

# Strategies for integrating long-term air and water monitoring at Acadia National Park

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## Introduction

Acadia National Park (ANP) has been fortunate to participate in several long term air and water monitoring programs dating back to the early 1980s. More recent efforts, such as the NPS “Vital Signs” Inventory and Monitoring Program (I&M Program), are approaching 12 years of data collection. Still later projects, the Jordan Pond Water Quality Project, and the Wild Acadia Program, have introduced continuous data collection and watershed-focused investigations into the mix. Park natural resource managers are investigating approaches to better integrate both the workflow and findings of these various programs in order to enhance their ability to determine status and trends, detect abnormal conditions, and better understand the dynamic nature of park ecosystems.

### Air Quality Monitoring (1981-present)

Air quality monitoring in ANP is accomplished through participation in several national monitoring networks that track gaseous pollutants, atmospheric deposition, and particle pollution. These stressors affect human health, water quality, forests/vegetation, visibility, and other ecological processes. Weather and climate data are collected in tandem with air quality measurements.



### Biological Monitoring (1997-Present)

Biologists in ANP and the Maine Department of Environmental Protection (MDEP) have been working together since 1997 to assess, evaluate, and provide biological information about the parks overall stream health using the resident benthic macroinvertebrate community.



### Water Monitoring (1990s-present)

Acadia’s lakes and streams were monitored as early as 1942, though regular monitoring by park staff began in the early 1990s. Currently, lakes and streams are tested monthly from April through October for physical and chemical parameters, along with streamflow and water level measurements using a NPS Vital Signs protocol.



### Continuous Monitoring (1999-present)

- Established in 2013, the Jordan Pond buoy has sensors which track temperature, pH, dissolved oxygen, algae growth, organic matter, and light. The buoy takes readings from these sensors every 15 minutes, providing insight to temporal and seasonal trends in Jordan Pond water quality.

