

# **NOAA report to the AICC**

**April 20, 2010  
Arlington, VA**

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NOAA Arctic Research Program, Climate Program Office**

# **NOAA Activities**

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

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

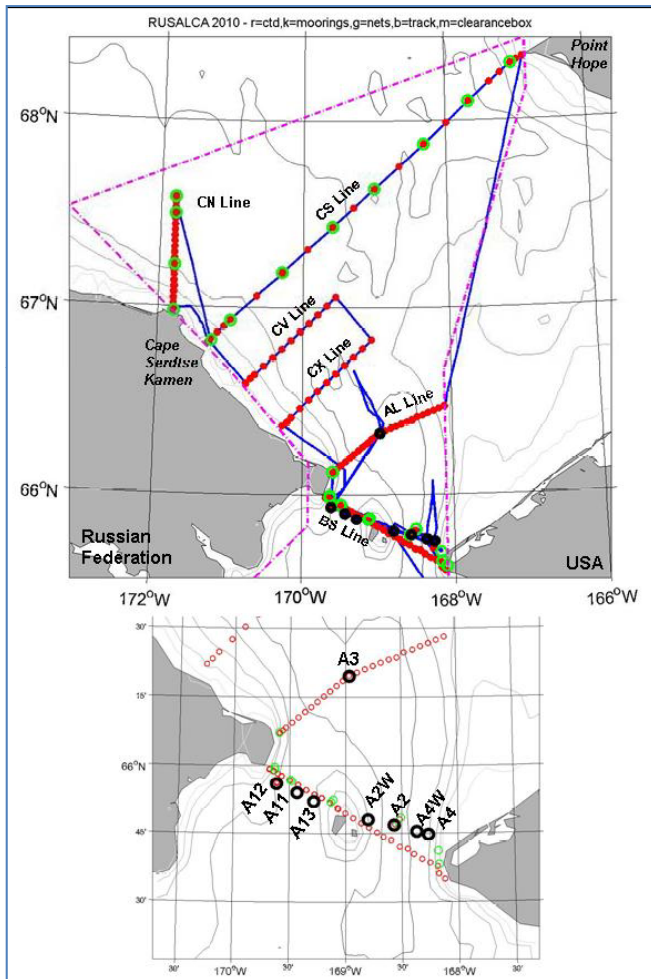
**National Ocean Service (Coast Survey)**

**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 Service

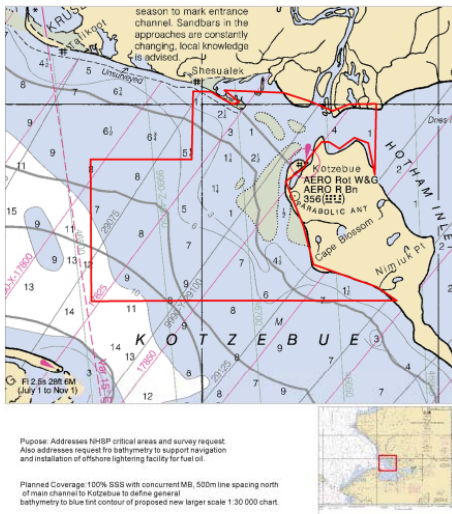


NOAA ship *Fairweather* will continue its multi-year program to collect data for updating Arctic nautical charts (budgets and ship availability depending)

Arctic States Regional Hydrographic Commission  
established

OPR-S327-FA-11 Approaches to Kotzebue, AK  
Planned Project for 2011  
Total Area 417 SNM  
02/23/2011

Prompted by increased Arctic shipping activity and need for navigational safety in the U.S.-Arctic coastal waters.



## 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* – was scheduled for 10 cruises but these have been reduced due to lack of NOAA ship funding

The DYSON is still scheduled to do the BASIS survey in the Bering Sea and southern Chukchi Sea (although there is some chance that might also be canceled). The NPCREP/FOCI cruise in the Bering Sea on the DYSON was canceled. The ice seal research on the McARTHUR II was also canceled.

R/V Thomas G. Thompson – 2 cruises

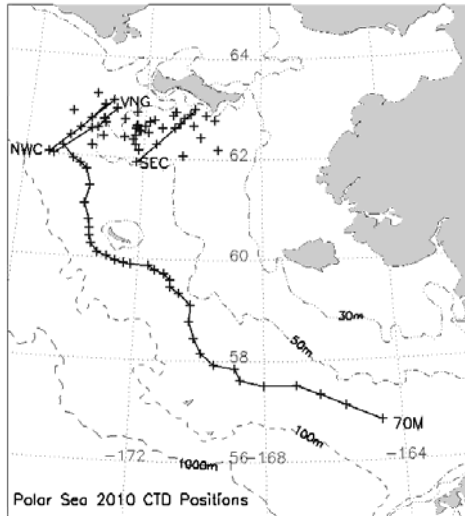
Contract vessel – 5 cruises (w/ Arctic Ecosystem Mooring)

TBD – 1 cruise (30 days)

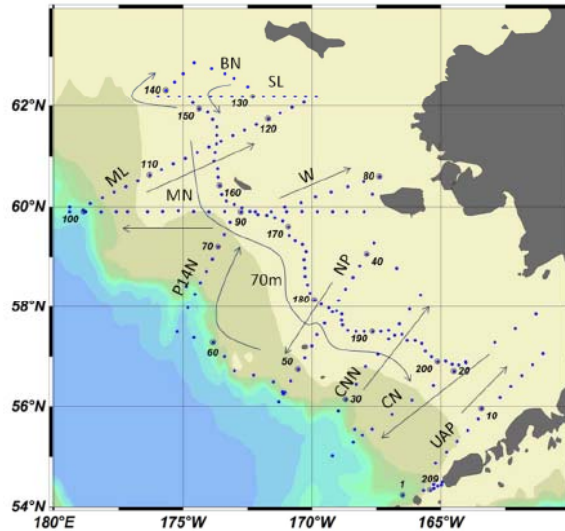
Dates	Ports	Days	Activities	Project
~May 2 - May 15	Dutch-Dutch	14	FOCI Spring Moorings (70 m isobath): Moorings, CTD	NPCREP
May 3 - May 14	Kodiak-Dutch	12	Spring BS Ichthyo: Neuston, Bongo, Drifters, CTD	NPCREP, BSIERP
May 16 - May 27	Dutch-Kodiak	11	FOCI Late Larval: Bongo, Neuston, CTD, Line 8	FOCI, 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 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

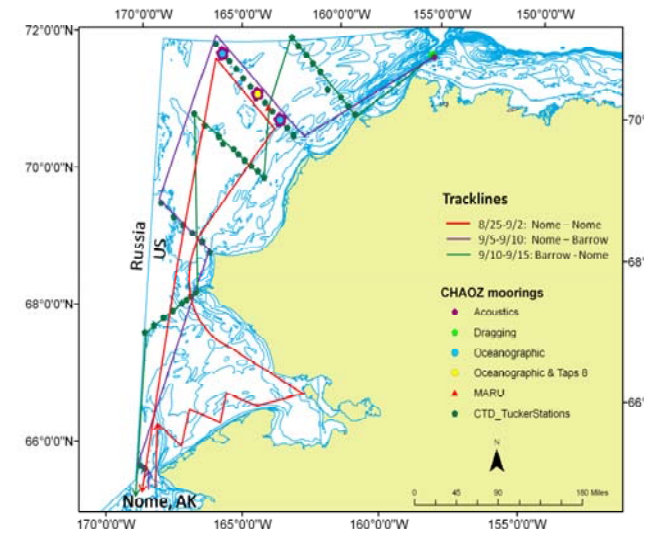
## Operating areas



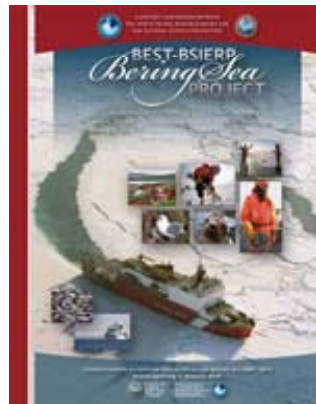
BEST Ice  
Winter



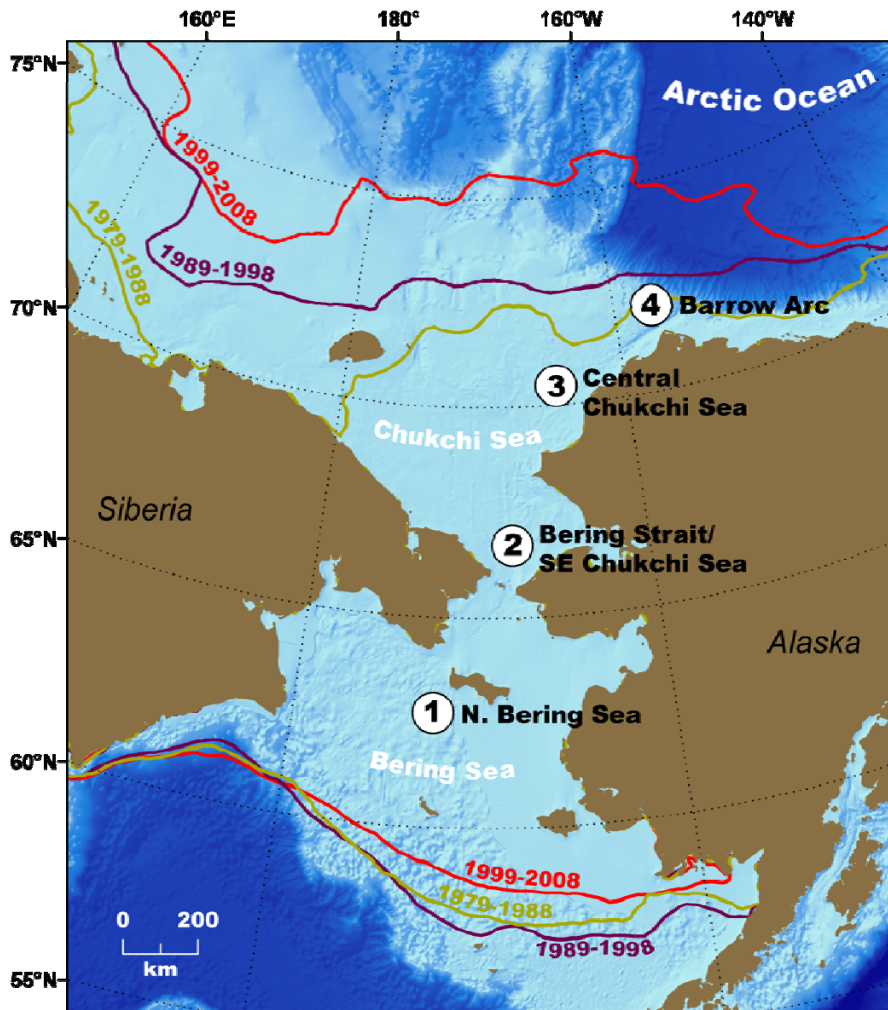
BEST  
Spring - Summer



Arctic Ecosystem  
CHAOZ



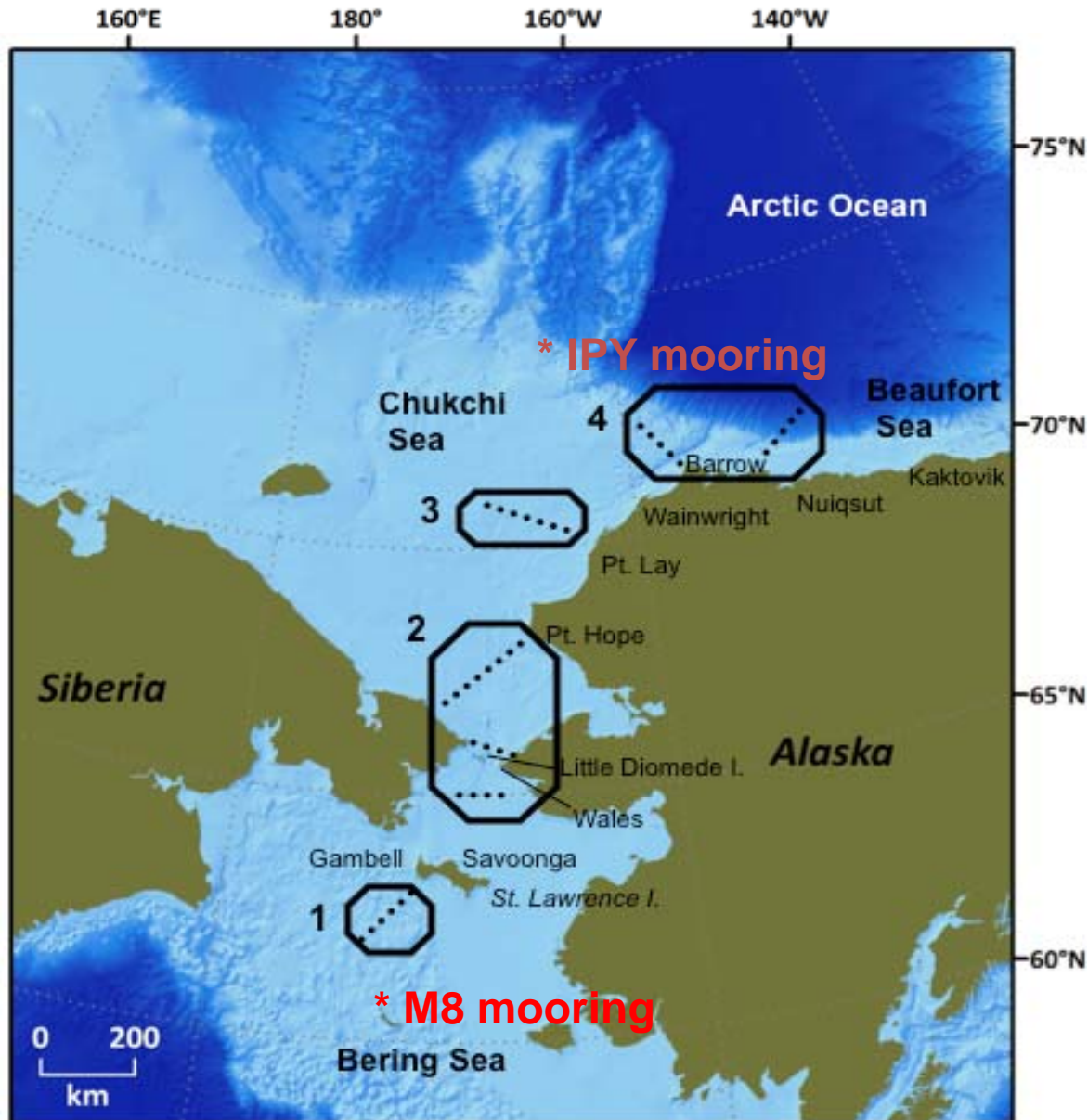
# Coming up: Distributed Biological Observatory (DBO)



- The DBO focuses on four regional “hotspot” locations along a latitudinal gradient
- DBO regions exhibit high productivity, biodiversity, and overall rates of change
- The DBO serves as a change detection array for the identification and consistent monitoring of biophysical responses
- The DBO is a US contribution to the CBMP-Marine Plan, (Pan-Arctic Monitoring of Biodiversity)



# 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	Woodgate

<http://pag.arcticportal.org>

# 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

## CIRCUMPOLAR BIODIVERSITY MONITORING PROGRAM

# Arctic Marine Biodiversity Monitoring Plan (CBMP-Marine Plan) *Final Draft – January 2010*

Arctic Marine Biodiversity Monitoring Plan, Final Draft for Review / December 2009



### ARCTIC MARINE BIODIVERSITY MONITORING PLAN (CBMP-MARINE PLAN)

FINAL DRAFT

—JANUARY 2010—

Gill, M.J., C. Crane, R. Hindrum, P. Amelberg, I. Byrnes, N.V. Denisov, V. Golman, A. Gray-Friedman,  
S. Gudmundsson, R.R. Hupcroft, K. Iken, A. Liberson, O.S. Lonska, I.A. Melnikov, S.E. Moore, J.D. Reist,  
B.J. Sienko, J. Stow, F. Ugarte, D. Vongraven, and J. Watkins.

Submitted by the

Marine Expert Monitoring Group

Circumpolar Biodiversity Monitoring Program

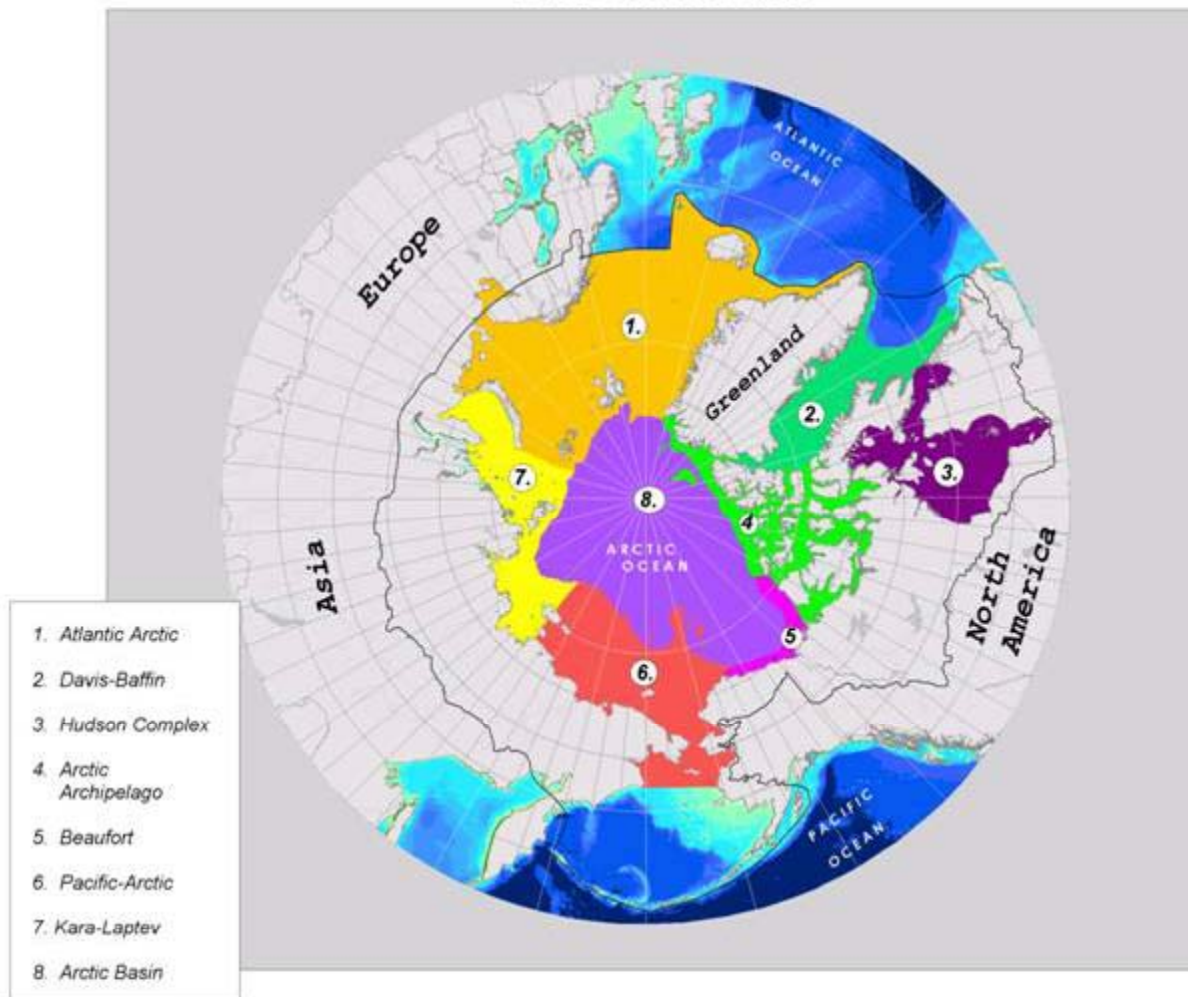
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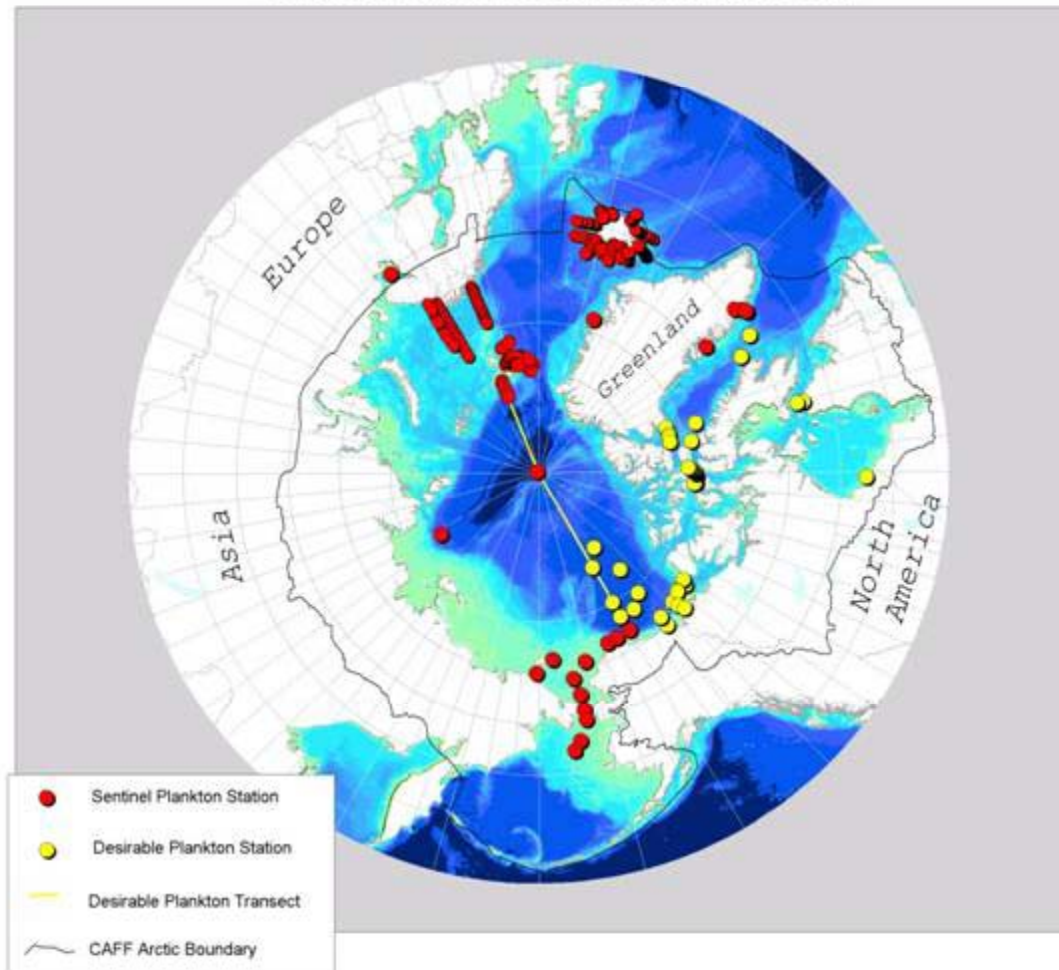
## CIRCUMPOLAR BIODIVERSITY MONITORING PROGRAM

### Arctic Marine Areas





### Sentinel Plankton Stations and Transects



# CBMP-Marine

CIRCUMPOLAR BIODIVERSITY MONITORING PROGRAM

