



## Air Quality Related Values

### Background

Air quality related values (AQRVs) are resources sensitive to air quality and include a wide array of vegetation, soils, water, fish and wildlife, and visibility. The goal of the AQRV inventory is to not only to provide park-specific information on location and distribution of AQRVs, but also information on types and amounts of airborne pollutants that cause harmful changes to them. The amount of a pollutant that causes harm to an AQRV is referred to as the critical load.

Park managers and planners, as well as state, local, and federal air quality agencies, require information on AQRVs and pollutant effects to ensure that air quality management strategies provide resources the highest level of protection. Effective strategies manage air pollutant emissions so that critical loads for AQRVs are not exceeded.

There are currently no widely-applied methods for determining pollutant critical loads for AQRVs, but the NPS Air Resources Division (ARD) is collaborating with federal and university scientists on a number of projects in parks to test approaches for determining critical loads that can eventually be applied more widely. These projects are prioritized according to AQRV sensitivity, and current or future threats to AQRVs. Critical loads developed for the most sensitive AQRVs will provide the basis for management goals and desired future conditions that, when attained, are expected to provide protection for most AQRVs.

### Products

Information on AQRVs can be obtained through the Air Resources Information System (ARIS), a web-based application. Ozone-sensitive plant species are listed for each park, and categorized as being at low, medium, or high risk for foliar injury. ARIS is organized by park or Inventory & Monitoring Program (I&M) network, with special emphasis on the 48 NPS Class I air quality areas that are afforded the highest protection under the Clean Air Act. AQRVs are described qualitatively and, where possible, quantitatively. Development of maps showing locations of sensitive resources are in progress.



Closeup of ozone injury to milkweed (*Asclepias sp.*) at Allegheny Portage National Historic Site

### Status

All 48 Class I areas and 32 I&M networks have basic AQRV information available through ARIS. Sensitive categories of AQRVs (e.g., vegetation, soils, water) have been identified in tables for each park and network. Maps of park resources sensitive to nitrogen, sulfur, and mercury atmospheric deposition will be available in 2009-2011. Risks and thresholds for effects to resources are being identified through park studies on vegetation, soils, lakes, and streams.

### More Information

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**Air Resources Information System (ARIS) :**  
**NPS Air Resources :**  
**Air Atlas:**

<http://www.nature.nps.gov/air/Permits/ARIS/>  
<http://www.nature.nps.gov/air/>  
<http://www.nature.nps.gov/air/Maps/AirAtlas/>