



NORTH PACIFIC RESEARCH BOARD

Arctic Program

Introduction

Arctic Icebreaker Coordinating Committee | January 2018

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Background

- Integrated Ecosystem Research Program
 - Multi-disciplinary
 - Scientists work together for five years to study ecosystem processes
 - Includes Local & Traditional Knowledge



Background

- Funding partners: North Pacific Research Board, Bureau of Ocean Energy Management, North Slope Borough/Shell Baseline Studies Program, Office of Naval Research Marine Mammals and Biology Program
- In-kind support from National Oceanic & Atmospheric Administration, University of Alaska Fairbanks, National Science Foundation, and U.S. Fish & Wildlife Service
- \$18.6 million investment 2016-2021



Participants

- 27 scientists from 11 institutions
- 22 collaborating projects



Overarching question

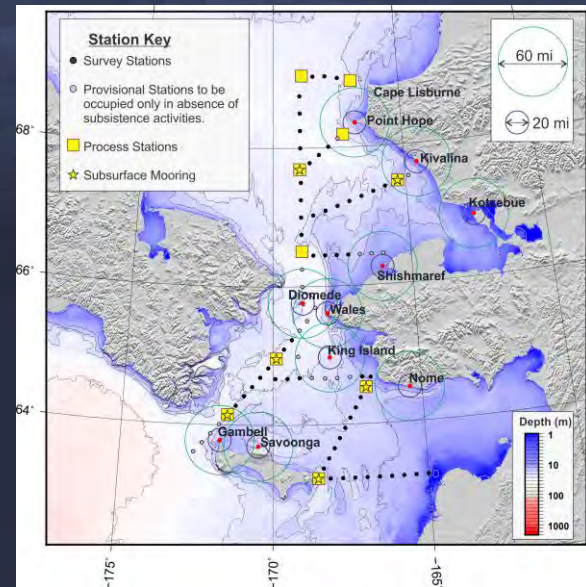
How will reductions in Arctic sea ice and the associated changes in the physical environment influence the flow of energy through the ecosystem in the Chukchi Sea that influence:

- Transport, seasonal composition, distribution, and production of phytoplankton, particulate matter, zooplankton, fishes, benthic invertebrates, seabirds, and marine mammals
- Timing, magnitude and fate of the primary and secondary productivity
- Partitioning/flux of energy between pelagic and benthic realms
- Distribution, condition, and standing stocks of large crustacean zooplankton that serve as the prey base for upper trophic level fishes and seabirds
- Assemblages, distributions, abundances, and condition of larval and early juvenile fishes that influence the recruitment success of later life stages
- Density of marine mammals and seabirds
- Human use of and interaction with the marine environment

Scope

- UAF cruises aboard vessel *Sikuliaq* in northern Bering and southern Chukchi Seas in June 2017 & 2018

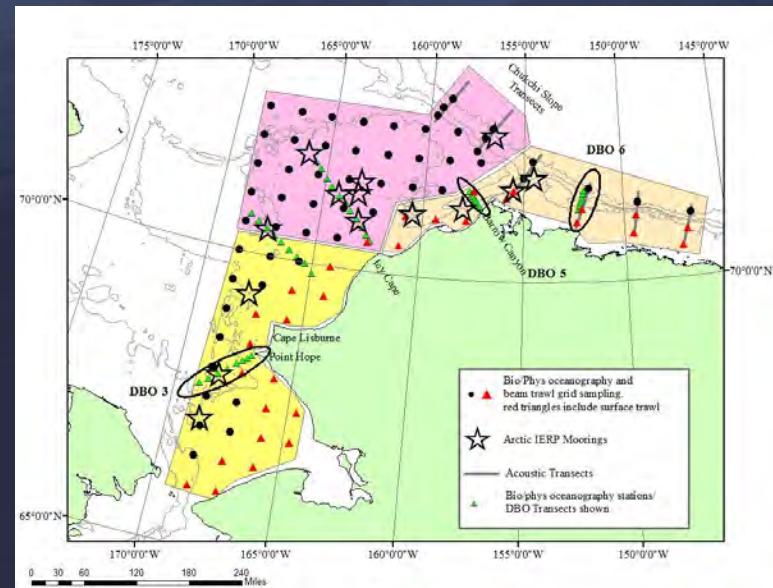
Focus on rate process measurements, physical, chemical, biological oceanography; fish sampling



Scope

- NOAA cruises aboard *Ocean Starr* in Beaufort & Chukchi Seas in August – October 2017 & 2019

Focus on factors driving the distribution of fish, especially Arctic & saffron cod, and pink and chum salmon



Scope

- Acoustic recorders on moorings in Bering Strait and southern Chukchi Sea
- Social science study on Chukchi Coastal Communities' Understanding of and Responses to Environmental Change

Communication

- Hub meetings prior to operations
- Marine radio updates every 6 hours
- Daily email reports from vessels
- Social media
- Reports at stakeholder meetings before and after field operations
- Cruise report distribution

Blog and social media

The screenshot displays the website for the North Pacific Research Board Arctic Program. At the top, there is a navigation menu with options: NPBR HOME, CORE PROGRAM, LONG TERM MONITORING PROGRAM, GRADUATE STUDENT RESEARCH AWARDS, ARCTIC PROGRAM (highlighted), BERING SEA PROJECT, and GULF OF ALASKA PROJECT. A search bar is located in the top right corner. Below the navigation is a banner image of an Arctic ice floe with the text "NORTH PACIFIC RESEARCH BOARD Arctic Program". A secondary navigation bar includes links for ABOUT THE PROGRAM, FIELD BLOG (highlighted), PRELIMINARY RESULTS, RESOURCES FOR INVESTIGATORS, REQUEST FOR PROPOSALS, EVENTS & MEETINGS, and NEWS. The main content area features a "Field Blog" section with a featured article titled "STUDYING A CHANGING ARCTIC" and a button to "Arctic Program Enter Blog". Below this is a "Social Media: Stay Connected!" section with icons for Twitter, Facebook, Instagram, and YouTube. A footer note states: "The NPRB Arctic Program will be posting regularly to Facebook, Twitter, Instagram, and the official blog site throughout the program. Be sure to follow (like) the channels below."



www.nprb.org/arctic-program

Preliminary Results

NORTH PACIFIC RESEARCH BOARD

Search SEARCH

INTEGRATED ECOSYSTEM RESEARCH PROGRAM

[NPRB HOME](#) [CORE PROGRAM](#) [LONG TERM MONITORING PROGRAM](#) [GRADUATE STUDENT RESEARCH AWARDS](#) **[ARCTIC PROGRAM](#)** [BERING SEA PROJECT](#) [GULF OF ALASKA PROJECT](#)

[ABOUT THE PROGRAM](#) [FIELD BLOG](#) **[PRELIMINARY RESULTS](#)** [RESOURCES FOR INVESTIGATORS](#) [REQUEST FOR PROPOSALS](#) [EVENTS & MEETINGS](#) [NEWS](#)

Photo Credit: Brendan Smith/NPRB

Preliminary Results

Photo credit: Brendan Smith/NPRB

Preliminary Results

Principal Investigators will share a selection of their preliminary results here throughout the course of the research program. These preliminary results may also be shared at scientific conferences and at meetings of stakeholder groups, including the Arctic Waterways Safety Committee and marine mammal co-management organizations. Final results will be published in reports and peer-reviewed articles, and links to those will be provided as they are published.

[2017 ASGARD Cruise Report](#) [2017 ASGARD Community Observer Report](#)

[2017 AIES Cruise Report](#)



Integrated Work Plan

- Document describes the scope of the program, including specific hypotheses and cruise plans.

The screenshot displays the Arctic Program website's navigation and content. The top navigation bar includes links for NPRB HOME, CORE PROGRAM, LONG TERM MONITORING PROGRAM, GRADUATE STUDENT RESEARCH AWARDS, ARCTIC PROGRAM (highlighted), BERING SEA PROJECT, and GULF OF ALASKA PROJECT. Below this is a secondary menu with ABOUT THE PROGRAM (highlighted), REQUEST FOR PROPOSALS, RESOURCES FOR INVESTIGATORS, EVENTS & MEETINGS, and NEWS. A breadcrumb trail shows: BACKGROUND > RESEARCH IMPORTANCE > SCIENCE FOCUS > INTEGRATED WORK PLAN > OVERALL GOAL > STUDY REGIONS > PROGRAM HISTORY. The main content area features a purple button labeled '+ SPECIFIC RESEARCH AREAS OF INTEREST'. Below this, there are two columns of text. The left column, titled 'What We are Studying', describes the program's integration of observations from 2017 to 2019 to understand the impact of reduced Arctic sea ice on the marine ecosystem, mentioning sampling on the R/V Sikuliaq. The right column, titled 'Integrated Work Plan', explains that the plan was developed by Principal Investigators to outline the scientific direction and study design, including field measurements and collaboration opportunities.



Collaboration & Coordination

- Annual Principal Investigator Meetings
March 6-8, 2018 in Anchorage, Alaska – new collaborators welcome
- Logistics meetings prior to field operations
- Coordination with Interagency Arctic Research Policy Committee Marine Ecosystems Collaboration Team



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