

“AIRMAP will not only provide additional accolades to the University of New Hampshire’s standing as a leader in the field of atmospheric research, but will benefit the nation by leading to more accurate air quality forecasts.”

–U.S. Senator Judd Gregg

The primary mission of AIRMAP is to obtain a greater understanding of regional air quality, meteorology, and climatic phenomena. AIRMAP research focuses on making scientific observations of the atmosphere, and the pollutants that travel in the atmosphere, in rural to semi-remote areas of New England.

This increased understanding of atmospheric conditions will allow us to develop new weather forecasting technologies, which will include information on air pollutants, in order to better predict changing weather and air quality.

Broader implications of AIRMAP include providing better information to the public about the air we breathe, and information on the economic benefits associated with improved environmental forecasting. To learn more about AIRMAP and view realtime data visit <http://airmap.unh.edu>

<http://airmap.unh.edu>

AIRMAP is a collaborative research project involving:

**Partners**

Climate Change Research Center, UNH  
Mount Washington Observatory  
NOAA Aeronomy Laboratory  
NOAA Environmental Technology Laboratory  
NOAA Forecast Systems Laboratory  
NH Department of Environmental Services  
Plymouth State College  
Whittemore School of Business and Economics, UNH

**Collaborators**

EPA-Region 1  
Harvard University  
MANE-VU  
NESCAUM  
Shoals Marine Laboratory

**Friends**

Castle Springs  
Isles of Shoals Steamship Company  
Lakes Region Conservation Trust  
Pease Development Authority

**Funded by**

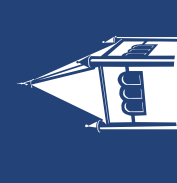
National Oceanic and Atmospheric Administration  
The Iola Hubbard Climate Change Endowment



UNIVERSITY of  
NEW HAMPSHIRE

Climate Change Research Center  
Institute for the Study of Earth, Oceans, and Space  
39 College Road  
Durham, NH 03824  
603 862-1991  
[airmap@unh.edu](mailto:airmap@unh.edu)  
<http://airmap.unh.edu>

One in two Americans breathe unhealthy air...



AIRMAP

MAPPING NEW ENGLAND'S CHANGING CLIMATE AND AIR QUALITY



# AIRMAP: Atmospheric Investigation, Regional Modeling, Analysis and Prediction

## Goals

- Document and analyze current trends in regional air quality in New England.
- Determine the relative influence of local emissions versus pollutants transported from other regions.
- Investigate the relationship between weather and air quality.
- Develop computer models to simulate atmospheric transport and air quality and to forecast air quality.
- Provide real-time air quality data to New England citizens and policy makers.

## Measurements

- ✓ Ozone (O<sub>3</sub>)
- ✓ Carbon Monoxide (CO)
- ✓ Carbon Dioxide (CO<sub>2</sub>)
- ✓ Nitric Oxide (NO)
- ✓ Total Reactive Nitrogen (NO<sub>y</sub>)
- ✓ Hydrocarbons & Halocarbons
- ✓ Alkyl Nitrates
- ✓ Sulfur Dioxide (SO<sub>2</sub>)
- ✓ Particle number & mass
- ✓ Soluble aerosol chemistry
- ✓ Aerosol scattering & absorption
- ✓ Wind speed & direction
- ✓ Temperature & humidity
- ✓ Barometric pressure

## Why New England?

Air quality and climate change is of particular concern to New Englanders due to the region's unique geographic location and setting.

New England lies directly downwind of major urban and industrial centers in the United States. Our air quality is, at times, significantly affected by pollution transported into the region from these upwind sources.

New England is a small region of the United States, yet the climatic gradient across it is one of the steepest in the country. Elevations range from sea level to greater than 6000 feet over a relatively short distance, providing for a variety of weather conditions.



*Mt. Washington  
6288 feet*



*Castle Springs  
Moultonboro, NH  
1300 feet*



*Thompson Farm  
Durham, NH  
75 feet*



*Shoals Marine Lab  
Appledore Island  
(Seasonal) Sea Level*

## AIRMAP Monitoring Stations

We are improving existing monitoring programs to investigate New England's air quality at rural to semi-remote locations on a transect from the mountains to the ocean.

