

# Welcome to Live from IPY!



With Gerty Ward and the  
Team onboard the CCGC  
Louis S. St-Laurent in the  
Beaufort Sea

**August 20, 2008**

9:00 AM Alaska Daylight Time [7:00 AM HDT, 10:00  
AM PDT, 11:00 AM MDT, 12:00 PM CDT, 1:00 PM EDT]



Slides will be shown here

# Welcome to HorizonWimba

If using VOIP, press here to talk



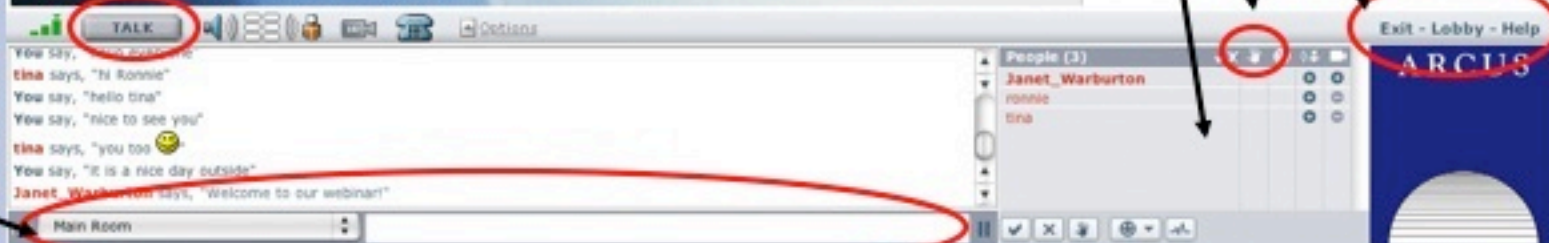
Arctic Research Consortium of the United States

List of all participants

Raise your hand to ask a question

Return to the lobby or exit

'Chat' with one person or the entire group



**Please note:** Today's event will be recorded and archived at [www.polartrec.com](http://www.polartrec.com).

# 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 over 40 teachers from around the United States will join scientists in the Arctic and Antarctic in celebration of the International Polar Year!

**[www.polar-trec.com](http://www.polar-trec.com)**

# The PolarTREC Team



**Wendy Warnick**  
PolarTREC PI  
Executive Director



**Helen Wiggins**  
Program Coordinator



**Janet Warburton**  
PolarTREC  
Project Manager



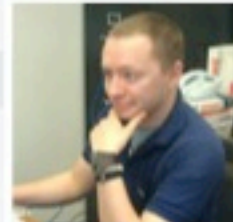
**Kristin Timm**  
PolarTREC  
Project Manager



**Ronnie Owens**  
Web Developer



**Ben Wade**  
Web Developer



**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!

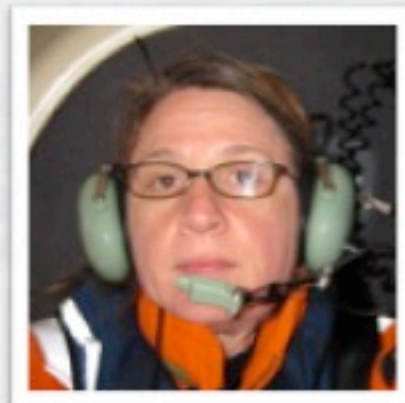
IPY is a time for discovery, science, learning, and awareness about the polar regions with activities for youth, scientists, and the public.

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

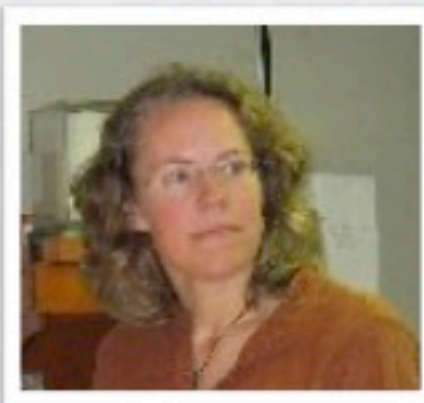
# Where is Mrs. Ward & the Team?



# Who are we talking with today?



**PolarTREC Teacher**  
**Gerty Ward**  
Durham Academy  
Durham, NC



**Chief Scientist**  
**Sarah Zimmermann**  
Department Oceans  
and Fisheries (DFO)



**Researcher**  
**Brian Hunt**  
University of British  
Columbia (UBC)



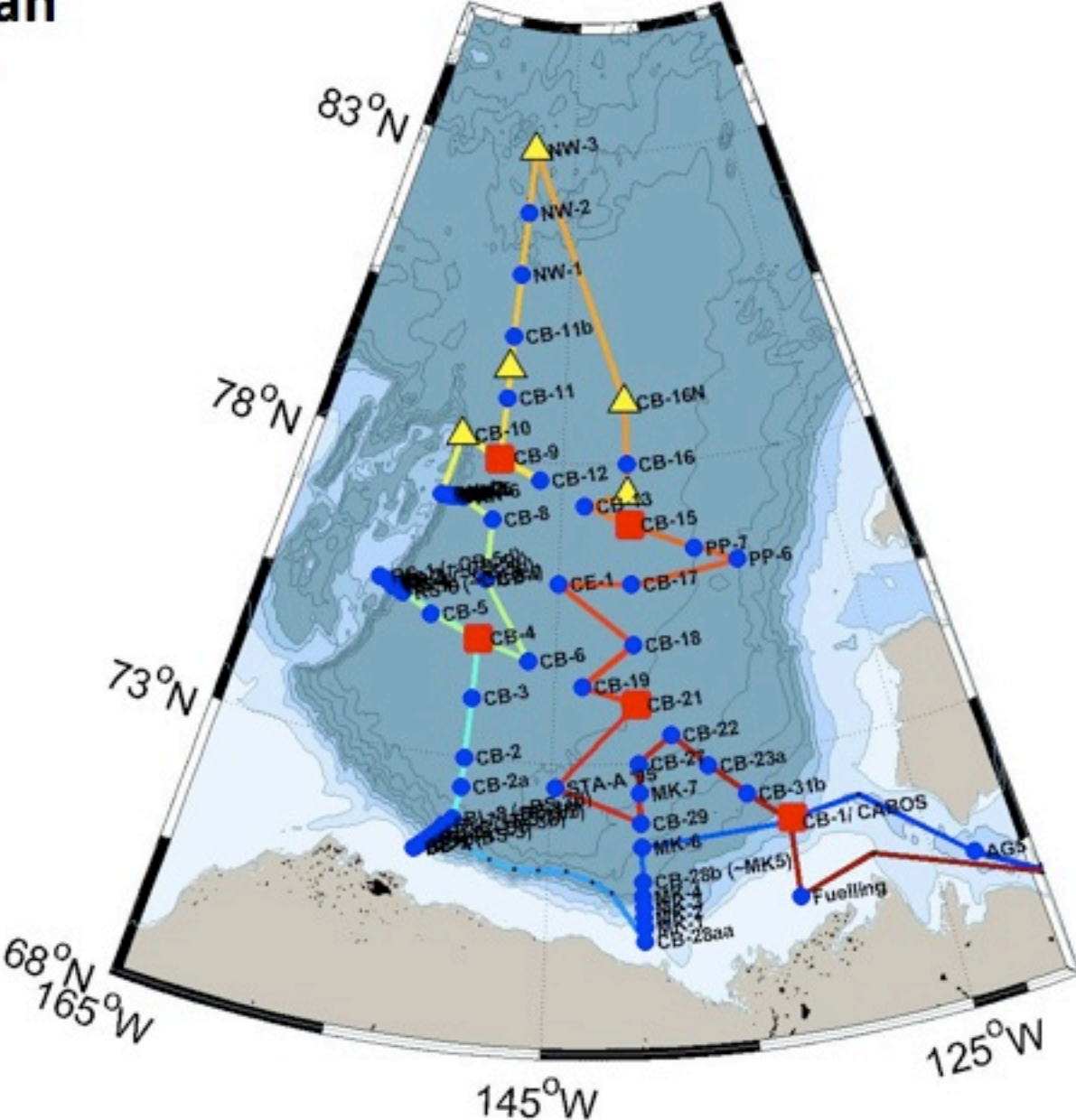
**Researcher**  
**Rich Krishfield**  
Woods Hole  
Oceanographic Institute  
Wood Hole, MA

***Please Note:*** Today's presentations are recorded.  
Gerty and the research team will be connecting to the  
live event for the question and answer session.





# Cruise Plan Stations



## **CCGC Louis S. St-Laurent**

**Class and type: Heavy Arctic Icebreaker**

**Length: 119.63 metres (392.49 ft)**

**Beam: 24.38 metres (79.99 ft)**

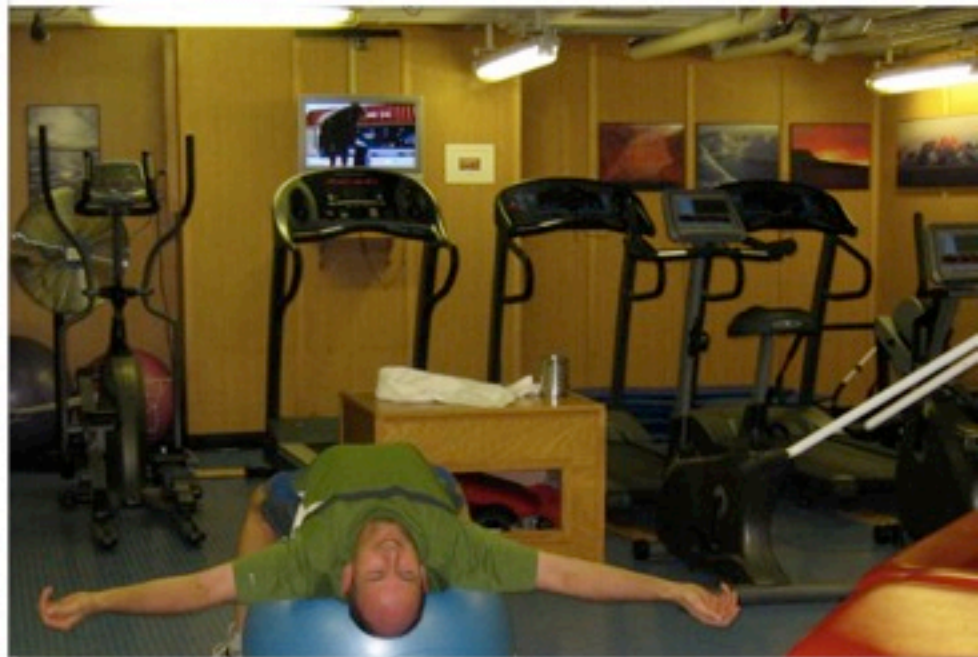
**Draught: 9.91 metres (32.51 ft)**

**Speed: 16 knots (30 km/h)**



# Science Deck





## Life on Board the LSSL



# Ocean Dynamics Beaufort Sea

Dates: July 16 – August 21, 2008

Location: Beaufort Sea

The Beaufort Gyre team will be measuring ice thickness, ocean temperature, salinity, and bottom pressure by deploying and retrieving bottom-tethered moorings. Other moorings, known as ice-tethered profilers, are attached to the sea ice to observe and broadcast ocean properties in real time.

The Beaufort Gyre Expedition is part of the Joint Ocean Ice Study being conducted on a Canadian Coast Guard Icebreaker in collaboration with scientists from the Institute of Ocean Sciences in Canada and JAMSTEC in Japan. The research team has worked in this area on annual cruises with scientists from Canada, the U.S., China, and Japan since 2003



# Introduction to the Research

This research project in the Canadian Basin has been taking place for 6 years, since 2003!

## **Areas of Study:**

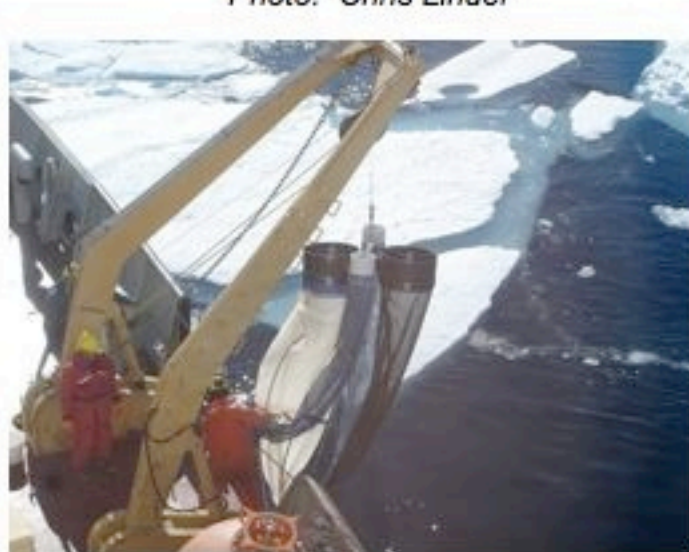
- Water Chemistry
- Ocean Circulations, Water Masses
- Zooplankton Distributions
- Ice Observations

# Collecting Data

- Moorings and Buoys
- Ice Sampling
- Nets to catch Zooplankton



*Photo: Chris Linder*



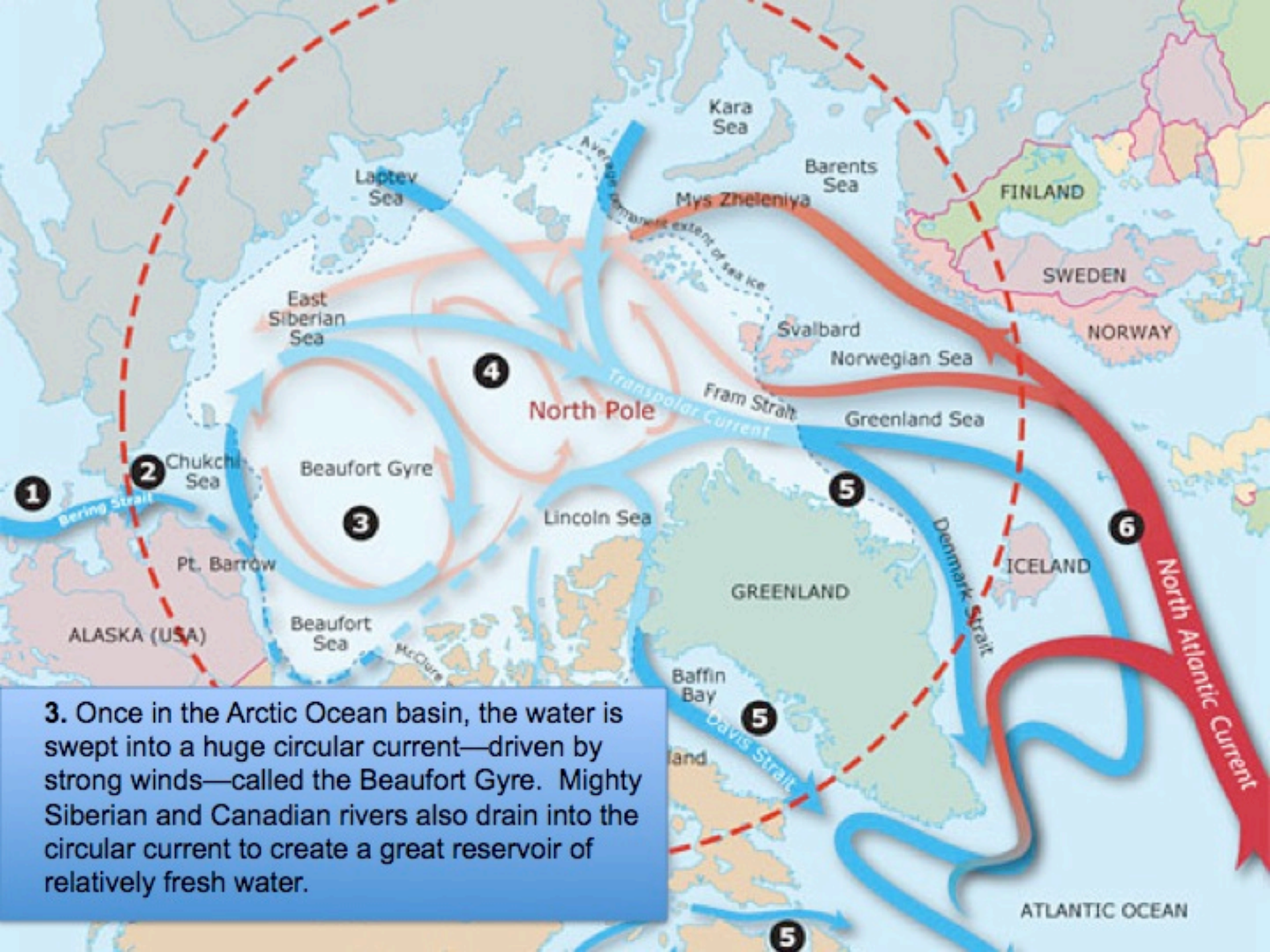
# Collecting Water for Chemistry



**CTD=**  
Conductivity  
Temperature  
Depth

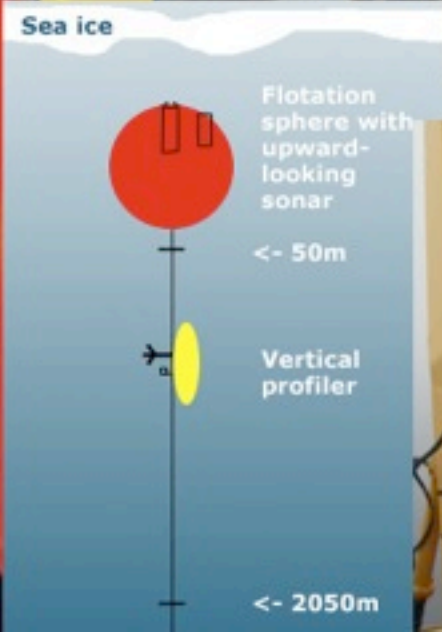




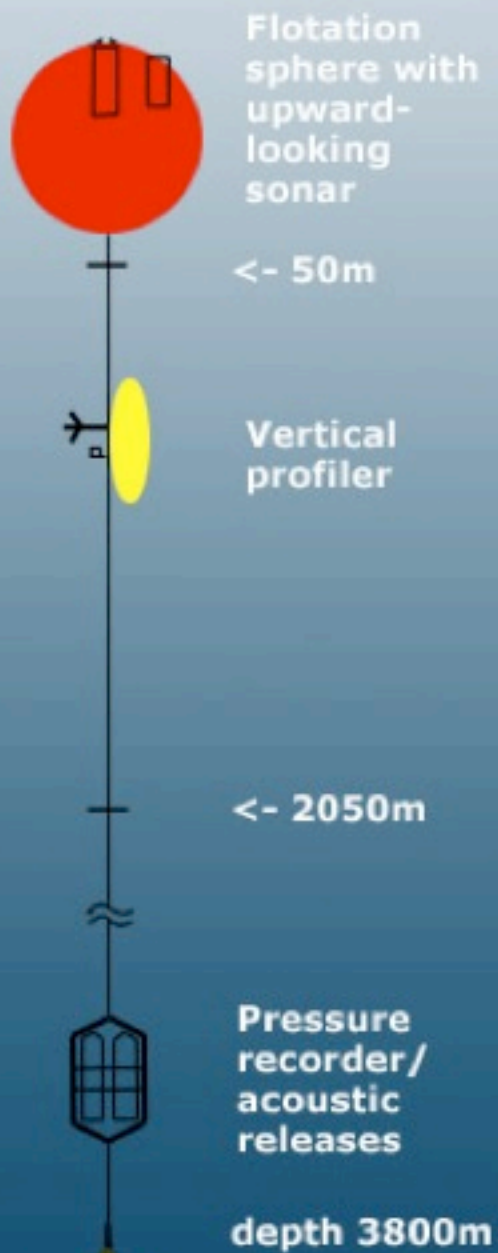


**3.** Once in the Arctic Ocean basin, the water is swept into a huge circular current—driven by strong winds—called the Beaufort Gyre. Mighty Siberian and Canadian rivers also drain into the circular current to create a great reservoir of relatively fresh water.

# Deploying a Mooring



## Sea ice

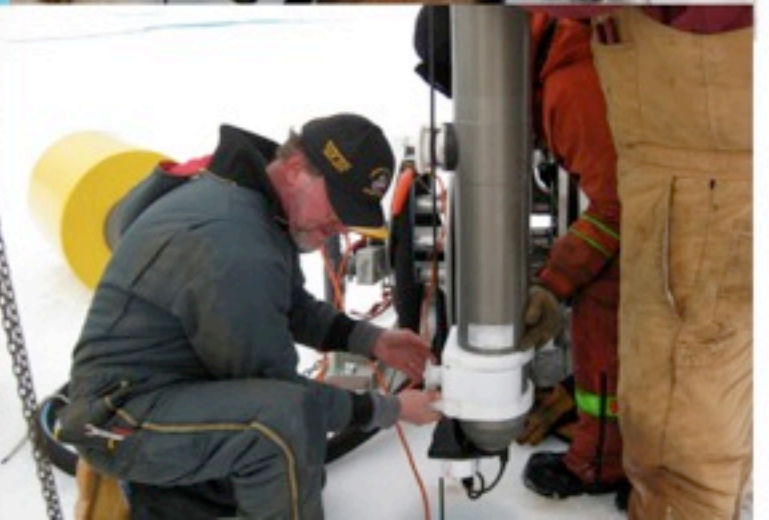
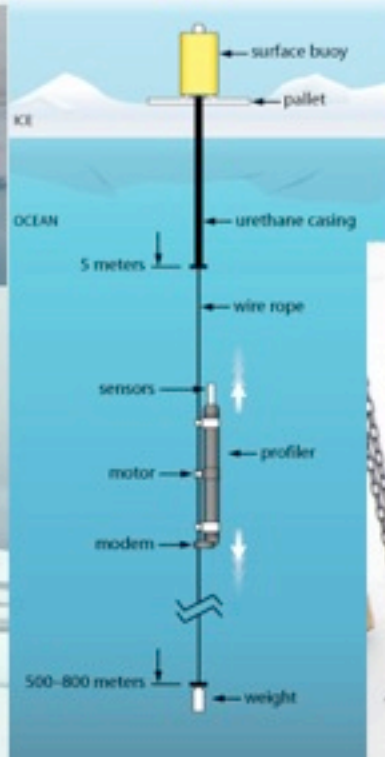
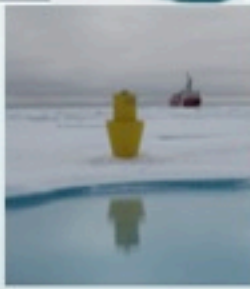
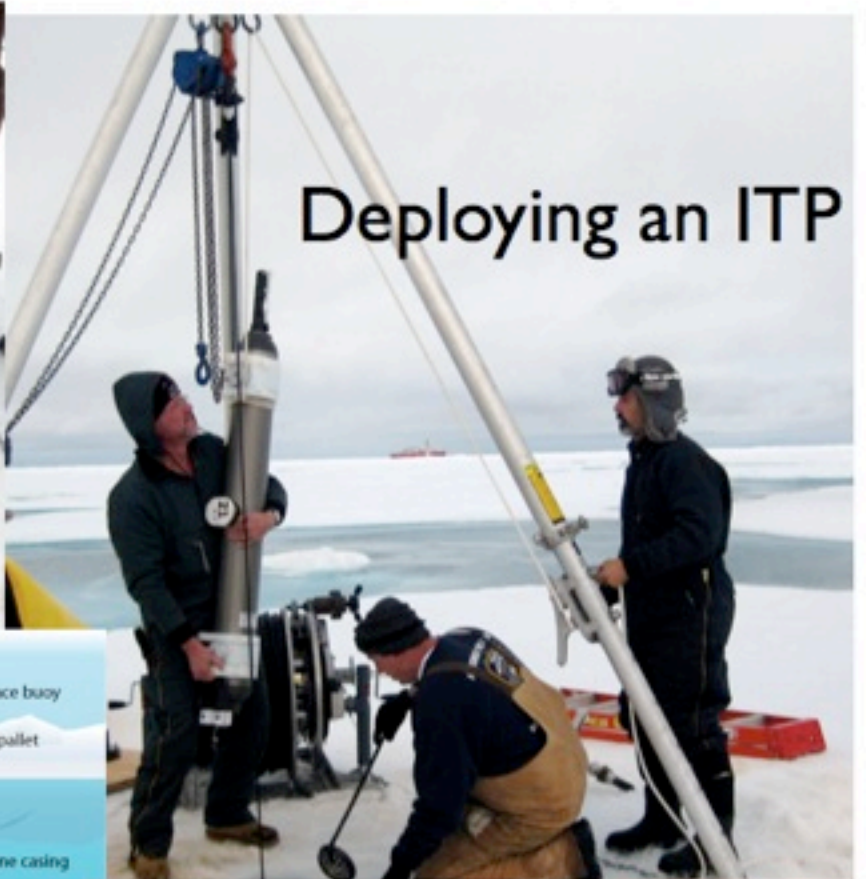




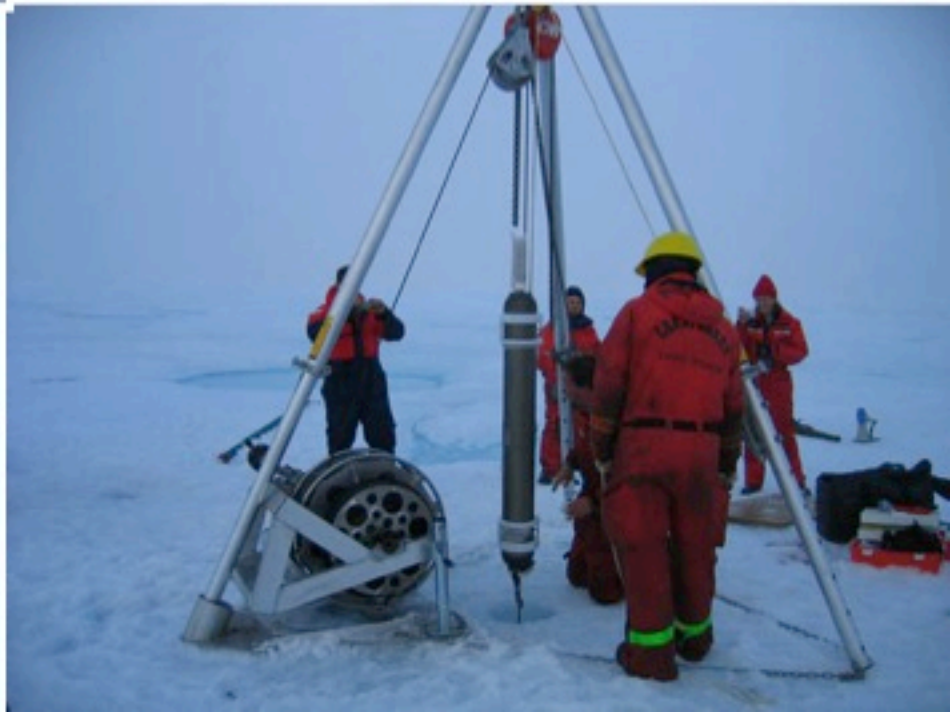
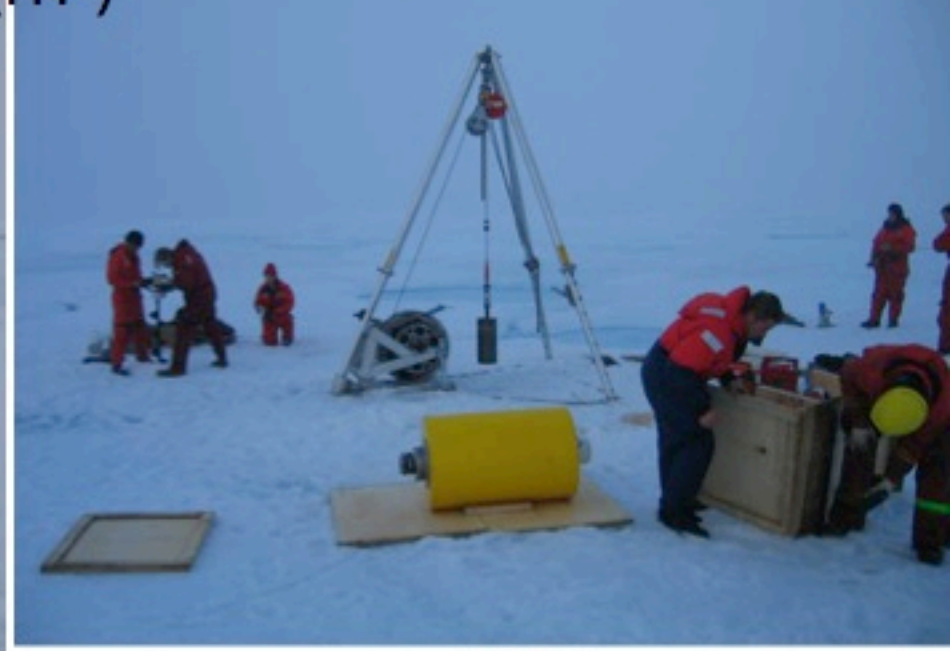
Recovering a Mooring

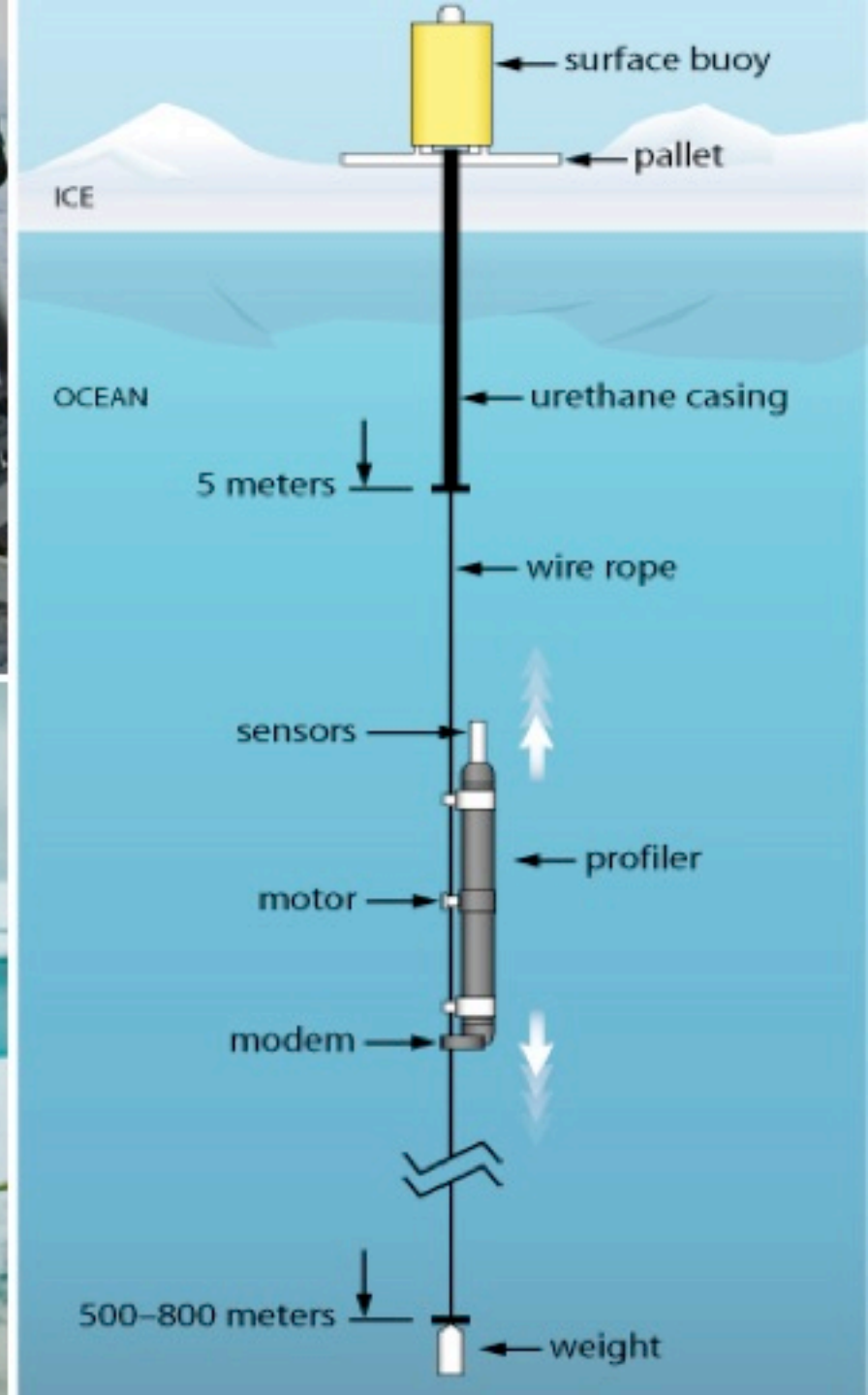
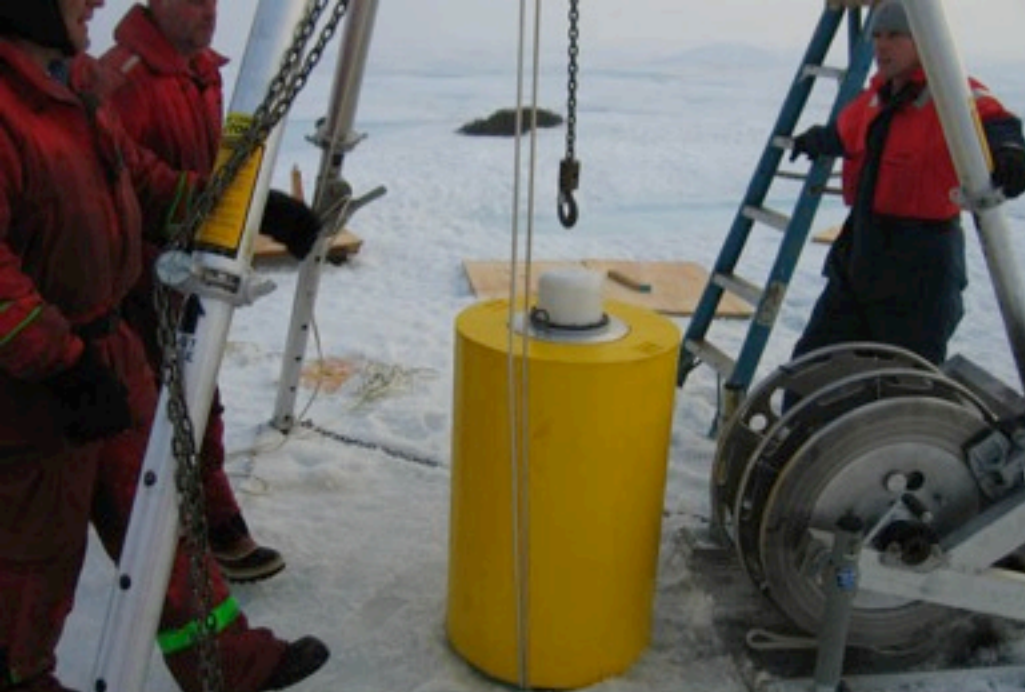


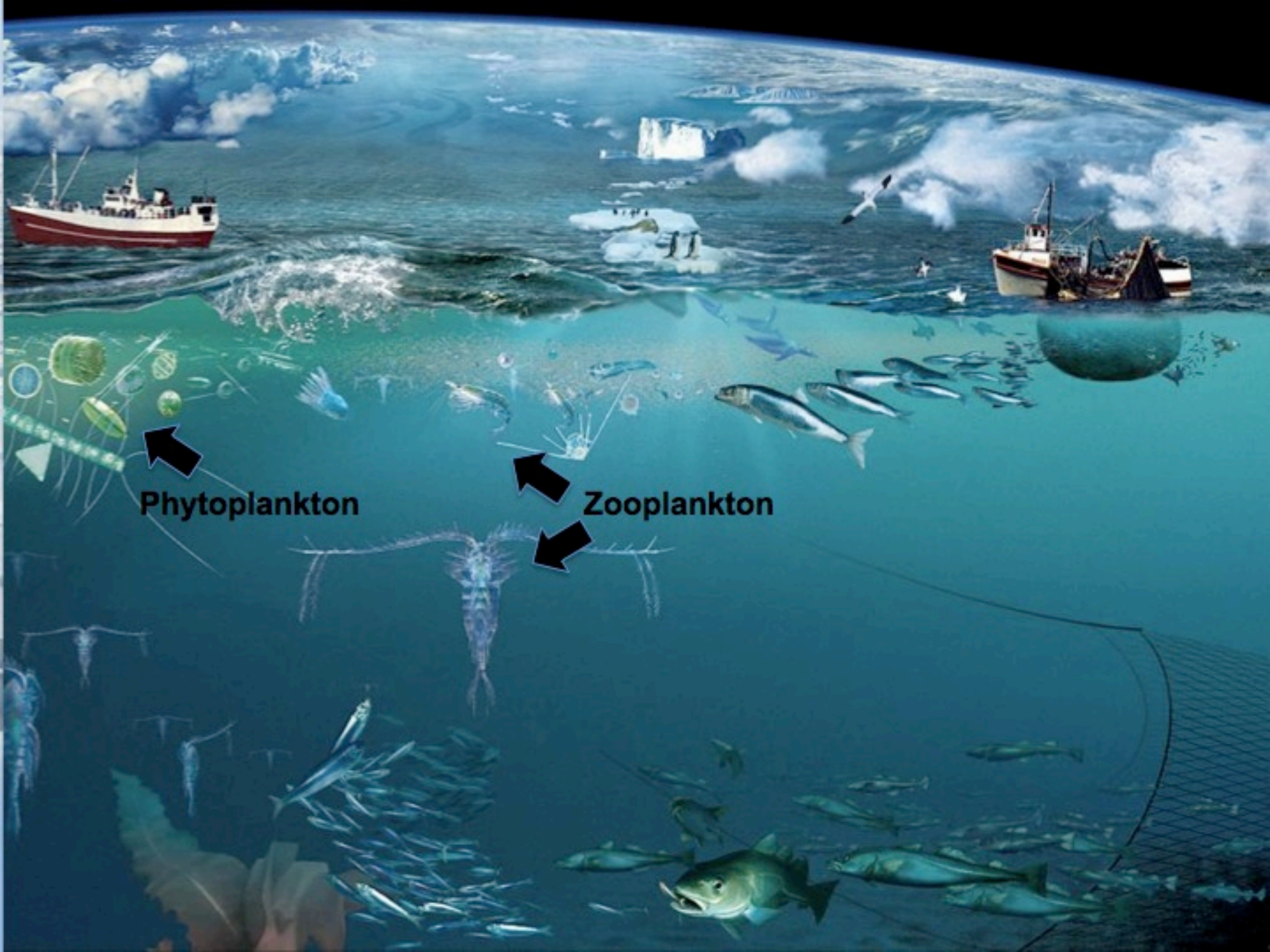
# Deploying an ITP



# Deploying an Ice-Tethered Profiler (ITP)





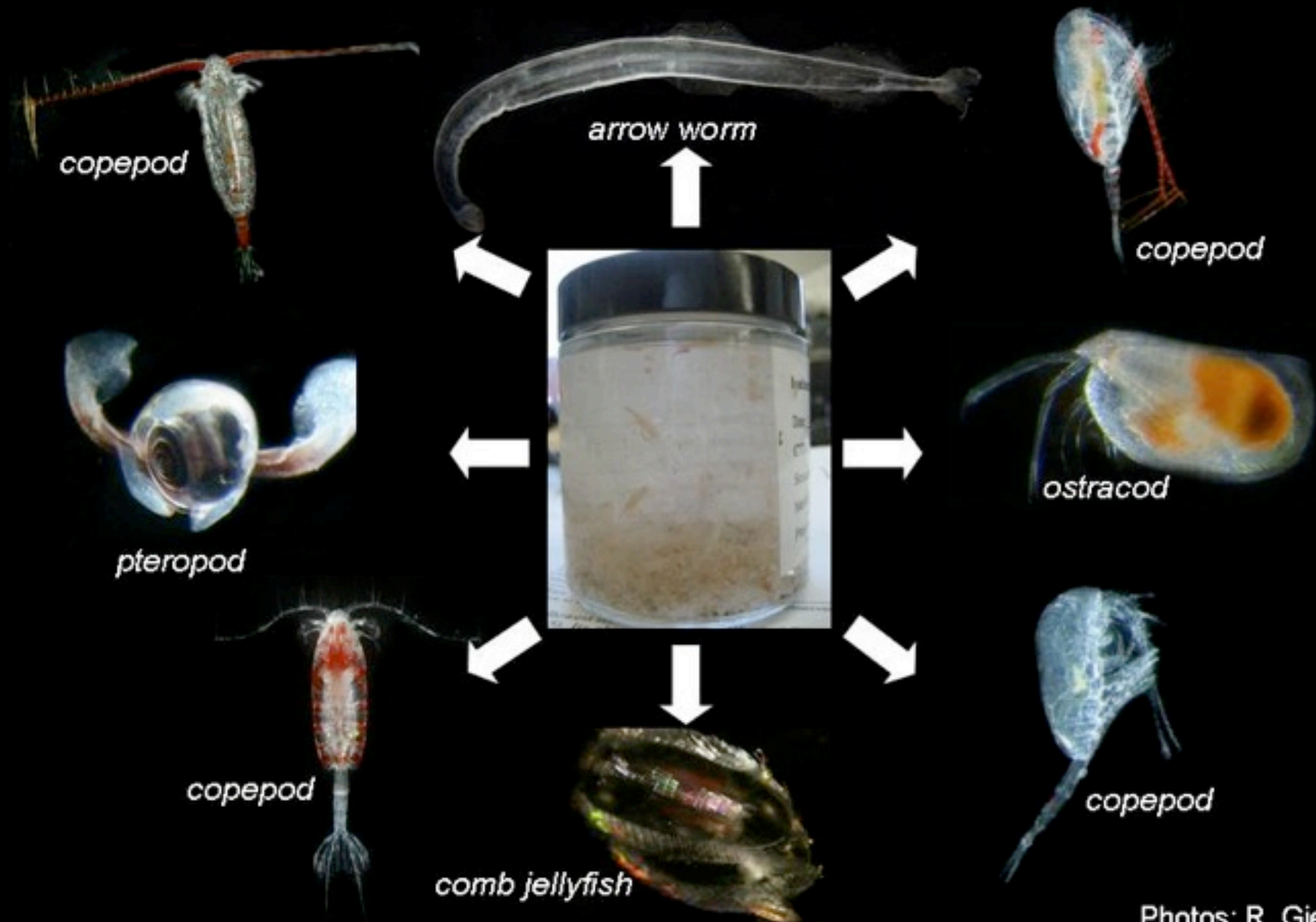


**Phytoplankton**

**Zooplankton**



# Zooplankton



# Why are we interested in Plankton?

- Essential to food chains of all oceans
- Influence the Earth's climate, take up Carbon Dioxide from atmosphere

## 2 Main Questions:

- What will the effect of ocean warming in the arctic be to ocean communities?
- What will the effect of melting sea ice be on arctic zooplankton?



Copepod (C. Linder)

# Polar Bears









Questions?





# Albedo Comparison

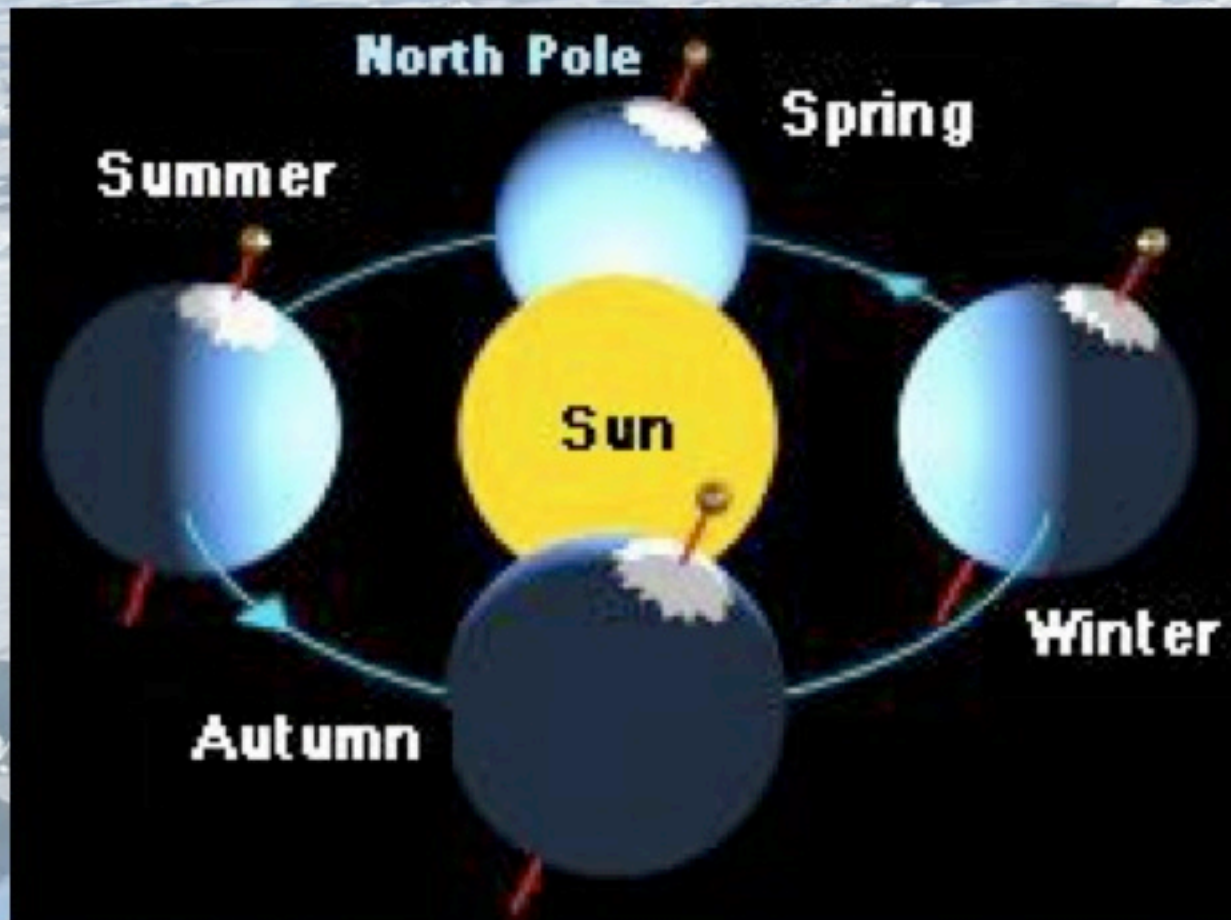
Ice tends to reflect  
solar radiation



Water tends to absorb  
solar radiation



# Sunlight in the Arctic



# Check out and register for upcoming events!



Watch for upcoming events from the Antarctic at  
[www.polarartrec.com](http://www.polarartrec.com)!

# Thank You!



For more information, please  
visit [www.polartrec.com](http://www.polartrec.com)

Or Call 907-474-1600

Email: [infr@polartrec.com](mailto:infr@polartrec.com)

