

IMPROVE Website

Status and Great Things to Come

Presented to the IMPROVE Steering
Committee Acadia NP, ME July 2005

Interagency Monitoring of Protected Visual Environments

Our national Parks and Wilderness Areas possess many stunning vistas and scenery. Unfortunately, these scenes are diminished by uniform haze causing discoloration and loss of texture and visual range. Layered hazes and plume blight also detract from the scene. Recognizing the importance of visual air quality, congress included legislation in the 1977 Clean Air Act to prevent future and remedy existing visibility impairment in Class I areas. To aid the implementation of this legislation, the IMPROVE program was initiated in 1985. This program implemented an extensive long term monitoring program to establish the current visibility conditions, track changes in visibility and determine causal mechanism for the visibility impairment in the National Parks and Wilderness Areas.

Diminishing View
Diminishing View
Diminishing View
Diminishing View

West Elk Mountains, Colorado

B_{ext} (Mm^{-1})	20	30	40	60	100	200	300	500		
Deciviews	4	7	11	14	18	23	30	34	37	39
V.R. (km)	200	130	100	65	40	20	13	10	8	

< Stop Loop >

The purpose of this website is to provide access to the IMPROVE monitoring data resources and educational material on the science of visibility and regulations. First time visitors should visit the Overview section which summarizes the IMPROVE network and visibility science and regulations.

IMPROVE and Visibility Overview

Data Resources Tools Publications Special Studies Visibility & Regulation Education

IMPROVE Resources

Database Metadata Graphics Photos Web Cams IMPROVE Reports Grey Literature

Bulletins

- Data
- Tools
- Publications
- Special Studies
- Education
- Activities

Website purpose

- The primary purpose of the IMPROVE website is to provide federal, state, and local air quality regulatory agencies as well as the general public access to:
 - IMPROVE monitoring data and metadata
 - aerosol, optical and scene
 - Processed data graphics, aggregated data values, reports to satisfy some of State's needs for the regional haze rule
- Secondary objectives of the website are:
 - Provide access to data analysis tools and algorithms
 - Provide access to educational material on visibility issues, science and regulations
 - Provide user supported forum
 - Feedback mechanism for users to report QA/QC issues

IMPROVE International User Community

- Average a 1400 - 2400 unique visitors a month
- Visitors from 115 different countries have accessed the websites include visitors from Bahrain, Iran and Vietnam, still no one from Iraq
- Over 50 other websites Link to IMPROVE

IMPROVE Website Activities

- Past year activities
 - Addition of data, documents and analyses
 - New integrated database, analysis and display tools borrowed from the VIEWS project (McClure, Ames, Fox, Schichtel)
- Coming year activities (I hope)
 - Addition of CIRA QA documents (Debell)
 - Continued maintenance and addition of routine products, (i.e. data, documents, notes)
 - A true multi media visibility and air quality educational section (Winchester, Malm, Lemke)

Additions - Data

- IMPROVE aerosol data updated each **QUARTER**
 - Data review page replaced with IMPROVE Preliminary data network in the online Database
- Optical data updates
 - Nephelometer scattering data (quarterly)
 - Reprocessed data from **1993 - Winter 2005**
 - Now available from the VIEWS/IMPROVE online database.
 - Transmissometer extinction data (annually)
 - ASCII files: **1987 - 2003**
- Special studies aerosol data
 - BRAVO, Yosemite (soon)
- Regional Haze Rule Metrics: best and worst 20% haze days
 - IMPROVE RHR Aerosol network added to online database
 - RHR data available through 2003
 - 2004 data will be added within one month of getting the final data

Additions - Documents

- New section: IMPROVE Steering Committee Meeting Presentations – currently contains 2004 presentations
 - Please email me your presentation – Preferably in pdf format
- Updated nephelometer, transmissometer and camera SOPs from Air Resource Specialists
- Reevaluation of HFC 134a (SUVA) Span Gas Multiplier - ARS
- Latest IMPROVE newsletters and meeting minutes
- IMPROVE Calendars
- BRAVO “consensus” final report and NPS/CIRA final report

Grey Literature

- *Review of the IMPROVE Equation for Estimating Ambient Light Extinction Coefficients* - Hand and Malm
- *Theoretical Analysis of PM_{2.5} Mass Measurements by Nephelometry* - Molenar
- *Theoretical and Experimental Analysis of the Optec NGN Nephelometer* - Molenar
- *Comparison of the DRI/OGC and Model 2001 Thermal/Optical Carbon Analyzers* – Chow and Watson
- *IMPROVE TOR Analysis for Carbon – Assessment of Transition to a New Analyzer - Presentation* - Pitchford
- *Source Allocation of Columbia Gorge IMPROVE Data with Positive Matrix Factorization* - Keith Rose - US EPA
- *Spatial and Seasonal Patterns in Speciated Fine Particle Concentrations in the Rural United States - Presentation* - Schichtel

New Tools

- Incorporation of VIEWS data analysis, display and delivery tools
 - New snappy data query wizard to access IMPROVE data and data from other networks
 - True GIS capabilities
 - Enhanced tools to deliver and explore graphical and tabular Summaries of IMPROVE data relevant to RPO's
- Email notification system on the availability of IMPROVE data – Implemented but have mail server problems

Changes in IMPROVE/VIEWS Mission

- VIEWS funding will be cut in half in the coming year
- Shawn McClure will assist UC Davis in implementing a new SQL data management system
- Shawn and Rodger will assist WRAP in implementing a Technical Support System for the development of Regional Haze SIP

Online IMPROVE Data Analysis Results – Visit VIEWS

Visibility Information Exchange Web System

VIEWS
Visibility Information Exchange Web System

Home What's New Tour Site Map Contact Us Your Account

Dedicated to reducing **Regional Haze** in **Class 1 Areas** through the exchange of **Data, Tools, and Ideas**

The Visibility Information Exchange Web System is an online exchange of visibility data, research, and ideas designed to support the Regional Haze Rule enacted by the U.S. Environmental Protection Agency (EPA) to reduce regional haze in national parks and wilderness areas. In addition to this primary goal, VIEWS supports global efforts to better understand the affects of air pollution on visibility and to improve air quality in general.

VIEWS Data
The VIEWS website provides access to a wide variety of visibility data resources, including metadata from several networks of air quality monitoring sites, an integrated aerosol database, graphical summaries of data analyses, extensive catalogs of air quality information, and many others. (Mouse-over the icons above for more info.)

QUICK VISITOR'S GUIDE

- Use the top navigation bar for general information about the website.
- Use the left navigation area to browse and search for **data**.
- Click on the photographs at the very top to find out more about selected Class I Areas.
- Learn about the Regional Planning Organizations by following the "**Partners**" links.
- Click on the VIEWS logo to to download the logo in various formats and sizes.

VIEWS BULLETINS AND NEWS

- All Bulletins and News**

New Presentation

- VIEWS Presentation at the 2003 AQS Conference**
The presentation describes the nature, purpose, and overall design of the VIEWS system and provides an update on the current status of ongoing tasks as of April, 2003. Recently released features are explored, and plans for future development are presented.

PARTNERS

- Western Regional Air Partnership
- CENRAP
- Midwest RPO
- VISTAS
- Regional Haze MANE-VU web site
- Environmental Protection Agency

OF INTEREST

- Visibility
- About Air Pollution
- Regional Haze Rule
- Class I Areas
- IMPROVE Program
- RPO Information
- Software Tools
- Our Staff
- Fire & Air Presentations

NEWSLETTER

Signup for the VIEWS newsletter to receive bulletins and updates periodically by email:

Sign Me Up!
Please Remove Me

FEEDBACK

Data

- All Data
- Metadata
- Query Wizard
- ASCII Data Files

Annual Summary

- Spatial Patterns
- Composition
- Trends
- Back Trajectories
- Summary Data
- Archived Graphics

Catalogs

- Air Quality Catalog
- Weather Catalog
- Emissions Catalog

Imagery

- Visibility Photos
- Class I Webcams
- Forest Service

Guest List

For best results, please use:
Internet Explorer 5 (or higher)
Netscape 6 (or higher)
more info...

National (United States) aerosol and optical data integration, analysis and delivery system supporting the better understanding and analysis of haze and the implementation of the U.S. Regional Haze Regulation

Designed to acquire, manage, and provide access to data and metadata from multiple monitoring networks in a uniform format