

# NOAA aircraft to probe arctic pollution

April 7 2008

---

NOAA scientists are now flying through springtime Arctic pollution to find out why the region is warming - and summertime sea ice is melting - faster than predicted. Some 35 NOAA researchers are gathering with government and university colleagues in Fairbanks, Alaska, to conduct the study through April 23.

“The Arctic is changing before our eyes,” said A.R. Ravishankara, director of the chemistry division at NOAA’s Earth System Research Laboratory in Boulder, Colo. “Capturing in detail the processes behind this large and surprisingly rapid transformation is a unique opportunity for understanding climate changes occurring elsewhere.”

Observations from instruments on the ground, balloons, and satellites show the Arctic is warming faster than the rest of the globe. Summer sea-ice extent has decreased by nearly 40 percent compared to the 1979–2000 average, and the ice is thinning.

Industry, transportation, and biomass burning in North America, Europe, and Asia are emitting trace gases and tiny airborne particles that are polluting the polar region, forming an “Arctic Haze” every winter and spring. Scientists suspect these pollutants are speeding up the polar melt.

Called ARCPAC (Aerosol, Radiation, and Cloud Processes affecting Arctic Climate Change), the project is a NOAA contribution to International Polar Year 2008. The experiment will be coordinated with the agency’s long-term climate monitoring station at Barrow, Alaska, and with simultaneous projects conducted by NASA and the Department of

Energy.

“This is our first airborne deployment of a powerful new suite of instruments in the Arctic,” said ARCPAC lead scientist Dan Murphy, also of NOAA’s Earth System Research Laboratory. “When we analyze all the data, we’ll be able to piece together the equivalent of a ‘high-def’ movie of the atmosphere as springtime sunlight warms the region and sparks a chain of chemical reactions.”

Scientists aboard the NOAA WP-3D research aircraft will use nearly 30 airborne sensors to answer questions about airborne particles, altered clouds, low-altitude ozone, and soot deposited on snow. All are produced or affected by human activities and may be playing key roles in the rapid warming.

In a related study, also taking place this month, the NOAA-led International Chemistry Experiment in the Arctic Lower Troposphere (ICEALOT) will gather shipboard measurements of atmospheric fine particles and trace gases in the air above the North Greenland and Barents seas, which are closer to sources than the ARCPAC study area. NOAA scientists are eager to compare the pollution north of Alaska with the more recent emissions near Europe.

Source: NOAA Headquarters

Citation: NOAA aircraft to probe arctic pollution (2008, April 7) retrieved 23 April 2024 from <https://phys.org/news/2008-04-noaa-aircraft-probe-arctic-pollution.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.