Adaptive methods: building win-win partnerships with Arctic Indigenous Communities

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Joint Alaska Ocean Observing System/ Alaska Sea Grant Community-Based Monitoring workshop, April 1-2, 2014
INTRODUCTION TO ELOKA
ELOKA – Background

- For many years the knowledge of Arctic Indigenous peoples has been documented - volumes of tapes, transcripts, audio, video, maps, web sites, etc.
- 2007-2009, International Polar Year:
  - emphasis on local communities and their knowledge
  - priority on research data and data legacy
- Gap identified: How is community ‘data’ stored, protected, accessed, and used?
The Exchange for Local Observations and Knowledge of the Arctic was established to work with Arctic communities and researchers to address this gap:

- Primarily funded by NSF
- Scope and funding base has expanded
ELOKA Timeline

- **‘04**: Conceptualization
- **‘05**: IPYEol
- **‘06**: 1st meeting, Boulder
- **‘08**: 1st proposal, award
- **‘09**: Continued consultation, Anchorage
- **‘10**: ELOKA II
- **‘11**: Network building, Nunavik, Ottawa
- **‘12**: ELOKA Workshop

Renewal: ELOKA III
The National Snow and Ice Data Center:

- Manages and distributes scientific data
- Creates tools for data access
- Performs scientific research
- Supports communities
- Supports data users
- Educates the public about the cryosphere

Supports communities!
Local and traditional knowledge (LTK) and scientific expertise are complementary and reinforcing ways of understanding the Arctic system. Collecting, documenting, preserving, and sharing knowledge is a cooperative endeavor, and ELOKA is dedicated to fostering understanding and shared knowledge between northern communities and community members, scientists, educators, policy makers, and the general public. ELOKA operates on the principle that all knowledge should be treated ethically, and intellectual property rights should be respected.
BUILDING PARTNERSHIPS
ELOKA - Building a trusting relationship

- Respect and Patience
- Communication
- Self Awareness
- Showing Appreciation

©photo Chris McNeave
ELOKA - Community Ethics

• Prior, Informed Consent
• Research needs to be acceptable by the community
• Involvement of community members e.g. hiring and training of the locals for language translation
• Communities looking for their work to have influence beyond a particular research project

See https://www.itk.ca/sites/default/files/Negotiating-Research-Relationships-Researchers-Guide.pdf
ELOKA - Community Ethics cont:

- Local knowledge and activities like CBM informing science, policy, and development
- Passing knowledge to youth and sharing with other ‘communities’ are important
- Knowledge-holders can decide how to manage their ‘data’ and how to share it with others effectively.

See https://www.itk.ca/sites/default/files/Negotiating-Research-Relationships-Researchers-Guide.pdf
Current international systems for protecting intellectual property were fashioned during the age of industrialization in the west.

In recent years, Indigenous Peoples, local communities and governments have demanded equivalent protection for traditional knowledge systems.

Recently, Indigenous representatives at WIPO are trying to agree on the draft text of a potential international instrument to protect traditional knowledge from misappropriation.

ELOKA - Summary

• Building trust
• Communication
• Deliverables
• Global Awareness

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SERVICES AND APPLICATIONS
Data Listings and Catalog Service

in the Belcher Islands, Nunavut, Canada

Data Product Web Site

set contains interviews of three hunters from Sanikiluaq, Belcher Islands, in the territory of Nunavut, Canada. The hunters were observations of sea ice conditions around the Belcher Islands gathered from their many hunting expeditions. The local

In the three video interviews, the hunters drew important ice features and changes on maps which are included as part of it. Photographs of ice conditions at specific places on the maps are available. Two of the three interviews are in English; in Inuktitut and English.

Data Contributors
- Fleming, Miriam
- Kattuk, Peter
- Ippak, Joannise
- Takuak, Lucassie
- Arraisitainajok, Lucassie
- Kadyak, Jessie
- Kavik, Dinah

Parameters
- Air Temperature
- Birds > Older Ducks
- Erosion
- Freezethaw
- Ice Deformation
- Ice Depth Thickness
- Ice Edges
- Ice Floes
- Ice Growth/Thaw
- Ice Roughness
- Ice Types
- Lake Ice
- Leads
- Longshore Currents
- Mammals > Polar Bears
- Ocean Currents
- Polynyas
- Rain

Geographic Coverage
- Map Location:
  - Description:
    - The Belcher Islands
  - Standard: ETOPO2
  - Resolution:
    - 1 minute
  - Projection:
    - Lambert Azimuthal Equal Area
  - Datum:
    - WGS 84
  - Geographic Bounding Box:
    - Minimum Lon: 0°00'00"N
    - Minimum Lat: 71°00'00"W
    - Maximum Lon: 118°00'00"W
    - Maximum Lat: 71°00'00"N

Geographic Extent:
- Description:
  - The Belcher Islands
  - Standard: ETOPO2
  - Resolution:
    - 1 minute
  - Projection:
    - Lambert Azimuthal Equal Area
  - Datum:
    - WGS 84
  - Geographic Bounding Box:
    - Minimum Lon: 0°00'00"N
    - Minimum Lat: 71°00'00"W
    - Maximum Lon: 118°00'00"W
    - Maximum Lat: 71°00'00"N

Data Set Citation
Dataset Creator: Miriam Fleming
Dataset Title: Sea Ice Observations in the Belcher Islands, Nunavut, Canada
Dataset Description:
- Sea ice observations in the Belcher Islands, Nunavut, Canada, collected from hunters' observations during many hunting expeditions to study changes in sea ice conditions.
- Interviews with three hunters from Sanikiluaq, Belcher Islands, Nunavut, Canada, who share their observations of sea ice conditions.
- Photographs of specific places on the maps are available with each interview.
- Two interviews are in English, one in Inuktitut.

Data Set Details
- Data Type:
  - Image
- Resolution:
  - 1 minute
- Projection:
  - Lambert Azimuthal Equal Area
- Datum:
  - WGS 84
- Geographic Bounding Box:
  - Minimum Lon: 0°00'00"N
  - Minimum Lat: 71°00'00"W
  - Maximum Lon: 118°00'00"W
  - Maximum Lat: 71°00'00"N

Temporal Coverage
Start Date: 01-JAN-01
End Date: 31-DEC-99

Location Keywords
- Continent: North America
- Country: Canada
- Province: Nunavut
- Region: Belcher Islands

Science Keywords
Data and Product Distribution

- Example: **Bearing Sea Sub-Network** Harvest data from a network of six coastal communities representing six Indigenous cultures. Detailed system for responding to access requests.

Reasons for the timing of the next hunting/fishing trip for all BSSN communities

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Fox Gearheard, S. 2003. *When the weather is uggianaqtuq: Inuit observations of environmental change*. Boulder, Colorado USA: University of Colorado Geography Department Cartography Lab. Distributed by National Snow and Ice Data Center. CD-ROM.
Community Web Sites: telling stories

Johnnasie Ippak

Johnnasie’s sea ice observations

Johnnasie Ippak originally learned from his father where to hunt in the Belcher Islands. Hunters travel on sea ice floes to reach the seals, seals, ducks, and whales that they rely on for food. During the interview for the Sanikiluaq Sea Ice Project, Johnnasie indicated that sea ice around the islands is becoming more dangerous, and he marked the changes on the map visible below. In recent years, Johnnasie has had to alter his travel routes and scout new hunting grounds because of the changing sea ice and weather conditions. “The ice is not frozen like it used to be,” he said.

Baffin Bay Region Narwhal Research

High Arctic communities in Nunavut, Canada, and in Northwestern Greenland have long been familiar with narwhals. For centuries, the narwhal has been part of the Inuit diet, providing food and nourishment. Although the Arctic is home to many unique animals, it is the narwhal’s long, protruding tusk that has inspired legends and stunned scientists for centuries.

The Narwhal

Sissiwaq Oral History: Work Among the Kolyma River Indigenous Societies in Siberia, Russia

These websites are devoted to two Indigenous Communities, the Uyak and Ikulik, in the region where the Kolyma River flows into the Bering Sea. The Kolyma is the longest river in the Russian Federation. Community residents practice seasonal nomadic reindeer herding and other subsistence activities, and are those affected by changes in the environment. The Narwhal Tusk Research Project is a $165,000 ELOKA project, a Collaborative Conservation partner.

The Narwhal Cooperative is a non-profit, educational, scientific, and environmental independent organization, where all members are stakeholders. A lot of work is being done by the Indigenous Peoples of the Arctic. Narwhal tusk research is important for understanding the history of the tusk and the culture of the people who have used it. Narwhal is collaborating with ELOKA to present the history, culture, and contemporary environmental situation of the tusk and the people who use it.

The Narwhal Cooperative’s goal is to serve the people of the Arctic, and it expects to achieve this by supporting projects that are focused on the tusk, culture, and community. These projects include a variety of activities such as studies, exhibitions, and workshops that are designed to bring together the communities and increase understanding of the tusk. The results of these projects are shared with the communities and the wider public through publications, exhibits, and other means.

NSIDC (National Snow and Ice Data Center)

The Narwhal Cooperative has established a tusk research program to collect and analyze the data on the tusk, its use, and the communities that have used it. This research will provide insights into the history of the tusk and the culture of the people who have used it. The results of this research will be shared with the communities and the wider public through publications, exhibits, and other means. The Narwhal Cooperative is also working to improve access to the tusk and increase the number of people who have access to it.
Interactive Applications: Yup’ik Environmental Knowledge Project

http://eloka-arctic.org/communities/yupik/
Environmental Monitoring: SIZONet

https://eloaka-arctic.org/sizonet
SIZONet: browse, view, edit

https://eloka-arctic.org/sizonet

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This observation has instructional or didactic value for students or other novices.

Observation source(s):
- Local knowledge/comment

Sea ice related activities:
- Hunting
- Boat count: 6
- Boating:
  - Boating in lead
  - Boats out hunting
  - Boats unable to get out through ice

Sea ice observations:
- Lead condition: Lead closing
- Pack ice condition:
  - Pack ice visible from shore
  - Pack ice is moving

Weather:
- Air temperature: Approximately 35.0 Fahrenheit
- Wind speed: Light
- Wind direction: SE

Game and Wildlife:
- Marine Mammals: Walrus (Taken)

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diminishing overnight, the icepack had drifted back into the area. The sea open lead to the north where they encountered walrus both in the harbor and on the ice. The last two boats arrived back after calling the day hampering the hunters coming back. All though the animals were spotted scattered out to the west and north is containing fresh clams. Two walrus taken had consumed clams mixed with clear water like things I have never seen. They asked, one of the boys lifted one or two. They were various were clear like jellyfish but shaped like worms commonly eaten by seal on other mammals, usually seals.
ATLAS OF COMMUNITY-BASED MONITORING IN A CHANGING ARCTIC
Documenting and Understanding Community-Based Monitoring

http://arcticccbm.org
Community-Based Monitoring By Region and Theme

http://arcticcbm.org

- Ability to focus on particular geographic areas
- Focus on particular themes – health theme currently under development
Detailed Description of Projects & Partners

http://arcticccbm.org
What is Community Based Monitoring?
Arctic distinctions

- Arctic Indigenous peoples have been systematically observing the environment for millennia.

- Arctic Indigenous peoples are not only citizens (as in citizen science); they are also traditional knowledge (TK) holders and rights holders.

- Their ways of observing and understanding often have distinct methods and purposes that may overlap with or diverge from Western science.
Atlas Demographics

• Currently ≈ 60 CBM/TK circumpolar initiatives in atlas;
• 10 Alaska initiatives
• Alaska programs all involve monitoring in some form, including citizen science (7), and monitoring with significant community involvement/CBM (4).
• 1 project was direct community-to-community knowledge and observation exchange (Sea ice monitoring network).
• 4 draw on traditional knowledge;
• We know there are MANY more initiatives represented at this workshop! Please join us and help make the atlas a more comprehensive and useful tool!
• Content partners:
Atlas Development (non-technical)

- Began as effort to inventory community-based monitoring and traditional knowledge projects across the Arctic – inclusive approach
- Range of phenomena monitored (ecological/social) and issues of concern
Atlas Development (non-technical)

- Developed some additional questions to help distinguish between approaches to community engagement and types of observing/monitoring
- Will begin to use data layers to identify programs with shared/similar approaches
Data Management

• Particular sensitivities when working with communities and traditional knowledge holders about data protection, ownership, and management
• At workshops on community-based monitoring over past year, the need for regionally/locally specific ethics protocols has been articulated
• Added page on ethics to atlas – still working to identify resources
• Sharing metadata between different platforms raises issues about representation – working to address best way to approach this
ELOKA - Networking

Like us on Facebook!!
ELOKA – online @ eloaka-arctic.org

Our Mission
To provide data management and user support to facilitate the collection, preservation, exchange, and use of local observations and knowledge of the Arctic. Visit our About Us page to learn more.

News & Events
Read about the ELOKA Workshop, AGU and other conferences. Check our News & Events page for information, or to find out about project updates and other relevant ELOKA tidbits.
Thank You

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