



## AAAS ARCTIC DIVISION

## Scientists Link Climate, Energy to Growing Arctic "Food Insecurity"

**FAIRBANKS, Alaska**—For generations, caribou have been central to the diet and culture of the Naskapi people who live on the tundra of northeastern Canada. But when researcher Archana Bali visited last summer, they told her that warming weather and increased mining have driven the caribou so far off of old migration routes that their meat staple is in short supply.

According to researchers at the recent annual meeting of the AAAS Arctic Division, the Naskapi's struggle reflects a broader pattern: Unpredictable weather, shrinking sea ice, and soaring fuel costs are making hunting and fishing more difficult for people long accustomed to living off the land. As a result, food supplies in many Far North communities are increasingly at risk.

"I've worked with people, both in the interior and on the coast, who say, 'I don't have the money to put fuel in my boat to go searching for food,'" said Philip Loring, an anthropologist at the University of Alaska-Fairbanks (UAF). "I'm talking to people who say: 'I'm worried about having enough food for the winter.'"

Added anthropologist S. Craig Gerlach: "Climate change, food shortages—all these things we said were going to happen by 2050 or 2070, they're happening now."

Gerlach just finished a year-long term as president of the AAAS Arctic Division, and he worked with Executive Director Lawrence K. Duffy, interim dean of the UAF Graduate School, to organize the division's 59th annual meeting. Under the theme "Growing Sustainability Science in the North," it brought more than 170 researchers, educators, students, and native Alaskan leaders to Fairbanks from 15 to 17 September.

In the midst of the meeting came news that Arctic sea ice in the summer of 2008 had shrunk to the second smallest size on record. That underscored the researchers' often dramatic reports on changes under way in the Far North climate and in land and marine ecosystems—and how those changes are affecting human communities.

Loring organized a half-day symposium on the future of northern food systems, but food security was a recurring theme throughout the meeting. Problems are manifest not only in food shortages, he said, but in the rising incidence of diabetes and cancer that are linked to modern, processed foods.



**Changing nature.** Elizabeth Nibgori is a hunter from Canada's Nunavut territory. Northern "caribou people" say changing weather and new development are threatening their food supplies.

Bali, working toward a Ph.D. degree in wildlife biology and natural resource management at UAF, visited six communities in northern Alaska and Canada this summer and found them preoccupied with food security and environmental changes. In northern Quebec Province, the Naskapi said they'd sent hunters far out into the tundra for caribou. The trip was expensive, and the harvest limited. "Following local traditions, the elders and single mothers received the harvested caribou first," she said. "There wasn't much for others."

Ecologist Bruce Forbes, based at Finland's Arctic Centre, University of Lapland, has found that oil and gas development on Russia's Yamal Peninsula appears to be harming food supplies for the Nenets, a nomadic reindeer-herding people. New roads and pipelines create barriers to migration. Stress on tundra pastures has altered the quantity and quality of reindeer forage; road dust has reduced the cloudberries consumed by the Nenets.

In Alaska, record rains this summer caused damaging floods. Floods and high gas prices are disrupting subsistence hunting and fishing out in the Bush. Over the past decade, the cost of food, fuel, and other supplies has risen more than 90% in remote Athabaskan villages on the upper Yukon River, Gerlach said, and a droopy bunch of broccoli can now cost \$12 or more in stores there. This fall, schools in Alaska's urban areas are reporting a surge in new students, apparently because families are migrating from the villages.

But people of the Arctic are resilient—over thousands of years, they've had to adapt to survive. Alaskan cities and towns from Juneau to

Fort Yukon, on the Arctic Circle, have started community gardens. In August, Sitka became the latest municipality to host a farmers' market.

Scientists and local residents have teamed to develop new food sources and improve nutrition. Gerlach said that he and his colleagues have offered scientific advice to the Athabascans as they experiment with village gardens, sustainable forestry, and biofuels.

"The Athabaskan people are right out there on the edge," he said. "They have no word for sustainability, but they do have a word for self-reliance—it's self-reliance they're interested in, strong and healthy communities."

Learn more about the four AAAS regional divisions at [www.aaas.org/go/divisions/](http://www.aaas.org/go/divisions/).

## ANNUAL MEETING

### AAAS Council Reminder

The next meeting of the AAAS Council will take place during the AAAS Annual Meeting and will begin at 9:00 a.m. on 15 February 2009 in Chicago, Illinois, in the Plaza Ballroom of the Hyatt Regency Chicago Hotel.

Individuals or organizations wishing to present proposals or resolutions for possible consideration by the Council should submit them in written form to AAAS Chief Executive Officer Alan Leshner by 21 November 2008. This will allow time for them to be considered by the Committee on Council Affairs at their winter meeting.

Items should be consistent with AAAS's objectives and be appropriate for consideration by the council. Resolutions should be in the traditional format, beginning with "Whereas" statements and ending with "Therefore be it resolved."

Late proposals or resolutions delivered to the AAAS Chief Executive Officer in advance of the February 2009 Open Hearing of the Committee on Council Affairs will be considered, provided that they deal with urgent matters and are accompanied by a written explanation of why they were not submitted by the November deadline. The Committee on Council Affairs will hold its open hearing at 2:30 p.m. on 14 February 2009 in the State Room of the Fairmont Chicago.

Summaries of the council meeting agenda will be available during the annual meeting at both the AAAS information desk and in the AAAS headquarters office. A copy of the full agenda will also be available for inspection in the headquarters office in the Hyatt Regency Chicago.