AQUIMS

> **UPDATE: Originally developed to manage air quality data, AQUIMS, with its modular system architecture, provides the framework for managing and delivering any type of resource data. The NPS Geologic Resources Division recently adopted AQUIMS as the interface for providing its data.**

The AQUIMS software is a computerized system for managing resource information and providing "expert interpreted" resource data. System users include resource managers, interpreters, policy experts, and educators in resource management.

AQUIMS provides efficient access to several types of information including: documents, graphs, tables, photographs, GIS data, bibliographies, Internet sites, and decision support systems (DSSs). The ozone DSS provides the user with diagnostic assistance to identify and quantify ozone injury on native vegetation. Using water chemistry data and encoded knowledge of human experts, the atmospheric deposition DSS characterizes lake/stream sensitivity to natural and anthropogenic acidity. Spatially-referenced data is interpreted by the knowledge bases and integrated with GIS to display spatially-referenced outcomes. The knowledge bases for each DSS were developed through knowledge engineering sessions with multiple experts using the NetWeaver software developed at Penn State University.

Currently, AQUIMS contains general information on participating park and refuge resources, and air quality information. However, the "toolkit" supplied with the software allows parks and refuges to add information on any natural or cultural resource, and to customize the user interface. Thus, the AQUIMS framework can be used to manage information on other natural or cultural resources by adding appropriate databases and developing relevant DSSs.

AQUIMS is operational at many NPS, FWS, and university offices. It can be installed on individual computers or on a local network, and is interfaced with Microsoft Office. In summer 1999, AQUIMS will also be accessible via the Internet. The AQUIMS Web site will provide general access to the data and information without some of the file manipulation capabilities of the desktop version.
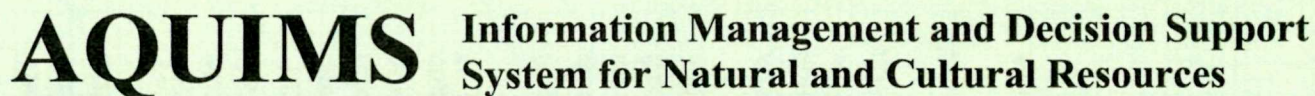
Interested parks and refuges are invited to participate.

AQUIMS is a cooperative project developed by:
> National Park Service, Air Resources Division
> U.S. Fish and Wildlife Service, Air Quality Branch
> Penn State University, Departments of Entomology and Plant Pathology
> University of Denver, Department of Geography and Environmental Science
> U.S. Environmental Protection Agency

Technical Contacts: Bruce Nash (303) 987-6697; E-mail: bruce_nash@nps.gov
Michael Saunders (814) 863-2979; E-mail: mcs5@psu.edu
Bruce Miller (814) 725-2312; E-mail: bjmiller@psu.edu

AQUIMS
Information Management and Decision Support System for Natural and Cultural Resources
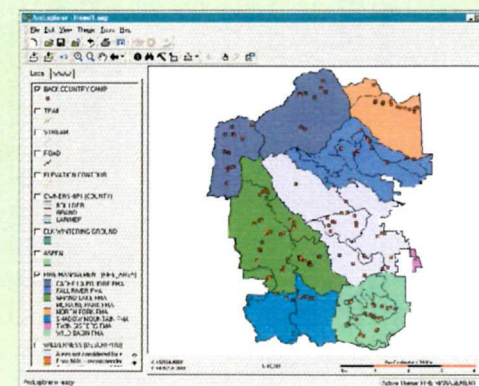
SYSTEM BENEFITS

Accelerates data access
Provides expertise and interpreted data often lacking at "remote" sites
Consolidates many data types in electronic format
Facilitates data maintenance and update
Identifies data gaps and research needs
Ensures more thorough literature searches
Provides links to decision support systems, models and Internet sources

The AQUIMS software provides a computerized framework for delivering resource information in an efficient manner.

After selecting the DOI site of interest, the user has access to: site species lists, general site information, annotated references, summary air pollutant monitoring information, slides of pollution-injured plants, and embedded ozone effects and atmospheric deposition decision support systems (DSSs).

By summer 1999, AQUIMS will be accessible via the Web, in addition to the desktop version.

Within NPS, the Air Resources Division, the Geologic Resources Division, and the Inventory and Monitoring Program have adopted AQUIMS as the interface for providing their data.

SYSTEM COMPONENTS

AQUIMS core programs and data
Microsoft Office™ transparent interface
Borland Database Engine™
Decision support systems (ozone and atmospheric deposition)
GIS functionality via ESRI ArcExplorer,™ ArcView™ and MapObjects™
Internet sites and databases
Local hard drive/diskette/network files
External custom software (e.g. Forest Health)

Site plant species list

Site-specific atmospheric deposition summary data

Spatially referenced output of aquatic chemistry DSS

Images and measures of visibility at site

Site-specific ozone sensitive species

Image of site-specific resource

Ozone injury on aspen leaf

Ecology, Biodiversity and the Environment
Internet site seamlessly linked

GIS data display and overlay

For more information contact:

Bruce Nash
National Park Service
Air Resources Division, PO Box 25287
Denver, CO 80225
Telephone: 303-987-6697
E-Mail: bruce_nash@nps.gov