



## SCIENCE COMMUNICATION

# In Arctic Alaska, Climate Warming Threatens a Village and Its Culture

SHISHMAREF, Alaska—Not so many years ago, this small Alaskan village was firmly in winter's grip by the end of October. Snows would cover the ground, and temperatures would plunge low enough to freeze the Chukchi Sea. But in recent years, winter seems to come later and later—and for the Inupiaq people who live here, that's just one sign of a dramatic climate change that now threatens the future of their island community.

Shishmaref and its people will be a central focus in a new AAAS video set to debut at a special town hall event on climate change on Sunday 18 February 2007 during the AAAS Annual Meeting in San Francisco. [Learn more at [www.aaas.org/climate\\_change.html](http://www.aaas.org/climate_change.html).]

"Highlighting our plight during this conference will help our community convince the world that climate change is happening faster here in the Arctic than elsewhere in the world," said Tony Weyiouanna Sr., the village transportation planner.

The AAAS climate-change event will bring together teachers, students, policy-makers, business leaders, and some of the world's top climate researchers for presentations and dialogue on the science and expected impact of global warming. It will be moderated by AAAS President John P. Holdren, director of the Woods Hole Research Center and the Teresa and John Heinz Professor of Environmental Policy at Harvard University.

"One of the characteristics of global climate change is that the climate changes more rapidly at the high latitudes, particularly in the far North," Holdren said in an interview. "These regions around the Arctic are like the coal miner's canary, the early warning to the rest of us of the extent to which the Earth's climate is changing."

Ginger Pinholster, director of the AAAS Office of Public Programs, said the event will focus especially on the human impact of global climate change. And in Shishmaref, she said, "the impact on people is indisputable."

The Alaska Climate Research Center reports that average temperatures in Alaska

have increased by 3.5 degrees Fahrenheit over the last five decades, and 6.3 degrees in winter. Glaciers are melting, causing sea levels to rise. A 2003 report by the U.S. Government



A Shishmaref home tumbled onto the beach after rising seas undermined the bluff where it sat.

Accountability Office listed 186 Alaska Native villages vulnerable to flooding and erosion, in part as a result of warming temperatures. AAAS sent a crew of three to Shishmaref in September for interviews and fact-gathering.

Its 570 residents—living on a spit of sand a quarter-mile wide and three miles long, just 20 miles south of the Arctic Circle—are grappling daily with the changing climate. Where rising seas churn against melting permafrost, erosion

causes extensive damage.

Village officials say that since 2001, the island has lost an average of nearly 23 feet of shoreline per year.

Some buildings have literally fallen into the sea. Others have been moved back from the shoreline. Erosion control already has cost millions, but still, every big storm washes more land into the sea.

While the erosion and structural damage are plainly visible, village elders described how the rising seas are putting their culture at risk, too. The Inupiaq people have lived here for some 4,000 years, subsisting on the bounty of nearby seas, rivers, and fields, but now animal and bird migration patterns are changing. Even the ice is different.

When Mayor Stanley Tocktoo was a boy, the mid-winter ice was mainly blue, which meant it was thick and solid. "Nowadays," he said, "we go out a couple of miles, you have this creamy-looking ice and dark-looking ice, which is very thin and unstable."

While village leaders are working on an ambitious—and expensive—effort to relocate the entire community to the mainland nearby, Shishmaref schoolchildren as young as five are learning about the shift in the climate that will change their lives.

"I don't believe there's an age that they're too young to study climate change," said science teacher Ken Stenek. "These kids are our future. They're our future leaders. And as this community prepares to relocate, these kids are the ones that are going to be a major part of that."



Tony Weyiouanna Sr. and Mayor Stanley Tocktoo

## AAAS

## Council Reminder

The next meeting of the AAAS Council will take place during the Annual Meeting and will begin at 9:00 a.m. on 18 February 2007 in San Francisco, California, in the Imperial Ballroom of the Hilton San Francisco.

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 15 November 2006. This will allow time for them to be considered by the Committee on Council Affairs at their fall 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."

# Science

## AAAS News and Notes

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*Science* **314** (5799), 609.

DOI: 10.1126/science.314.5799.609

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