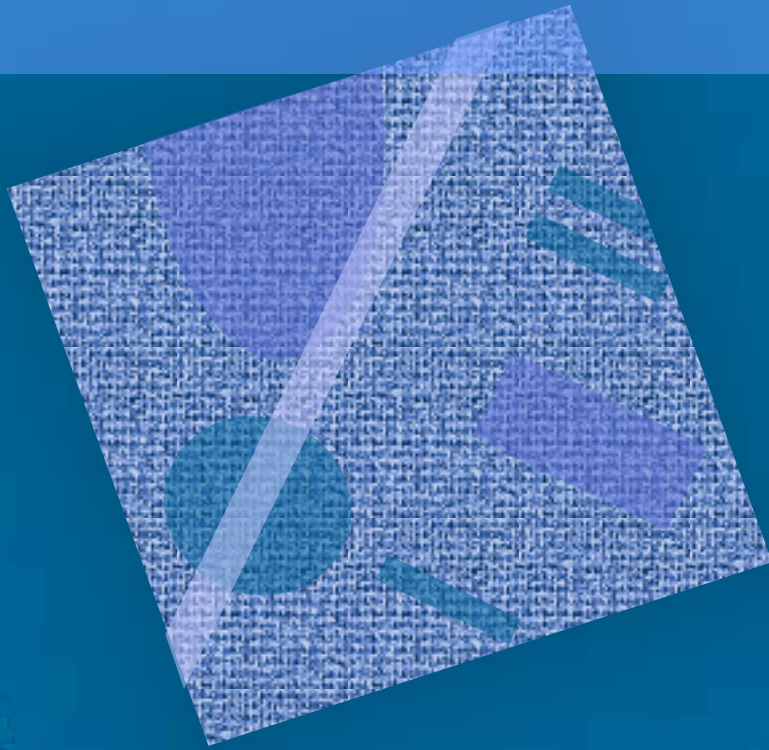


Arctic Open Water Meeting: MMS Studies Update



Dr. Dee Williams
Chief, Environmental Studies
MMS Alaska OCS Region

Outline

- Announcements
- Keystone Arctic Projects
- FY11 Prospects

<www.mms.gov/alaska/ess/index.htm>

Studies webpage

Environmental Studies Program, Alaska OCS Region

MMS	Home	Search	Site Map	About MMS	What's New	U.S. Department of the Interior
	Minerals Management Service Alaska OCS Region					

- [Upcoming Events](#)
- [Current Activities](#)
- [Reading Room](#)

- [Environmental Studies](#)
- [Leasing Activities](#)
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- [Alaska Native Links](#)
- [Shipwrecks](#)
- [Kids Corner](#)

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Questions?
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[Alaska Region Public Information](#)

This page last updated:
10/21/2009

Environmental Studies Section

The Minerals Management Service (MMS) Environmental Studies Program began in 1973 as a means to gather and synthesize environmental, social, and economic information to support decision making for the offshore oil and gas program. Since its beginning, the National Environmental Studies Program has contracted for more than \$600 million dollars of studies throughout the coastal zone of the continental United States. These funds have supported studies of all aspects needed for a thorough understanding of the complex nature of the Alaskan Outer Continental Shelf and have aided in the wise protection of its valuable resources. The MMS uses information from the studies program in evaluating potential environmental problems associated with all levels of oil and gas activities.

[Alaska Annual Studies Plan FY 2010](#)

[Alaska Region Ongoing Studies Descriptions](#)

[Aerial Surveys of Endangered Whales - Bowhead Whale Aerial Survey Program \(BWASP\)](#)

[Coastal Marine Institute Annual Reports](#)

[Table Listing of Ongoing Studies](#)

[Table Listing of Completed Studies](#)

[Results of Completed Studies Available on the Web](#)

[Environmental Studies Program Information System \(ESPIS\)](#)

[Proceedings of Alaska Region Information Transfer Meetings](#)

[Information of Interest to Offerers](#)

[Links to Other MMS Environmental Studies Sites](#)

[International Polar Year 2007 - 2008](#)

[Poster Presentations](#)

New Technical Reports:

- *cANIMIDA Annual Assessment of Subsistence Bowhead Whaling near Cross Island, 2001-07 (2009-038)*
- *cANIMIDA Hydrocarbon and Metal Characterization of Sediments (2010-004)*
- *cANIMIDA Integrated Biomonitoring and Bioaccumulation of Contaminants (2009-037)*
- *cANIMIDA Long-term Monitoring of Kelp Community in the Stefansson Sound Boulder Patch (2009-040)*
- *Circulation and Water Property Variations in the Nearshore Alaskan Beaufort Sea (1999-2007) (2009-035)*

- *Subsistence Mapping of Nuiqsut, Kaktovik, and Barrow (2009-003)*
- *Traditional Knowledge Regarding Bowhead Whales in the Chukchi Sea*

Project Data Dissemination

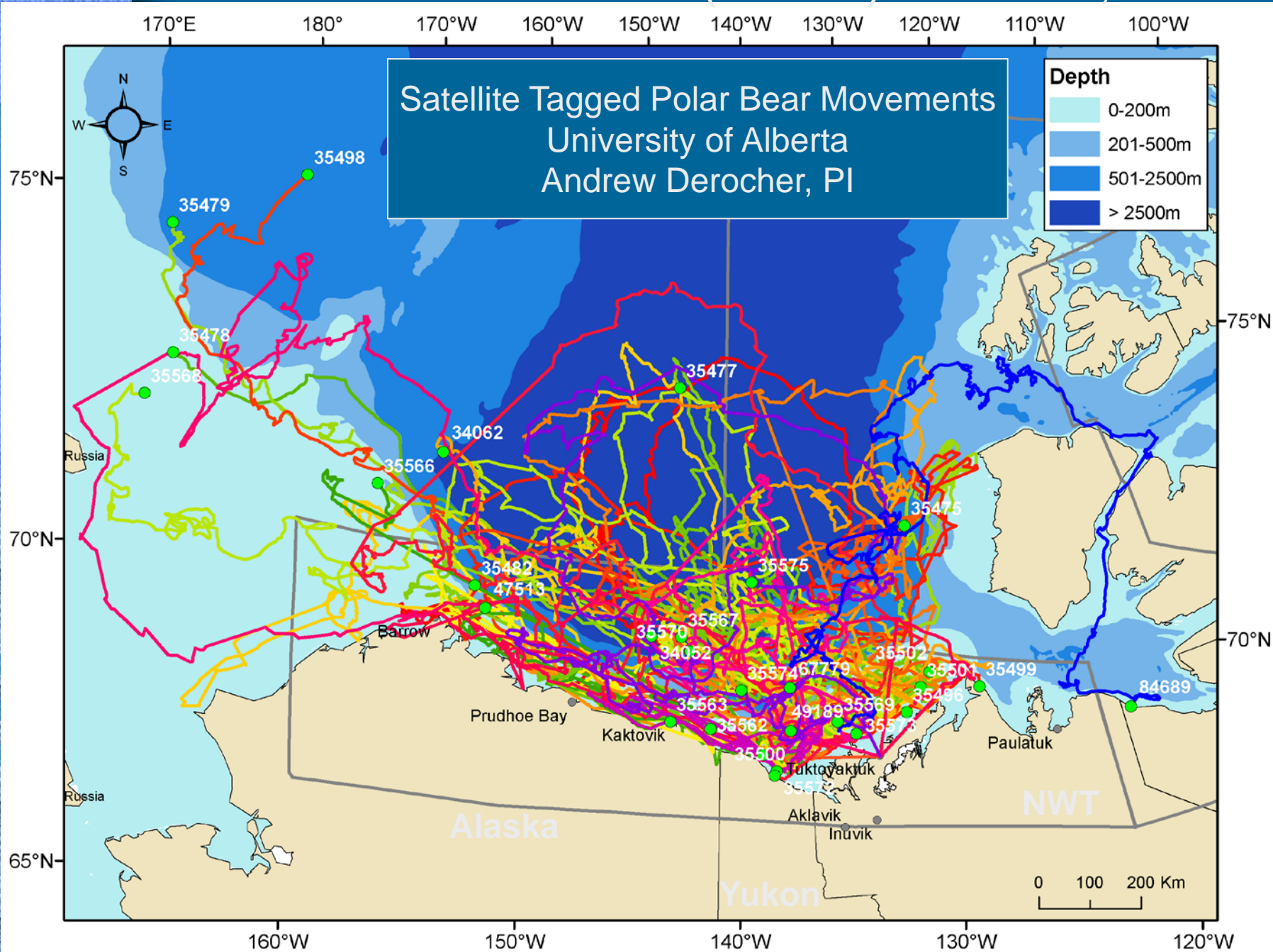
- ANIMIDA – document/data website
<www.duxbury.battelle.org/cANIMIDA>
- MMS Data Web Portal (forthcoming)
- Geographic Information Network of Alaska
<www.gina.alaska.edu/projects/nssi-catalog>
- Project Browsers (AON/SAON)

Keystone Marine Mammal Projects

(presented at AK Marine Science Symposium)

- **NMFS:**
 - aerial surveys; whale feeding variability; passive acoustic detection and monitoring; bearded seals (with NVOK)
- **ADFG:**
 - bowhead tagging (with AEWC); walrus tagging (with AWC)
- **USGS:**
 - polar bear demography

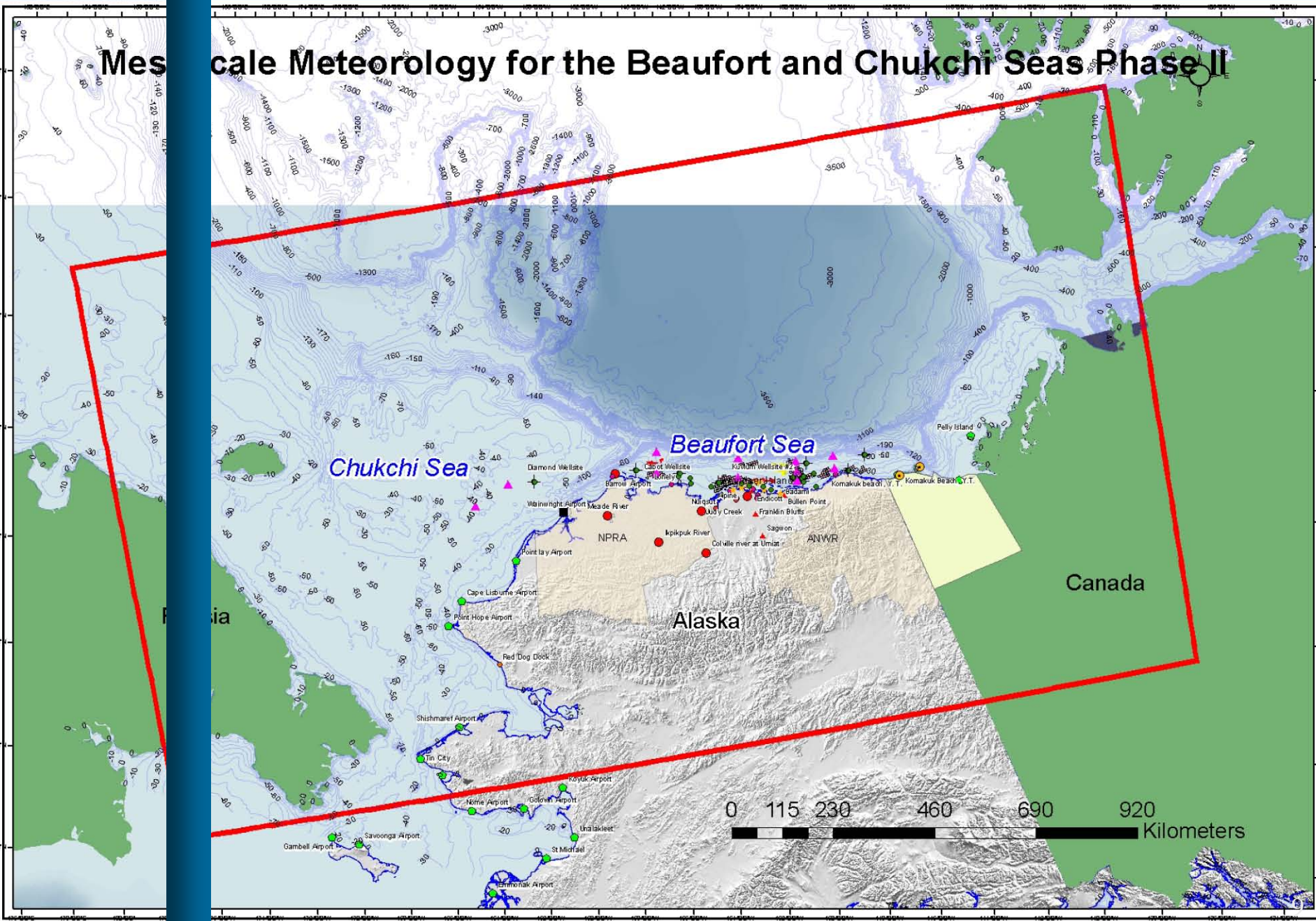
2007 & 2008 Collars (n = 29) – Jan 11, 2009

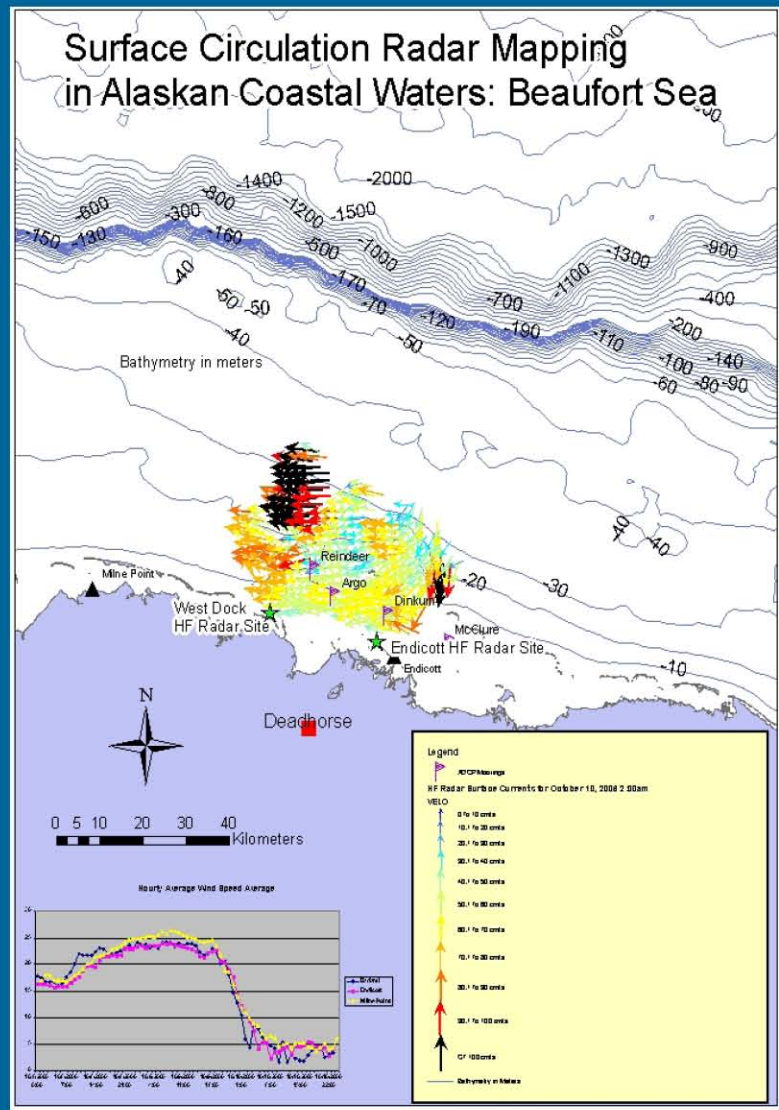
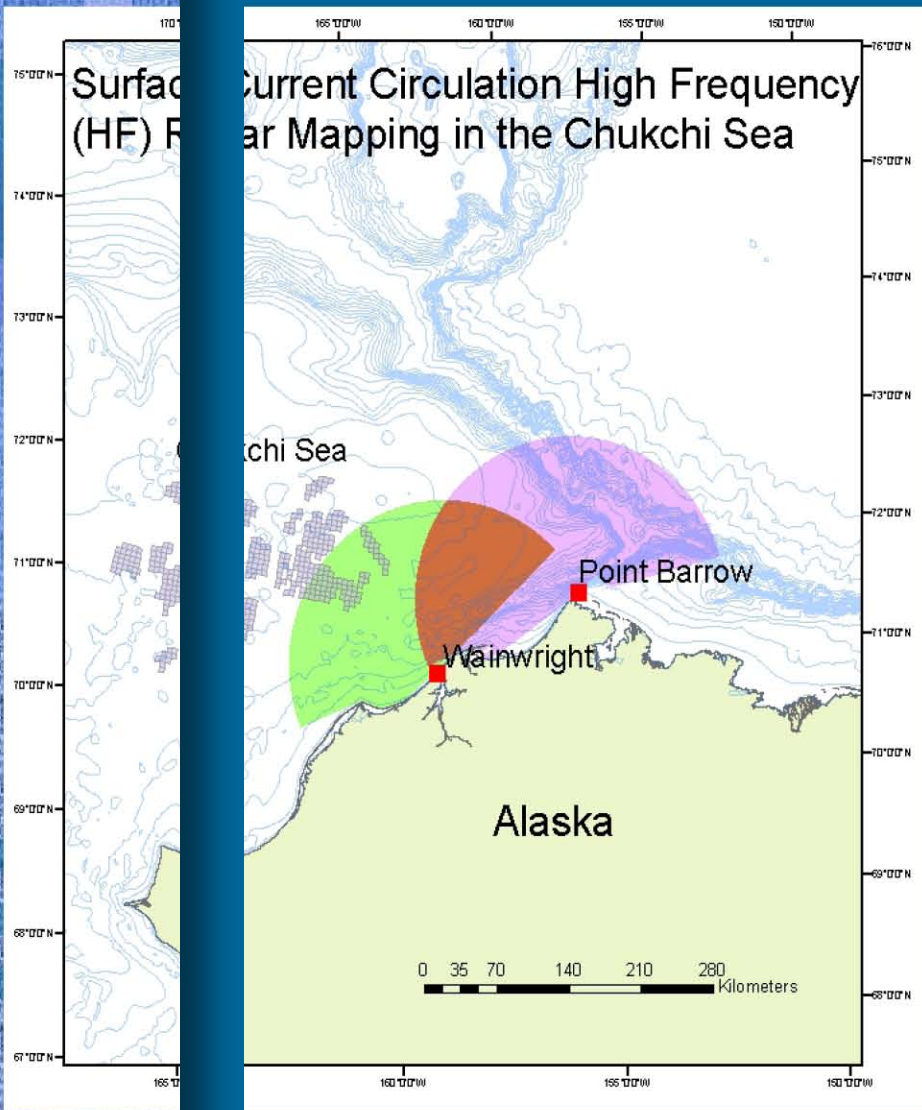


Keystone Oceanographic Projects

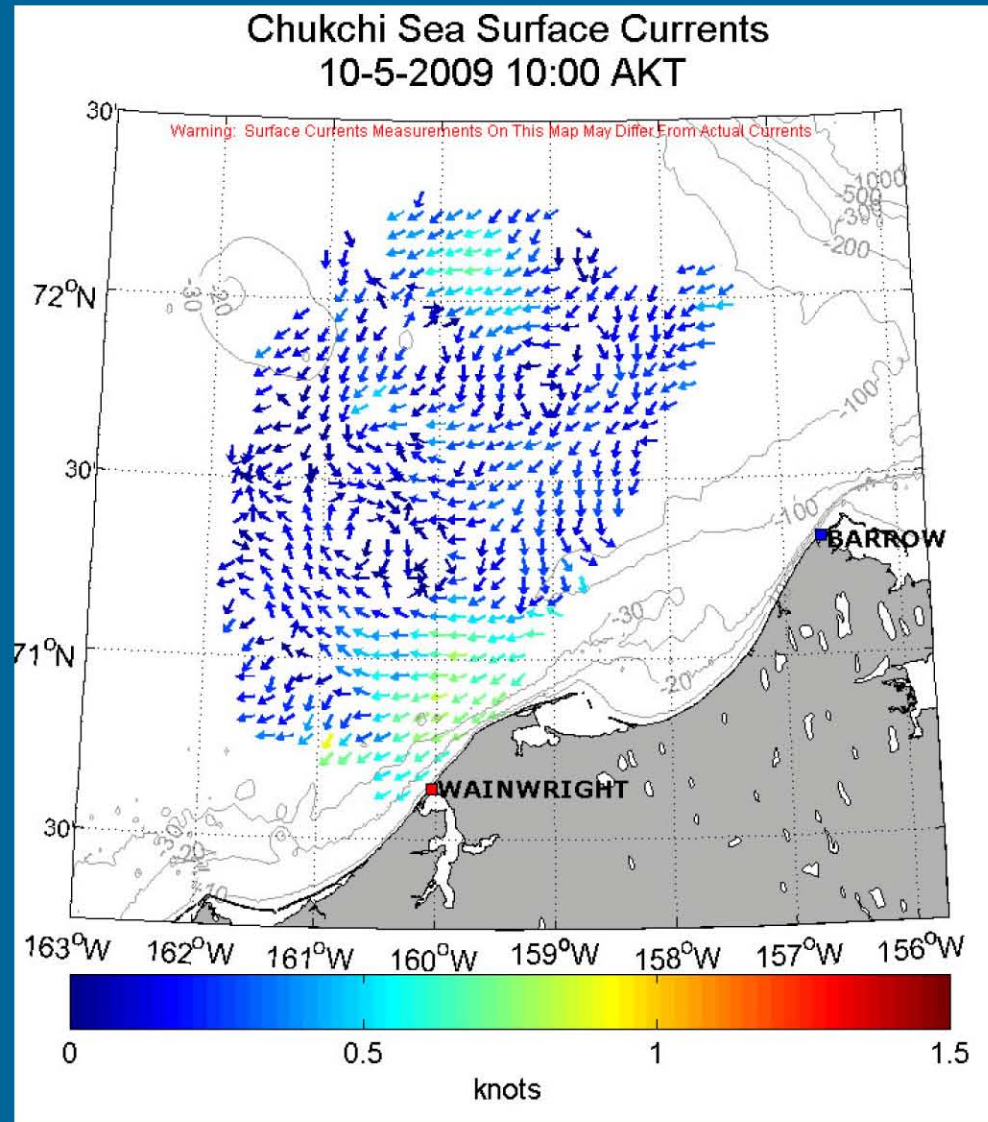
- Mesoscale Meteorology
<mms-meso.gi.alaska.edu>
- Surface Current Circulation
<www.ims.uaf.edu/hfradar>
- Ice/Polynya Mapping
<www.gi.alaska.edu/snowice/sea-lake-ice/Research/landfast.html>
- Ecosystem Observations
- COMIDA Chemistry and Benthos

Mesoscale Meteorology for the Beaufort and Chukchi Seas Phase II

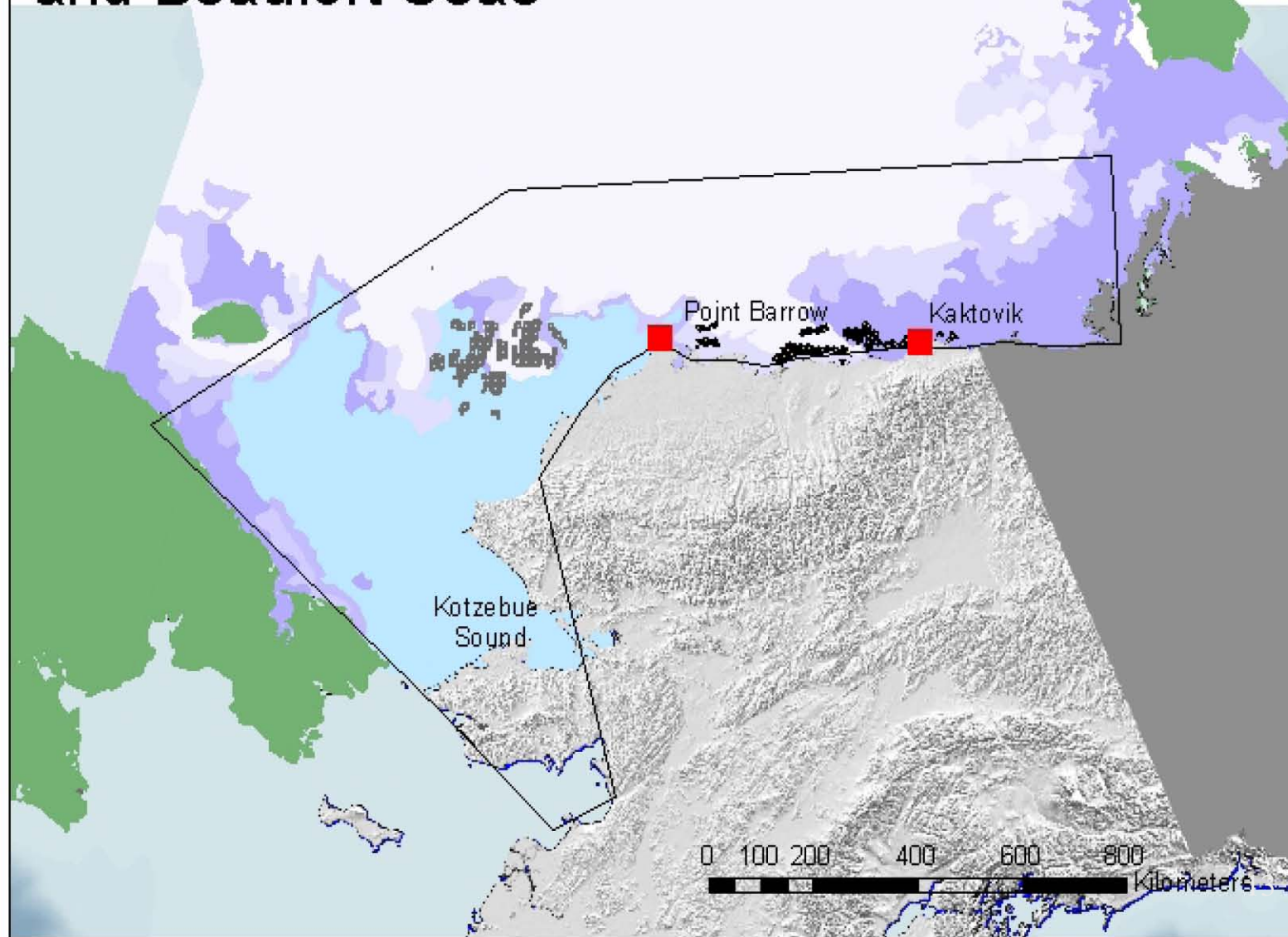




Sample Surface Current Data



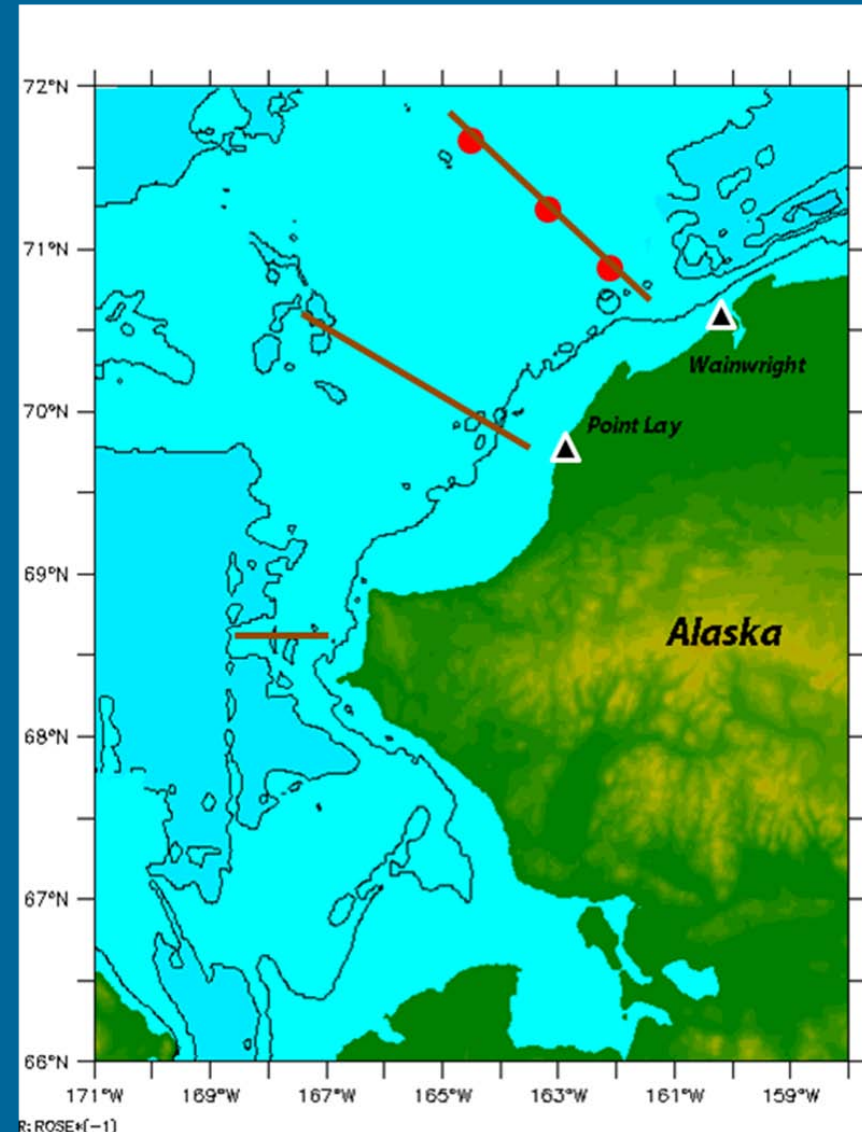
Mapping and Characterization of Recurring Spring Leads and Landfast Ice in the Chukchi and Beaufort Seas



Ecosystem Observations in the Chukchi Sea

- Brown line:
 - locations of hydrographic and zooplankton data collection;
- Red dots:
 - location of moorings

Temp, Salinity, Ice,
Circulation, Nutrients,
Chlorophyll, etc.



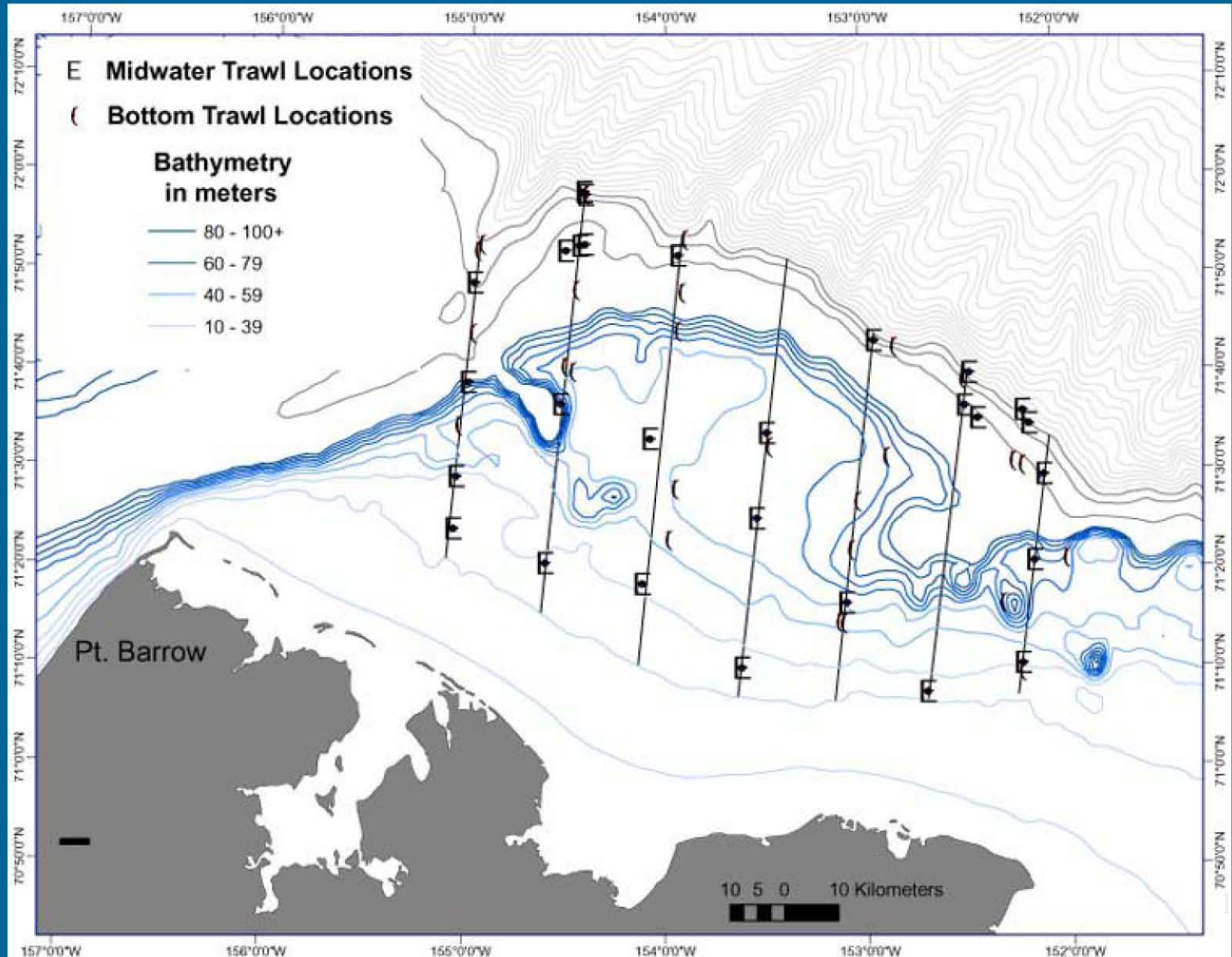
Oil Spill Studies

- Ice-Ocean Modeling
 - Comprehensive Modeling in Ice Diminished Arctic (NOPP)
 - Boundary Oceanography for Beaufort Sea
 - Arctic Ocean Model Inter-comparison Project (AOMIP)
- Empirical Weathering Properties of Oil in Snow and Ice
 - Lab experiments on four crude types
 - Developed new algorithms
- Updates to Fault Tree Approach to Oil Spill Occurrence Estimators (Beaufort/Chukchi)
 - Oil-spill occurrence data
 - Geo-hazard data
- Oil Spill Response
 - JIP Oil Spill Response for Arctic and Ice Covered Waters
 - MMS Technology Assessment and Research Program (Ohmsett – National Oil Spill Response Test Facility; OSLTF)

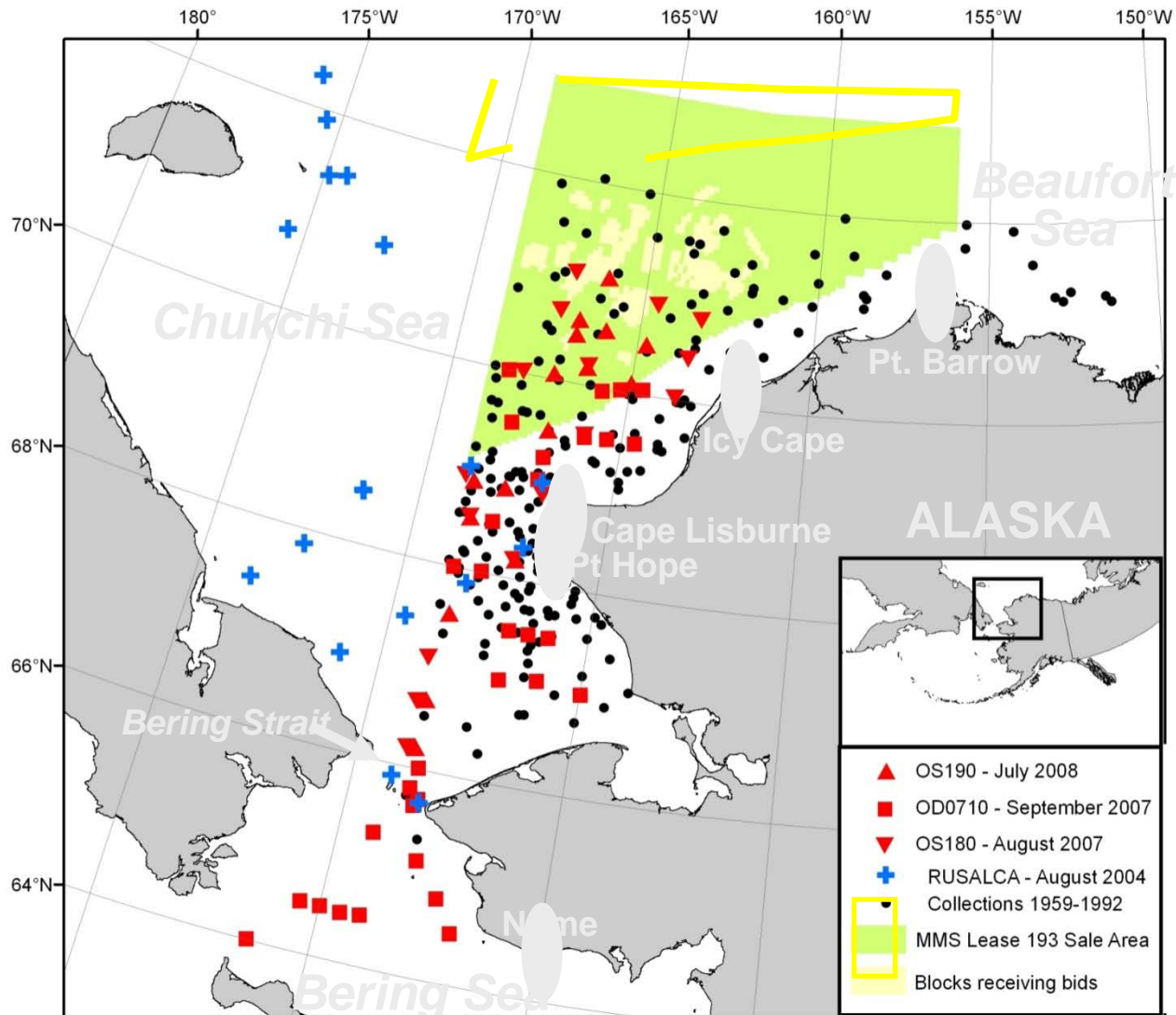
Keystone Fish Projects

- Fish Ecology Catalogue
- Beaufort Sea Marine Fish Monitoring
 - Western Beaufort (report pending)
 - Central Beaufort (in 2010)
- Distribution & Ecology of Demersal Fishes in Chukchi Sea
- Snow Crab Populations Disturbance Impacts
- Subsistence Harvest of Salmon

Beaufort Sea Marine Fish Pilot Survey



Demersal Fishes in the Chukchi Sea



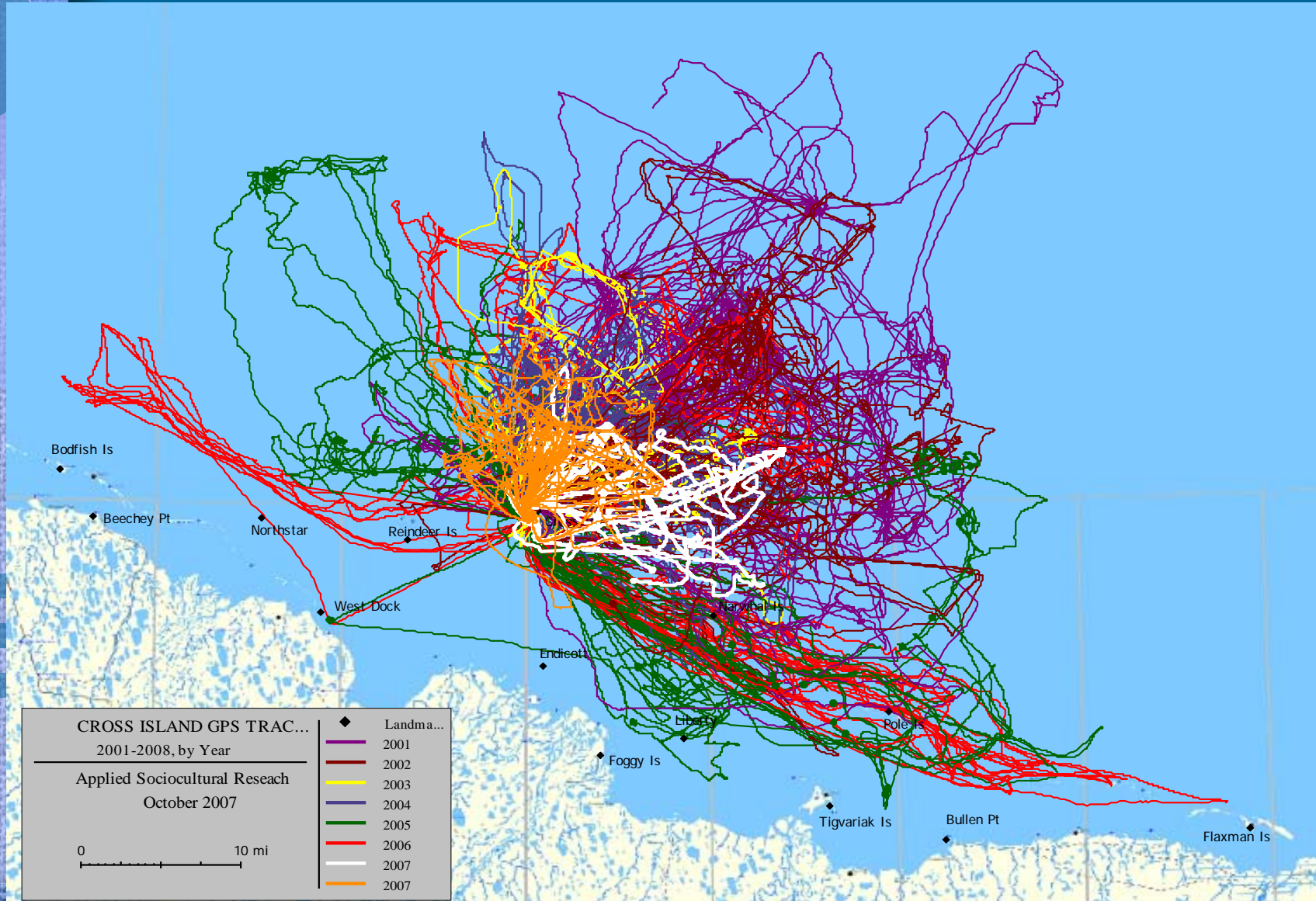
Snow Crab Populations Disturbance Impacts



Social Systems

- Impact Assessment for Cross Island Whaling Activities
- COMIDA: Impact Monitoring for Offshore Subsistence Hunting
- Subsistence Sharing Networks
- Aggregate Effects Research in the Vicinity of Nuiqsut
- Social Indicators

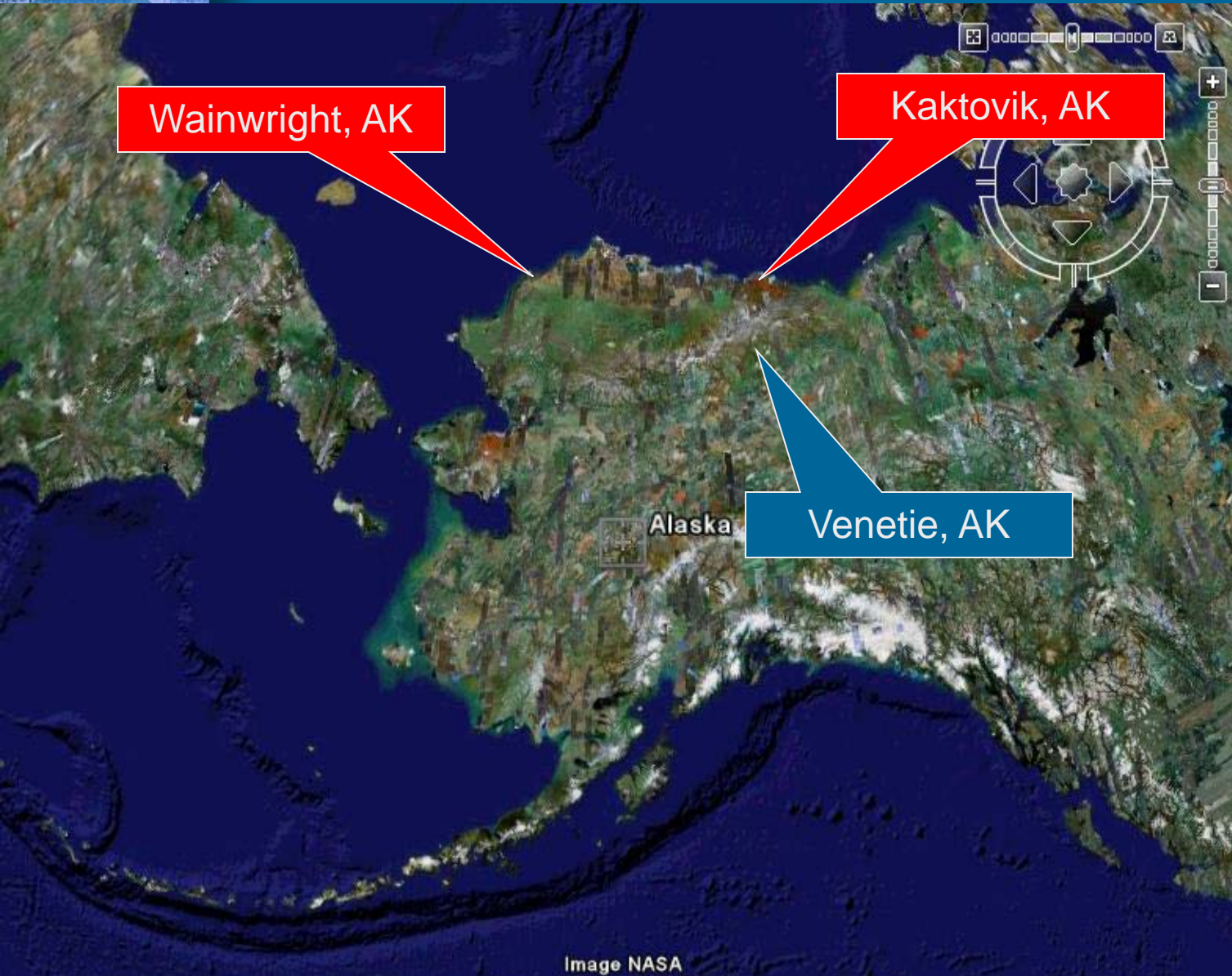
All GPS Tracks, Coded by Year, Cross Island Whaling 2001-2008



Impact Monitoring for Offshore Subsistence Hunting

- Multi-community
 - Wainwright / Pt. Lay
- Multi-species
 - bowhead, beluga, walrus, seal
- Multi-seasonal

Subsistence Sharing Networks



Aggregate Effects Research in the Vicinity of Nuiqsut

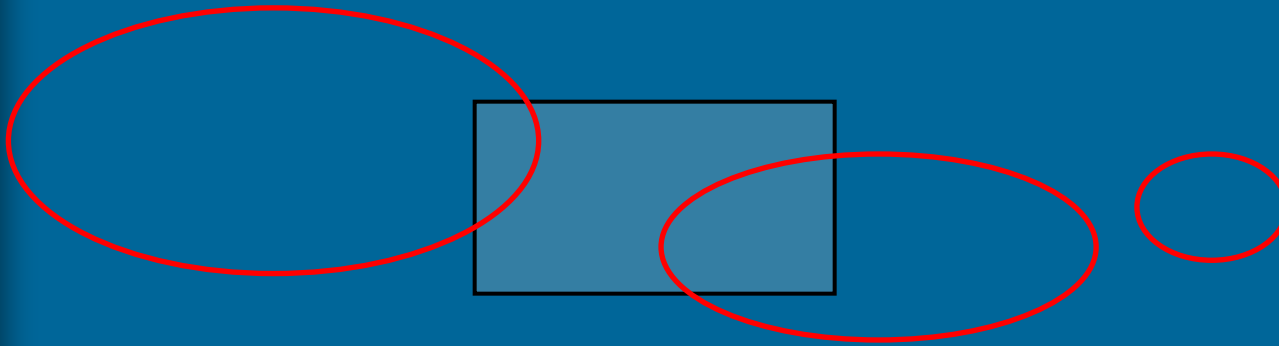
- NSSI collaboration
- Pilot project
- Subsistence focus
- Cumulative Impacts
- Adaptive Management

2011 Projects

- Updates to Fault Tree for Oil Spill Occurrence Estimators
- Synthesis Report: Marine Mammal/Phys O
- Arctic Whale Distribution Monitoring (extension)
- Hanna Shoal Ecosystem
- Distribution of Fish, Crab and Lower Trophic Communities in the Chukchi
- ANIMIDA III (to include Camden Bay)

cANIMIDA Field Surveys

(2005: main area and east)



2005

2012 Prospects

- Impact Assessment for Kaktovik Whaling
- Field Evaluation of UAS for Cetaceans
- Baseline Nutritional Survey
- Noise Propagation Modeling and Field Testing

Planning Trends

- Maximize cooperative and multi-lateral efforts
- Increasing integration of Phys O, Biology, and Social Science research at project level
- Long-term data sampling over regional scale
- Extension of successful projects
- Coordinate data collection standards
- Enhance distribution of study reports/data

Extensive Science Collaboration

- Federal
 - NOPP
 - NOAA-NMFS (especially NMML, PMEL)
 - USGS
 - FWS
 - BLM
 - NSF
- State of Alaska
 - University of Alaska (MMS Coastal Marine Institute)
 - Department of Fish and Game
- Interagency Coordination Units (MMS on Boards)
 - North Slope Science Initiative
 - Alaska Ocean Observing System (w/NPRB)
 - USARC / Arctic Council
- Universities
- Regional / Native Groups **
 - NSB Dept. of Wildlife
 - AEWG / AWC (Whale Tagging Studies; TK Review; Walrus Tagging)
 - Tribal / Village (eg. Kotzebue Sound; Nuiqsut KSOPI; Hunting Assoc)
- Private contractors
- Industry
- CIAP
- MMS Technology Assessment & Research Program