As the Ice Keeps Thinning

Update on Arctic People-Sea Ice Connections, 2007–2009

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“Impact of an Ice-Diminishing Arctic on Naval and Maritime Operations”
June 11, 2009
IPY 2007–2008 project chart (2009); funded ongoing projects are colored in light yellow.
IPY ‘people’ projects supporting indigenous climate and sea ice observations:

- Understanding environmental change in national parks and protected areas of the Beringian Arctic, #21
- Community Adaptation and Vulnerability in Arctic Regions (CAVIAR) #157
- Circum-Arctic Rangifer Monitoring and Assessment (CARMA) # 162
- Sea Ice Knowledge and Use (SIKU) # 166
- Exchange for Local Observations and Knowledge (ELOKA) # 187
- Bering Sea Sub-Network: International Community-Based Observation Alliance for Arctic Observing Network (BSSN) # 247
- Reindeer Herders Vulnerability Network Study (EALAT) # 399
- Inuit Voices Exhibit: Observations of Environmental Change, # 410
SIKU – Sea Ice Knowledge and Use

Documenting Arctic Environmental and Social Change (IPY #166)

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SIKU Project Activities: 2006-2009
Top: SIKU documentation workshop, Provideniya, Russia (April 2008).

Bottom: Uelen, Russia: SIKU workshop (February 2008). Vica Golbtseva speaks to local elders about the preservation of sea ice knowledge.
Inuit hunters on shore-fast ice off Igloolik, Canada.

Photographer, Claudio Aporta
Top: Leonard Apangalook, Sr., 71 – SIKU project monitor (since 2006) in Gambell, Alaska

Bottom: Roman Armaergen, 73 – local SIKU ice monitor from the Chukchi community of Uelen, Russia
Indigenous people monitor the ice for many factors, including safety and the availability of game animals.

Top: Hunters in Savoonga, Alaska venture on new ice
Photographer, Hiroko Ikuta

Bottom: Two hunters from Gambell, Alaska watch for walrus from the top of the shore pressure ridge (February 2008)
Indigenous sea ice dictionaries

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Top: Native drawing used to illustrate terms for indigenous sea-ice dictionary

Bottom: Roman Armaergen from the Siberian community of Uelen makes illustrations to his 100-term lexicon of the Chukchi terms for sea ice

(Photo by Vica Golbtseva, March 2008).
How many Eskimo words for sea ice?

Most local indigenous languages and dialects have 80 to 120 different terms for various types of sea ice, ice conditions, and associated phenomena.

The use of many more terms allows indigenous hunters document ice conditions with very high level of precision. Illustration from “Wales Inupiaq Sea Ice Dictionary” (2008). Photo and captions by Winton Weyapuk, Jr.(on top)
Indigenous sea ice terminologies

New ice is being formed off St. Lawrence Island from the chunks of floating icebergs and newly formed slush ice. There are terms for every single piece of ice in this picture and many more in the local Yupik language.

(Photograph by Chester Noongwook, St. Lawrence Island, 2000).
For the past four years, marine mammal and sea ice specialists have been compiling regional-scale satellite imagery and reports from subsistence hunters. Various sources concur that polar ice “seascape” is rapidly being altered in position, extent, and structure, with a predicted threat to many ice-dependent marine animals and cascading impacts on northern indigenous communities.
As the Arctic ice gets thinner...
Indigenous observations may offer valuable insight into the status of the ice-free Arctic of today’s climate models that predict the loss of multi-year ice by 2050.

Photographer, G. Carleton Ray