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4-29-2002

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Recommended Citation

Seif, Amy, "UNH Expedition Leaves May 10 to Find a New Story in the Ice" (2002). *UNH Today*. 2191.
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UNH Expedition Leaves May 10 to Find a New Story in the Ice:

Tracking Human Impact on the Remote Northwestern Arctic

By [Amy Seif](#)

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April 29, 2002

EDITORS/NEWS DIRECTORS:

UNH Professor Cameron Wake will be available by phone from the field and will speak with reporters to give timely information on the expedition. To coordinate an interview, contact Amy Seif at 603-862-5369.

DURHAM, N.H. -- Camping on the snow at 10,000 feet above sea level, a research team lead by the University of New Hampshire will endure below freezing nights and intense conditions in pursuit of two ice cores that will tell a never-before-told story.

Although ice coring -- extracting long cylinders of ice to recover records of the atmosphere preserved in glaciers -- has been on-going for about 20 years, this project will document a wider spectrum of pollutants than ever studied from an area of the world in which not much data exists.

"We think these areas of the Earth are pristine, that there will always be places that we can't affect," explains the trip's leader, Cameron Wake professor of Earth sciences at UNH's Institute for the Study of Earth, Oceans, and Space. "However, now we know that remote places like the Arctic are polluted from atmospheric chemistry studies looking at recent effects. We will be tracking the impact that humans have had over the past century on the remote atmosphere in the Canadian Yukon."

The first ice core to be extracted will be about 250

meters deep and will be recovered from the Eclipse Icefield in the St. Elias mountains. Once back at the lab, scientists will analyze the core for a wide variety of chemical constituents, including familiar pollutants such as lead, mercury, cadmium and vanadium. A second, shorter ice core will be drilled to a depth of 100 meters and will be analyzed for persistent organic pollutants (PCBs).

"This is the first time that we are developing a truly multiparameter record. We are looking at all major ions, stable isotopes, metals and rare Earth elements for Northwestern North America. Rare earth elements are important clues as they can indicate where the polluted air came from originally," Wake says.

This international project, funded by the National Science Foundation, involves several universities, as well as the Geological Survey of Canada and the National Institute of Polar Research in Tokyo. Both the Geological Survey and the National Institute will drill their own ice cores, which will offer a greater historical record as well as give sources for comparison.

"As no one meteorology station can provide all the answers to weather," Wake says, "no one ice core can provide all the answers to climate change. This multiparameter record will provide a valuable contribution for a data poor region to the growing network of ice-core and tree-ring records from the Arctic that can be used to document natural and anthropogenic environmental change."

Two undergraduate students, from the University of Maine and the University of Ottawa, will accompany Wake and his co-principal investigator, University of Maine Professor Karl Kreutz, on this expedition. Wake's graduate student, Kaplan Yalcin, also will participate.

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