



Live from IPY!

18 May 2007

From the USCGC Healy

in the Bering Sea

USFWS

Benthic Predators in the Northern Bering Sea



Raise your hand to ask a question

List of all participants

Return to the Lobby or Exit

Slides will be shown here

'Chat' with one person or the entire group



What is PolarTREC?

PolarTREC is a professional development experience in which K-12 teachers are paired with researchers in authentic polar research experiences.

In the next three years 36 teachers from around the United States will join scientists in the Arctic and Antarctic in celebration of the International Polar Year!

[*www.polartrec.com*](http://www.polartrec.com)



The PolarTREC Team



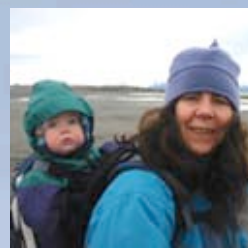
Wendy Warnick

PolarTREC PI
Executive Director



Helen Wiggins

Program Coordinator



Janet Warburton

PolarTREC
Project Manager



Katie Breen

PolarTREC
Project Manager



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Project Assistant



Ronnie Owens

Web Developer



Ben Wade

Web Developer



Tina Buxbaum

Electronic Media
Project Manager



Zeb Polly

Systems Administrator



Joed Polly

Video Production

...with help from
the entire staff
at ARCUS





International Polar Year (IPY) 2007-2009

The International Polar Year (2007-2009) is an exciting scientific campaign focusing on the world's polar regions!

IPY is a time for discovery, science, learning, and awareness about the polar regions with activities for youth, scientists, and the public.

[***www.ipy.org***](http://www.ipy.org)



Who are we talking with today?



Chief Scientist

Jackie Grebmeier
University of Tennessee



Researcher

Lee Cooper
University of Tennessee



Researcher

Jim Lovvorn
University of Wyoming



Climate-Driven Change in Impacts of Benthic Predators in the Northern Bering Sea



Goal of the project:

Conduct transects over the northern Bering Sea to inventory the benthic population and document changes in the marine food web.

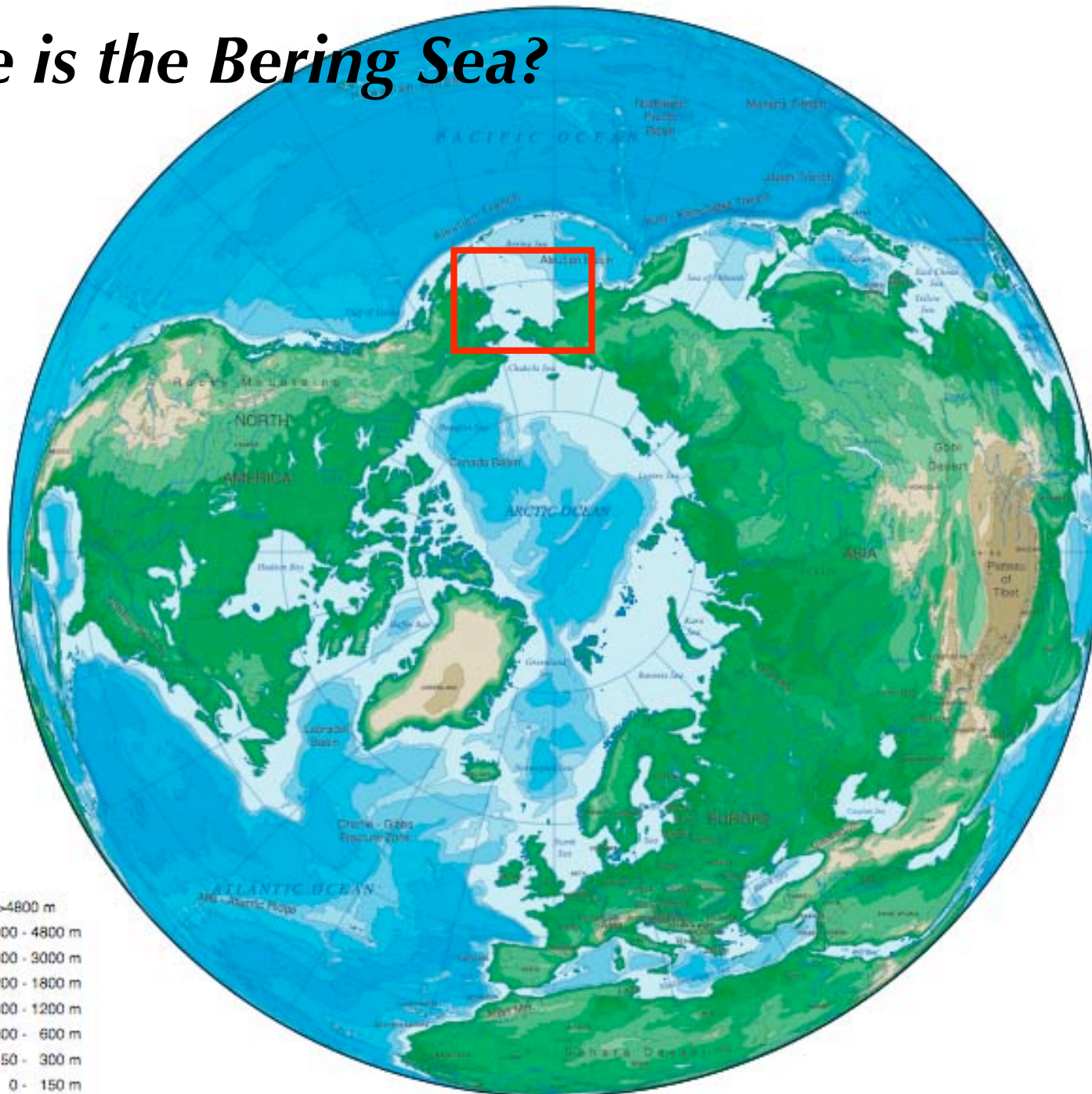
Dates:

16 May - 18 June 2007

Location:

Aboard the US Coast Guard Cutter Healy, in the Bering Sea

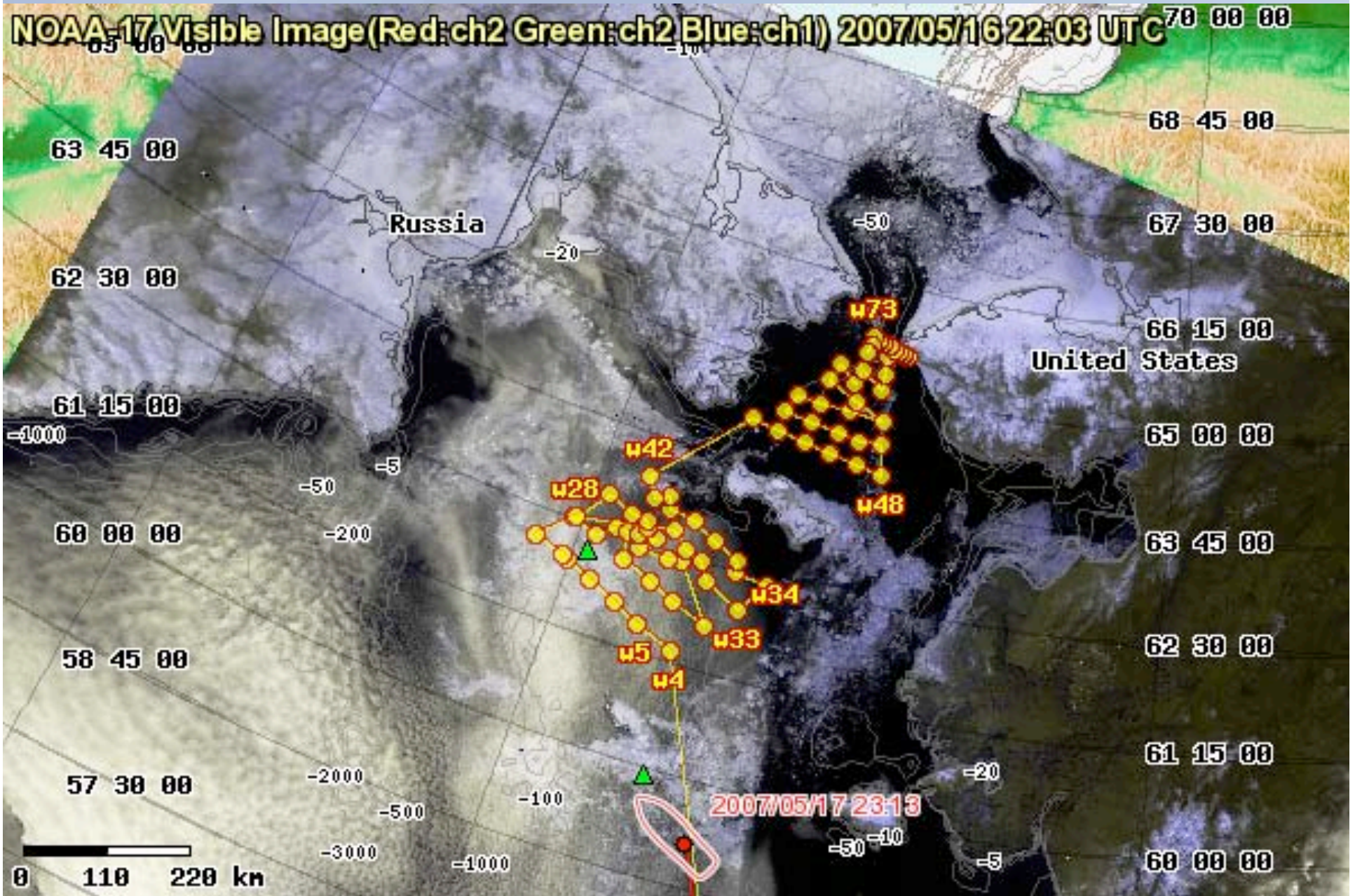
Where is the Bering Sea?



Area of Study: Northern Bering Sea



Where is the USCGC Healy?



PolarTREC: #1-Northern Bering Sea Cruise

**CLIMATE-DRIVEN CHANGES IN IMPACTS OF BENTHIC
PREDATORS IN THE NORTHERN BERING SEA
USCGC Healy (HLY0702): 16 May-18 June 2007**

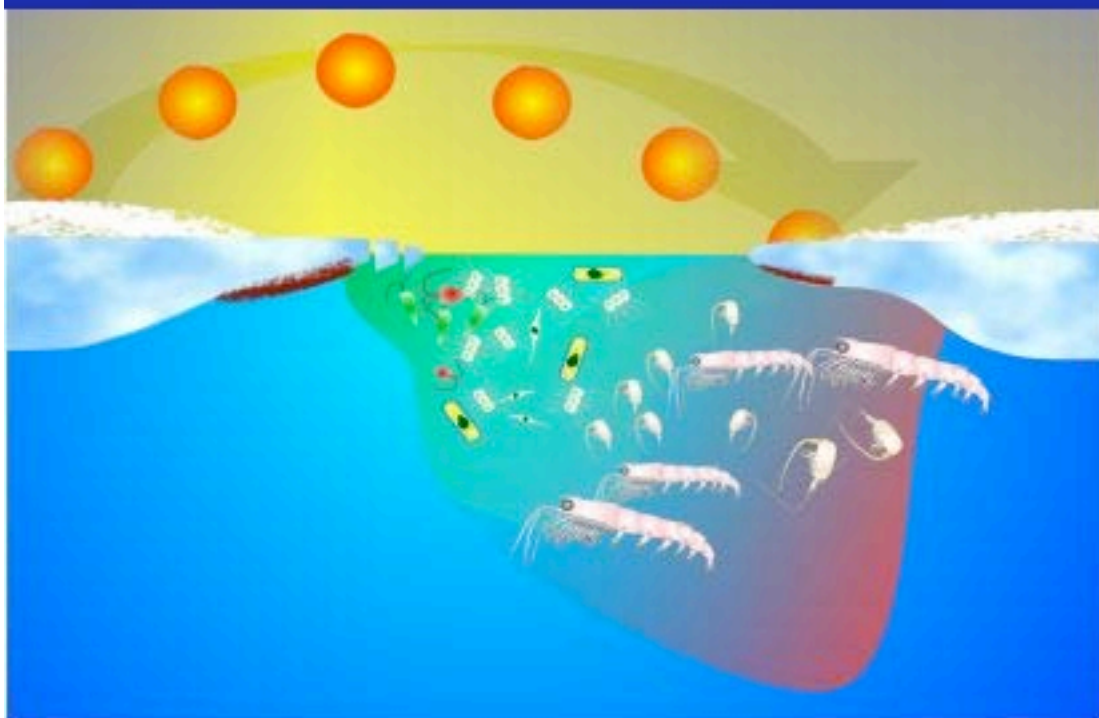
PI and Chief Scientist: Jackie M. Grebmeier (jgrebmei@utk.edu)

University of Tennessee, Knoxville, Tennessee

PI Lee W. Cooper, University of Tennessee, Knoxville

PI and Co-Chief Scientist: James R. Lowvorn, University of
Wyoming

Ice algae important in spring vs water column production in summer



[Wassman et al. 2004]



[courtesy Rolf Gradinger]

Ice algae slower rates of decay compared to temperate diatoms – allows more “labile” material to fuel benthic production in shelf regions; timing/location critical

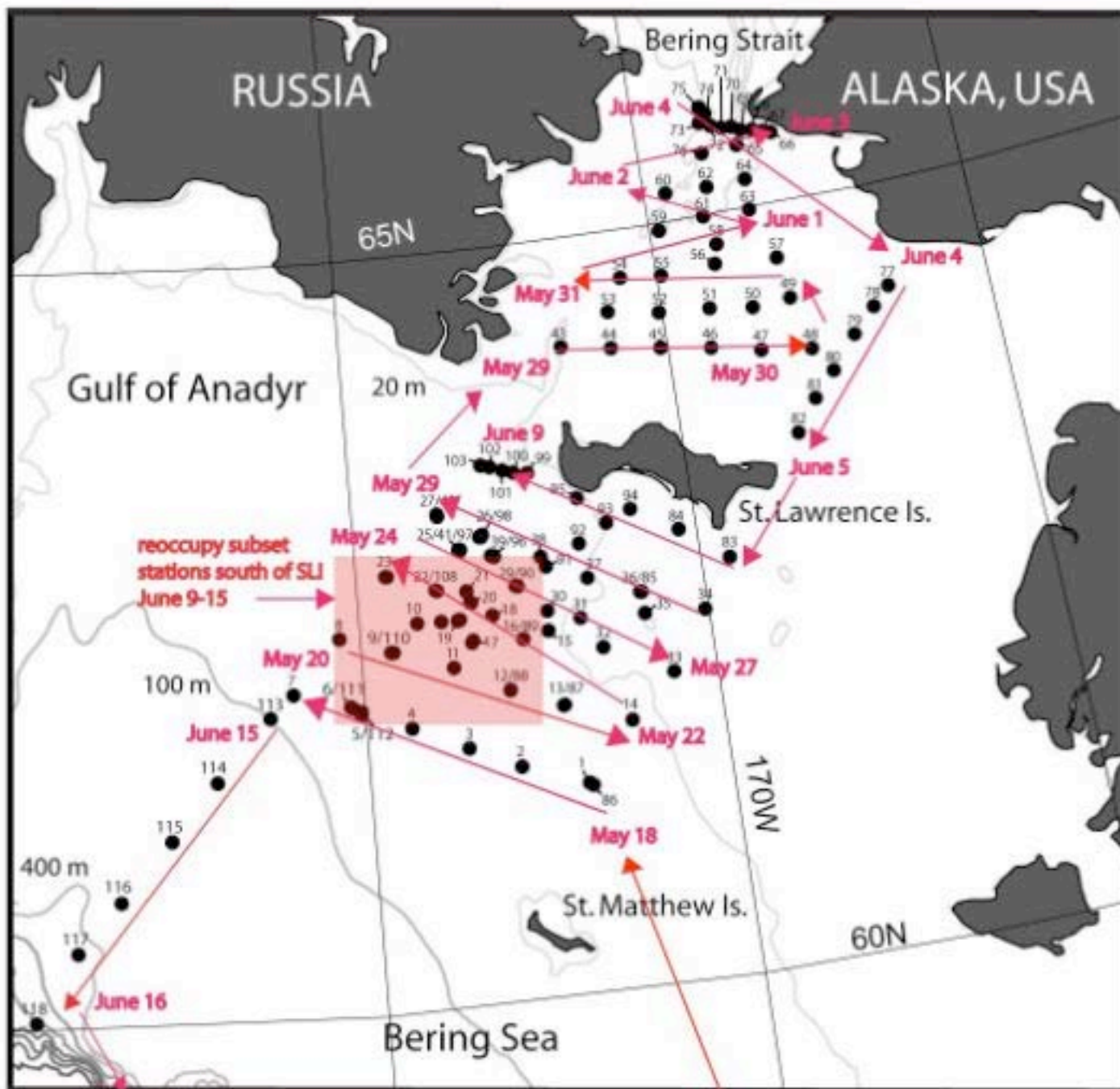


Figure 1. HLY0702 station map by cruise number and estimated dates of station occupation (red).

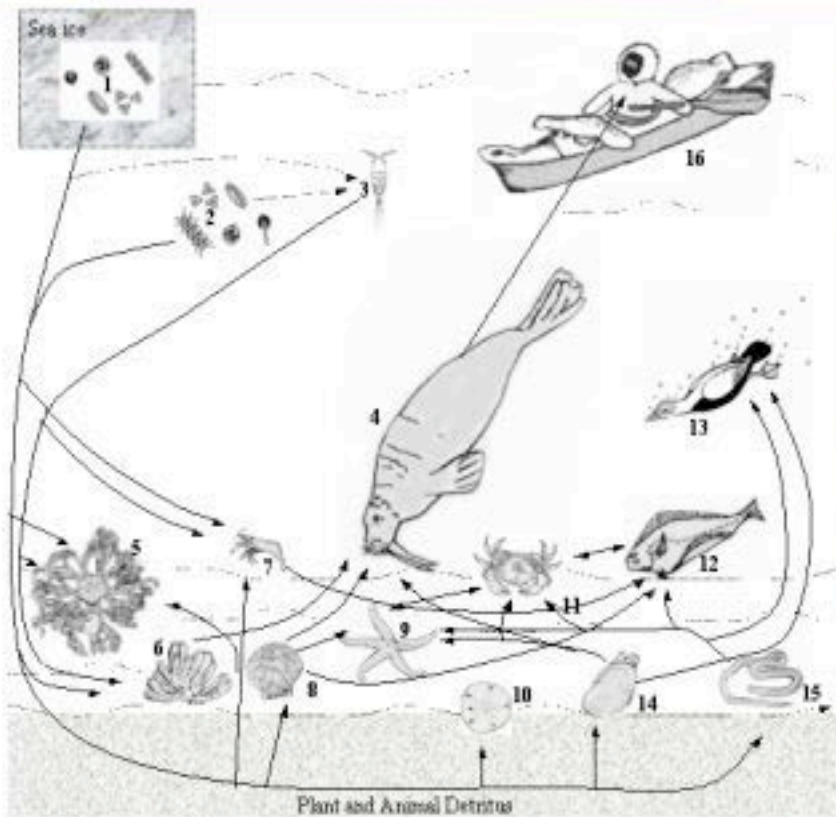
Walrus herd in the Chukchi Sea— June 2002



4



[M. Webber-USFWS]



Clam food
in walrus
stomachs



[photos courtesy G. Sheffield]

Schematic of food web in
the northern Bering and
Chukchi Seas

[Grebmeier and Dunton 2000]



[photos by J. Lovvorn]

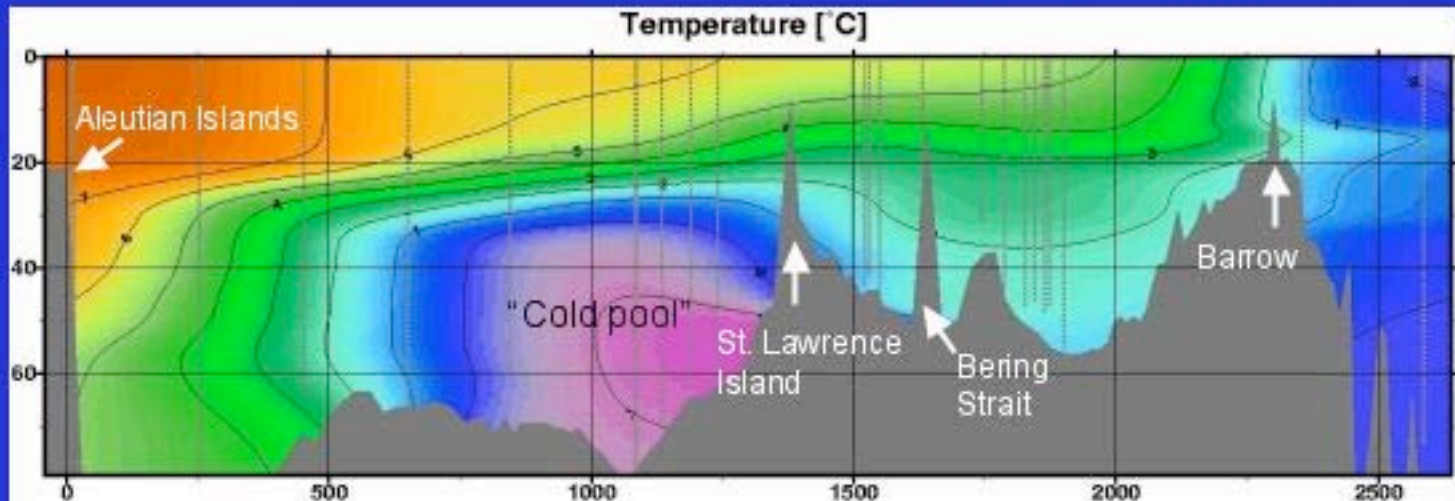


Spectacled Eider and
benthic food supply
(dominated by
bivalves: *Nuculana
radiata*, *Nucula belloti*,
Macoma calcareo)



USCGC Healy

CTD (conductivity-temperature-depth) instrument, plus rosette bottles to collect seawater







HAPS Coring system

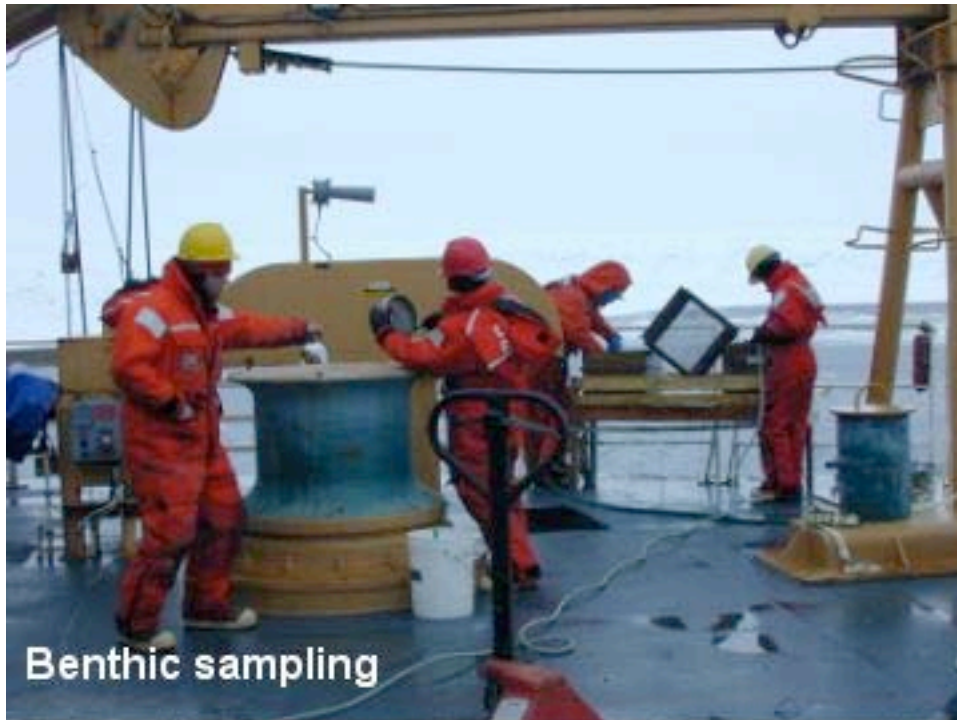
133 cm² core designed for shipboard measurement of gas exchange, particularly oxygen respiration, over bottom sediments



8

0.1 m² van Veen grabs for benthic macrofaunal collections





Benthic sampling



Sipunculid worm



Benthic worm



Benthic clams



Crabs and snails from bottom trawl

Bottom-feeding fish (flatfish, sculpins)

Prey: benthic fauna, fish





(courtesy Karen Frey)

Bearded seal

Any questions?

Check out and register for upcoming events!



www.polarrec.com

*Thank
You!*



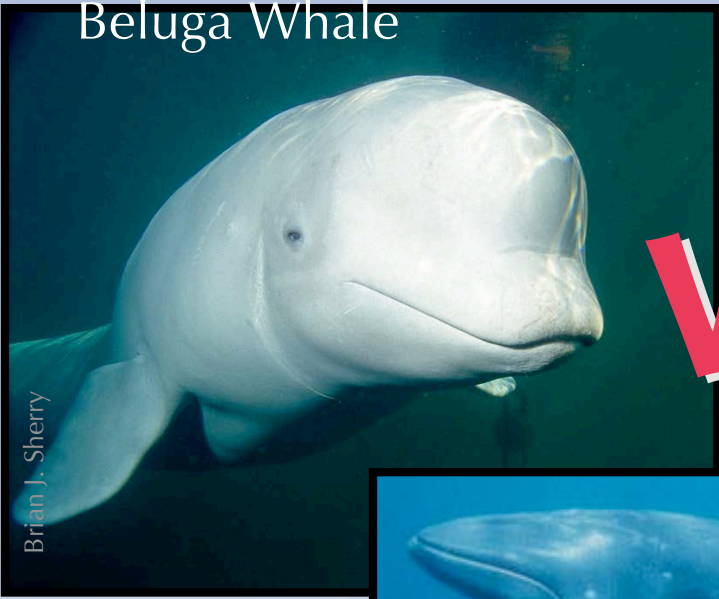
*If you have further questions,
please contact us at
info@polartrec.com or call
1-907-474-1600*



FILLER SLIDES

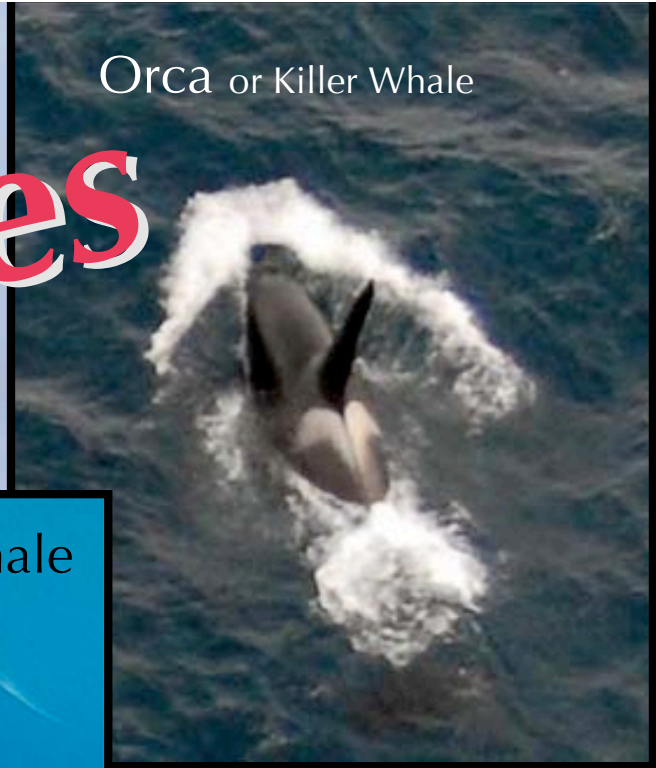
After this point.

Beluga Whale



Brian J. Sherry

Orca or Killer Whale



Whales

Minke Whale



Reef Teach

Humpback Whale



NOAA



Sea World

Seals

Bearded Seal



NOAA

Ringed Seal



Univ. of Alaska

Spotted Seal



Univ. of Alaska

Ribbon Seal



NOAA

Walrus



Univ. of Oregon

Polar Bears

Can you find the
Polar Bear?



Common
Murre

USFWS



Sea Birds

Clavin Brady



Laysan Albatross

Spectacled Eider

USFWS



USFWS

Northern Fulmar

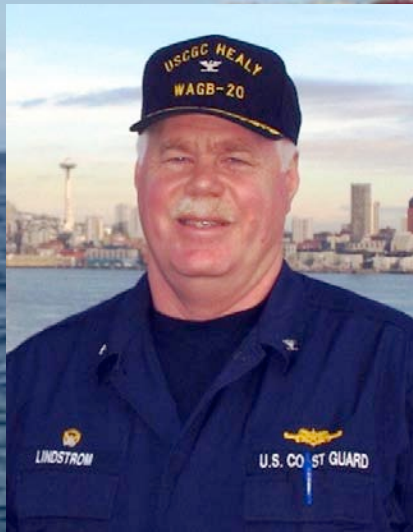
Herring Gull

USFWS



The US Coast Guard Cutter Healy

- 420 Feet long, longer than a football field!
- Home port: Seattle, WA
- Can break through ice up to 7 feet thick!
- Captain Ted Lindström



Breaking Ice



