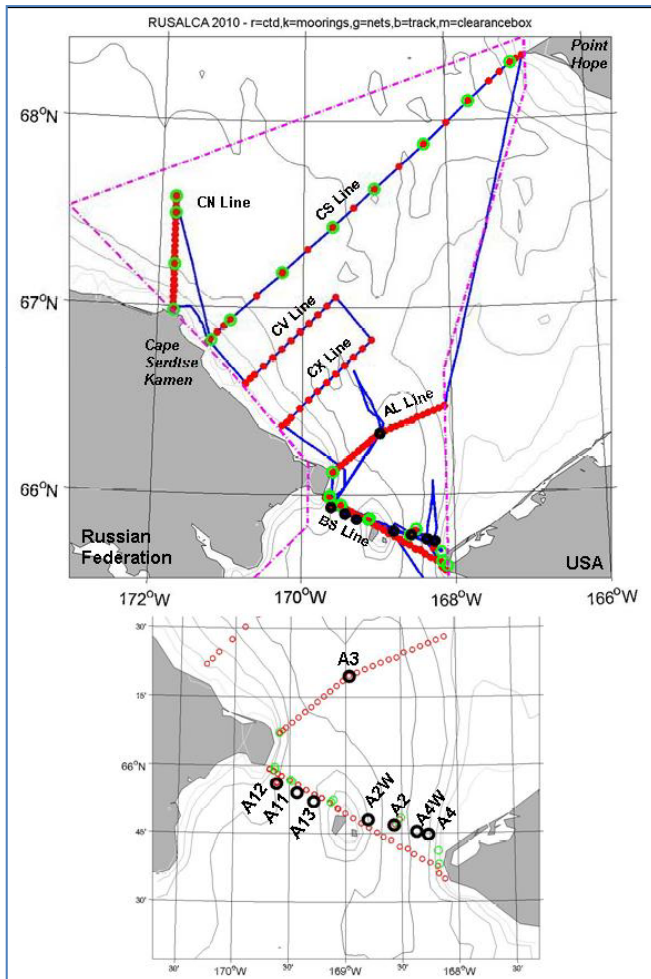
National Ocean Survey

Pacific Marine Environmental Lab – Alaska Fisheries Science Center

Distributed Biological Observatory

RUSALCA

2004 – 2005 – 2006 – 2007 – 2008 – 2009 – 2010 – 2011 – 2012



Short (mooring) cruise work area

Joint program with the Russian Academy of Science with collaboration from the Russian naval hydrographic service, ROSHYDROMET, others

Long term monitoring and climate change detection

Maintain moorings in/near Bering Strait

Repeat hydrographic surveys

Multi-disciplinary cruise every 3-5 years

Mutual access to Russian and US EEZ (but Russian flag vessels required)



NOAA Nat'l Ocean Survey



NOAA ship *Fairweather* begins multi-year program to collect data for updating Arctic nautical charts

Arctic States Regional Hydrographic Commission established

Prompted by increased Arctic shipping activity

NOS Office of Coast Survey develops plan for nautical charting in the Arctic with other agencies

NOAA PMEL – AFSC

18 Cruises in 2011

NOAA ship *Oscar Dyson* – 10 cruises

R/V Thomas G. Thompson – 2 cruises

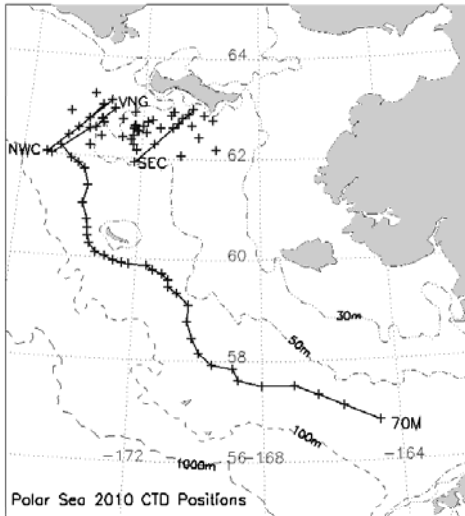
Contract vessel – 5 cruises (w/ Arctic Ecosystem Mooring)

TBD – 1 cruise (30 days)

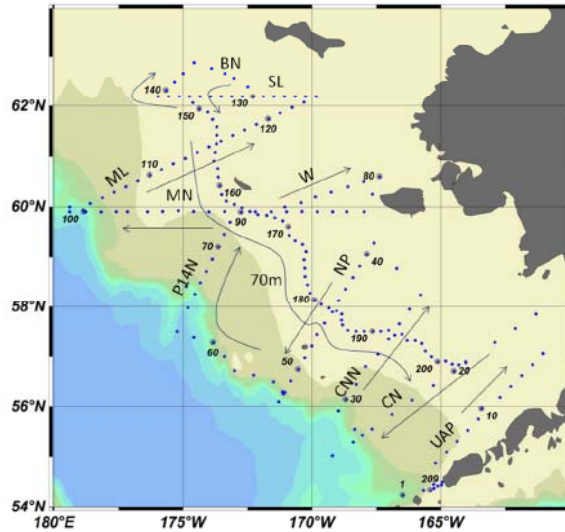
Dates	Ports	Days	Activities	Project
Jan 27 - Jan 28	Seattle-Seattle	2	Gear Trials	
February 2 - 9	Seattle - Kodiak	8	GOA IERP: SE Mooring Deployment	
February 24 - March 4	Kodiak-Kodiak	9	Winter Cruise (GOA IERP): CTD, bongo, neuston	FOCI, GOA IERP
March 16 - March 31	Kodiak - Homer	16	Pollock egg collection	MACE
~April 14 - May 1	Seattle-Kodiak	18	GOA IERP: SE Alaska CTD, bongo, neuston	NPCREP, GOA IERP
~May 2 - May 15	Dutch-Dutch	14	FOCI Spring Moorings (70 m isobath): Moorings, CTD	NPCREP
May 3 - May 14	Kodiak-Dutch	12	Spring BS Ichthyo: Neuston, Bongo, Drifters, CTD	NPCREP, BSIERP
May 16 - May 27	Dutch-Kodiak	11	FOCI Late Larval: Bongo, Neuston, CTD, Line 8	FOCI, GOA IERP
~June 2 -June 21	Dutch-Dutch	20	Groundfish: Bongo, CTD on bottom trawls	NPCREP, BSIERP
~June 22-July 12	Dutch-Dutch	20	Groundfish: Bongo, CTD on bottom trawls	NPCREP, BSIERP
~Jul 13 - Aug 1	Dutch-Dutch	20	Groundfish: Bongo, CTD on bottom trawls	NPCREP, BSIERP
~Aug 15-Sept 1	Nome- Nome	20?	Arctic Ecosystem Observations: CTD, Moorings, Tucker	MMS
Aug 16 - Sept 16	Dutch-Dutch	30	BASIS: Bongo	BASIS
TBD FALL	Juneau-Juneau	30	Fall GOA IERP	GOA IERP
Sept 19 - Sept 30	Kodiak-Kodiak	12	Fall BS Moorings (70 m isobath): Moorings, CTD, bongo	NPCREP, GOA IERP
early Oct	Kodiak-Kodiak	7	GOA IERP: Northern GOA Mooring Recovery Moorings	NPCREP, GOA IERP
Oct 3 - Oct 16	Dutch-Kodiak	14	GOA Fall Juvenile Survey: midwater trawl, beam trawl, bongos, Van Veen grab	FOCI
Oct 20 - Oct 27	Kodiak-Seattle	8	GOA IERP: SE Mooring Recovery Moorings	NPCREP, GOA IERP

NOAA PMEL – AFSC

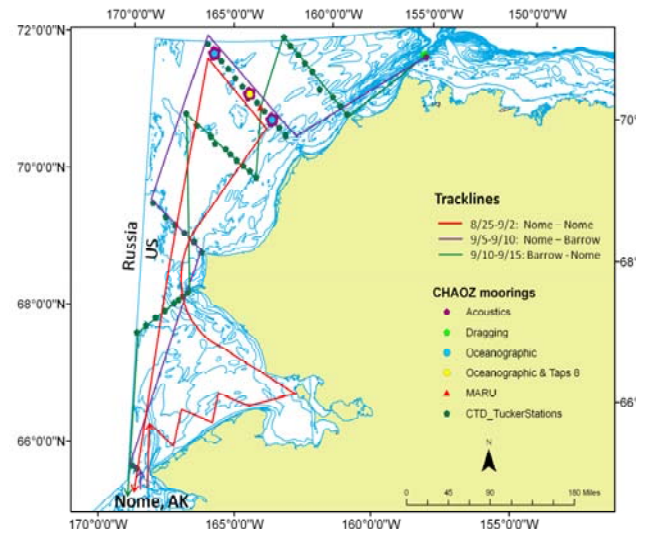
Operating areas



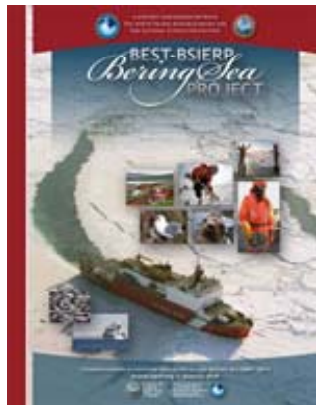
BEST Ice
Winter



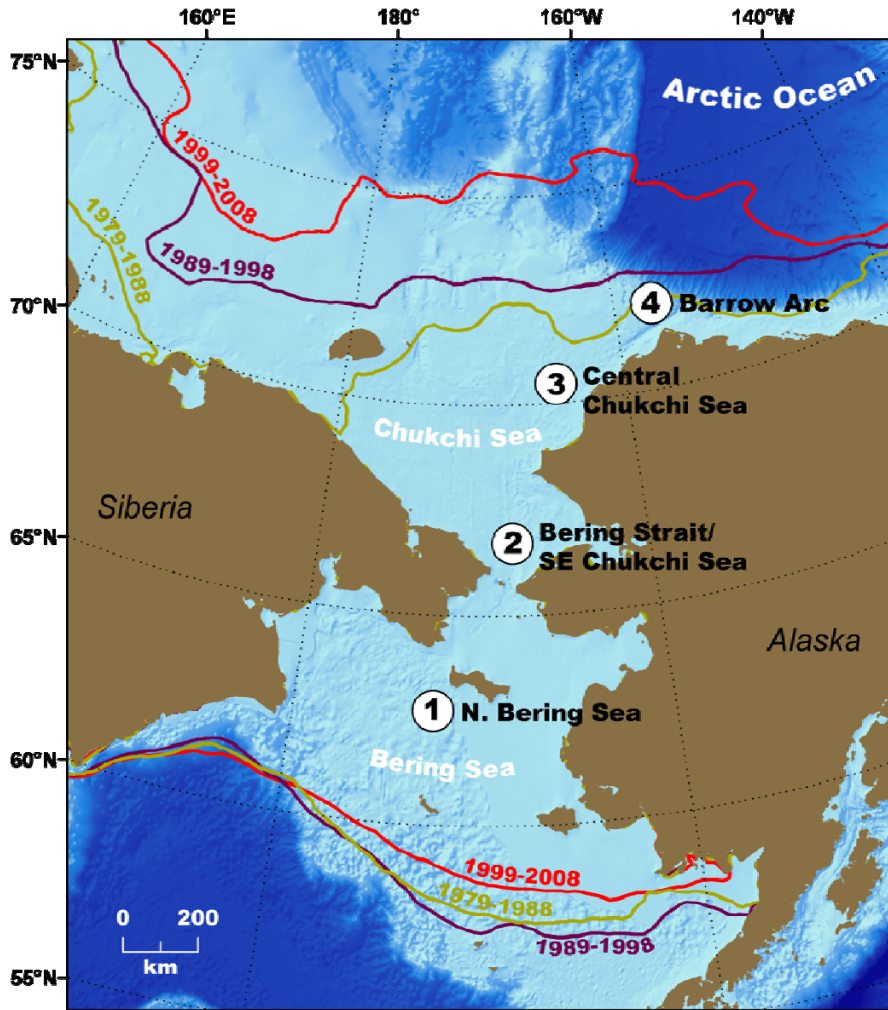
BEST
Spring - Summer



Arctic Ecosystem
CHAOZ

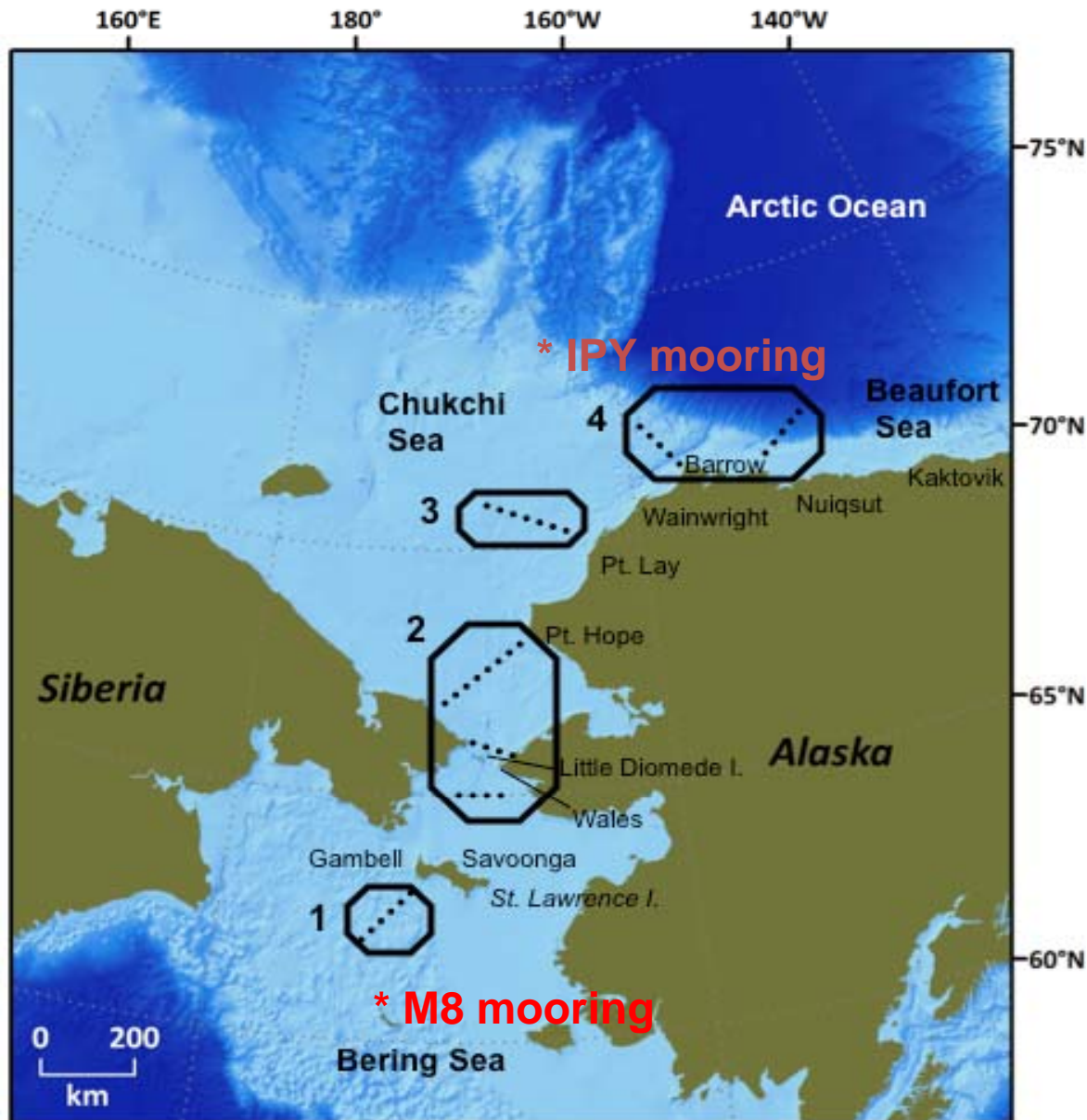


Coming up: Distributed Biological Observatory (DBO)



- 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

Repeated Oceanographic Sampling



Stations from prior & existing research programs: SBI, RUSALCA, SNACS, BOWFEST

Framework for integration of IPY * and many other research programs

Links to prior & existing Community-based Research: SLI/Diomedes Pt. Lay, Barrow

2010 Pilot Season



Example: *Laurier* Cruise
 Grebmeier/Fudge: 6-21 July 2010

Vessel	Country	PI
<i>Moana Wave</i>	USA	Grebmeier
NMML/TBD	USA	Berchok, Stabeno Weingartner
<i>Aaron</i>	Korea	Lee
<i>Xue Long</i>	China	Zhao
<i>Mirai</i>	Japan	Itoh
<i>Laurier</i>	Canada	Fudge
<i>ST Laurent</i>	Canada	Carmack
<i>Healy</i>	USA	Arrigo
<i>Healy</i>	USA	Pickart
<i>Annika Marie</i>	USA	Ashjian
<i>Khromov</i>	USA	Crane

DBO Vision

Core standardized ship-based sampling:

- CTD
- Chlorophyll
- Nutrients
- Ice algae/Phytoplankton (size, biomass and composition)
- Zooplankton (size, biomass and composition)
- Benthos (size, biomass and composition)
- Seabird (standard transects, no additional ship time)
- Marine mammal observations (no additional ship time)

“Change detection array” – same measurements every year, process information in near real time <6 mos; detect regime shifts in rapid changes

Additional leveraged programs both domestic and international