



The MONITOR

A Newsletter for National Park Service
Air Quality Station Operators

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NETWORK NEWS

Ozone exceedances in 2000

Twelve park units exceeded the allowed levels of ozone during the 2000 ozone monitoring season (March through September). Even so, the number of 8-hour exceedances in the network was down this year from the past few years. As seen in the table below, Sequoia-Kings Canyon National Park, California, and Great Smoky Mountains National Park, Tennessee, obtained the highest number of exceedances with the highest levels of ozone in the western and eastern U.S., respectively.

Values in the table are preliminary. Parks listed include those air quality stations with daily maximum 8-hour running average concentrations exceeding the 85 ppb level set by the new National Ambient Air Quality Standards (NAAQS). Ozone exceedance tables for 1998, 1999, and 2000, and a barchart showing the 3-year averages of the 4th highest ozone exceedance levels for each air quality station, are available on the Internet at <http://www2.nature.nps.gov/ard/gas/exceed.htm>.

**Ozone Exceedances at Network Sites
March - September 2000**

National Park	Total Daily 8-hr exceedances	Maximum 8-hr O3 (ppb)	4th highest max. 8-hr O3 (ppb)
Great Smoky Mountains:			
Cades Cove	2	93	--
Clingman's Dome	19	112	100
Cove Mountain	14	110	97
Look Rock	12	98	94
Joshua Tree	27	104	97
Mammoth Cave	4	91	89
Rocky Mountain	2	90	--
Sequoia-Kings Canyon:			
Ash Mountain	65	121	109
Lookout Point	48	106	101
Lower Kaweah	7	92	90
Shenandoah	1	93	--
Yosemite	5	100	87

Operator training CD in development

A supplemental training CD-ROM is being produced for air quality station operators. The CD will be useful for both those who are new to the program and those who just might need a refresher. The CD will include four major topics:

- The goals and objectives of the NPS network
- The basic components and functions of a monitoring site
- A station operator's responsibilities
- Short videos documenting specific site visit procedures

The CD is being produced jointly by the NPS ARD and ARS, and is expected to be completed by Spring 2001. It will be distributed to all sites and can be viewed on the DataView computer or any machine with a CD-ROM drive.

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What's inside:

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STATION OPERATOR FOCUS

Acadia research keeps Bill Gawley busy

Research studies at Acadia National Park, Maine, are plentiful, and air quality station operator Bill Gawley is involved with many of them. A Physical Science Technician at Acadia since 1993, Bill says “air monitoring here at Acadia is unique in that all data collected are used as a baseline for numerous research projects.” One such project, funded by PRIMENet, is investigating the effects of landscape features on nitrogen deposition. Air quality monitoring data are an important component of this study.

Bill came to Acadia after graduating from the University of Rhode Island with a B.S. degree in zoology. In addition to running the NPS air quality station and assisting with other air monitoring programs at the park, Bill also monitors water quality at Acadia.

The park also operates a Web camera that is part of CAMNET, a joint State of Maine and NESCAUM air quality education project. You can use the Internet to see what the current conditions are at Acadia by logging onto <http://www.hazecam.net>. A real-time display in the visitor’s center is planned for the near future to educate people on the relationship between visibility and measured air pollutants.

Mike Fraser has been a seasonal technician at Acadia for three years, and assists Bill with day to day monitoring operations. Bob Breen heads up the air and water program at Acadia and is active in research coordination and permit reviews.



The NPS air quality monitoring staff at Acadia National Park, Maine, include program supervisor Bob Breen, primary station operator Bill Gawley, and seasonal technician Mike Fraser. The station is the base for ozone analyzers; UV-B and acid rain monitors; a nephelometer; aerosol, mercury deposition, and dry deposition samplers; and meteorology sensors.

The air quality station at Acadia is operating with the DataView system and Bill says it’s great. “The DataView system was installed in June and we’ve used it to poll and summarize weekly data,” says Bill. “We’ve just started using it in the past few weeks to document station operations.”

In his free time Bill keeps busy with his favorite pastime of singing, songwriting, and playing guitar. He also spends time with his wife and three kids, and enjoys boating and fishing. Outdoor recreation activities and research studies alike, are plentiful in and near Acadia. Bill Gawley keeps busy with a lot of them.

DATA COLLECTION SUMMARY

Data collection statistics for January through June 2000 are listed below.

- Sites with final validation of ambient air quality parameter collection greater than 90% include:

Canyonlands	Hawaii Volcanoes (Visitor Center)
Chiricahua	Joshua Tree
Denali	Lassen Volcanic
Death Valley	Mammoth Cave
Everglades	Mount Rainier
Grand Canyon	North Cascades
Great Smoky Mtns. (Cades Cove)	Olympic
Great Smoky Mtns. (Clingman’s Dome)	Sequoia - Kings Canyon (Lower Kaweah)
Great Smoky Mtns. (Cove Mountain)	Shenandoah
Great Smoky Mtns. (Look Rock)	Theodore Roosevelt
Hawaii Volcanoes (Observatory)	Virgin Islands
	Yellowstone
	Yosemite

- Sites with final validation of ambient air quality parameter collection greater than 80% include:

Big Bend	Pinnacles
Craters of the Moon	Rocky Mountain
Glacier	Sequoia-Kings Canyon (Ash Mountain)
Great Basin	Sequoia-Kings Canyon (Lookout Point)
Hawaii Volcanoes (Thurston Lava Tubes)	Voyageurs
Mesa Verde	

- The entire network achieved an average of 86.9% final validation of ambient air quality parameters.

Alarms

The *Alarms* window is displayed when first logging into DataView or selecting *Alarms* from the menu bar (see Figure 2). A variety of alarms are presented to quickly pinpoint abnormal data situations. If alarms exist, they will flash in yellow on the *Alarms* window. An alarm may be viewed and/or printed by single-clicking the flashing button. An alarm record is maintained in the station log for every event resulting in an alarm. An event is time-based and may represent various periods when the alarm condition existed.

After reviewing the alarms and taking appropriate action, the alarm record may be removed from the display by dismissing it. Note that this display only alerts the operator of the existence of an alarm condition.

Reviewing and/or dismissing alarms does not correct the problem, they just clear the alarm from the screen.

Ozone exceedances may be quickly viewed, as they will appear as an alarm on this window. Exceedances (defined by the National Ambient Air Quality Standard as over 85 ppb) are listed according to when and how many occurred).

Station Checklists

Weekly station visits and multipoint calibrations are easily performed by following the Checklist Instructions. The Checklists Instructions are provided in electronic format on the DataView computer, and also as hardcopy in the Site Operator's Manual.

The checklists are easier to read than the old standard operating procedures. They are much more graphic, keyed to individual tasks, and easily guide the operator through each step of the weekly station visit or multipoint calibration.

Current Averages

The *Current Averages Summary* window (see Figure 3) displays current minute and hourly averages (with associated statistics) of all measured parameters:

- Current date and time
- Last polled minute data, date and time
- Last polled hourly data, date, and time
- Daily rainfall
- Current reading

- Most recent minute and hourly averages for each channel
- Delta value (number of minutes or hours since previous reading)
- Daily maximum and daily minimum
- Current minute averages are automatically updated each minute, and hourly averages each hour.

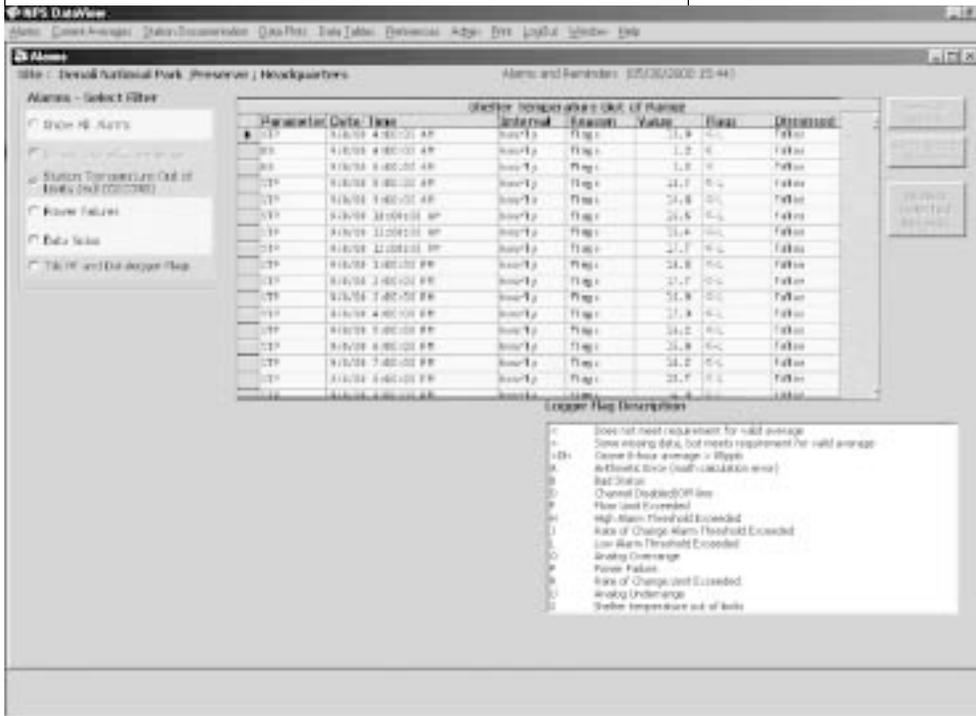
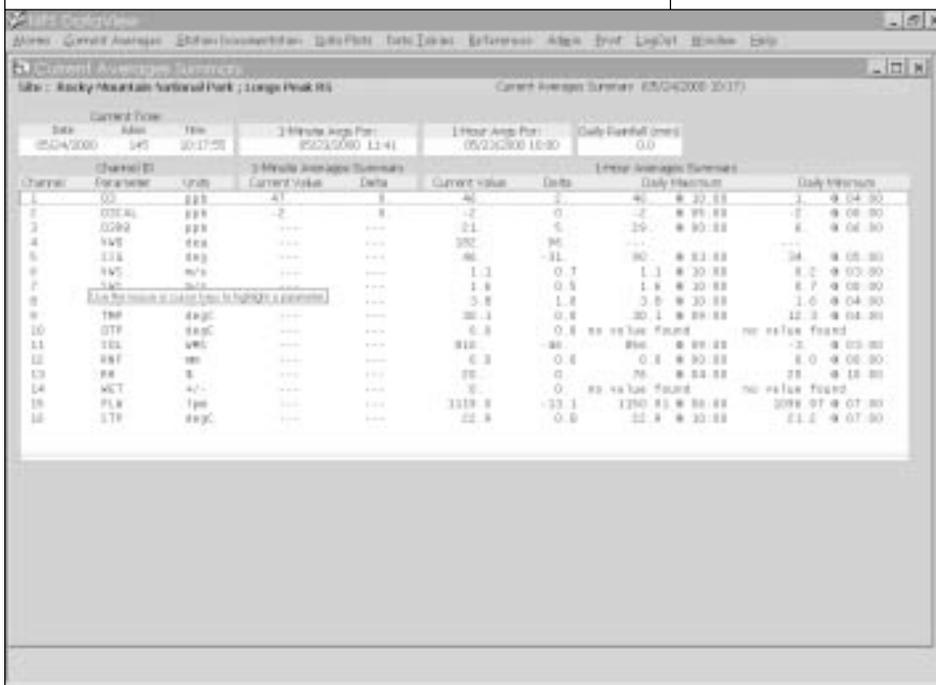


Figure 2. The Alarms menu displays immediately after logging onto DataView. Look here for conditions that require correcting or for ozone exceedances.

Viewing the *Current Averages Summary* provides a quick view of how each sensor and analyzer are working. This allows the user to easily see if the data averages are within reasonable limits and see which parameters are operating and which are not.

At this point, the field technicians can view the exact DataView screens as appears on your station's computer. Troubleshooting is quick and easy with DataView.



8-Day Pollutant Summary

The *8-Day Pollutant Summary* window, available from the *Data Tables* menu, displays the 1-day and 8-day maximum ozone concentrations and average ozone concentration (see Figure 4). The last 8 days of collected ozone data are listed. Viewing this screen may allow the user to determine if the ozone values appear reasonable for actual, observed conditions. It also provides a quick view of day-to-day ozone concentration changes.

Figure 3. The *Current Averages Summary* allows you to view current conditions at your station.

If a parameter is not being measured, or if the datalogger is not receiving it, or the value does not appear to be reasonable for the observed conditions, telephone the Network Operations staff at ARS. The field technicians at ARS have the ability to log onto DataView and directly onto your individual station to see what is occurring.

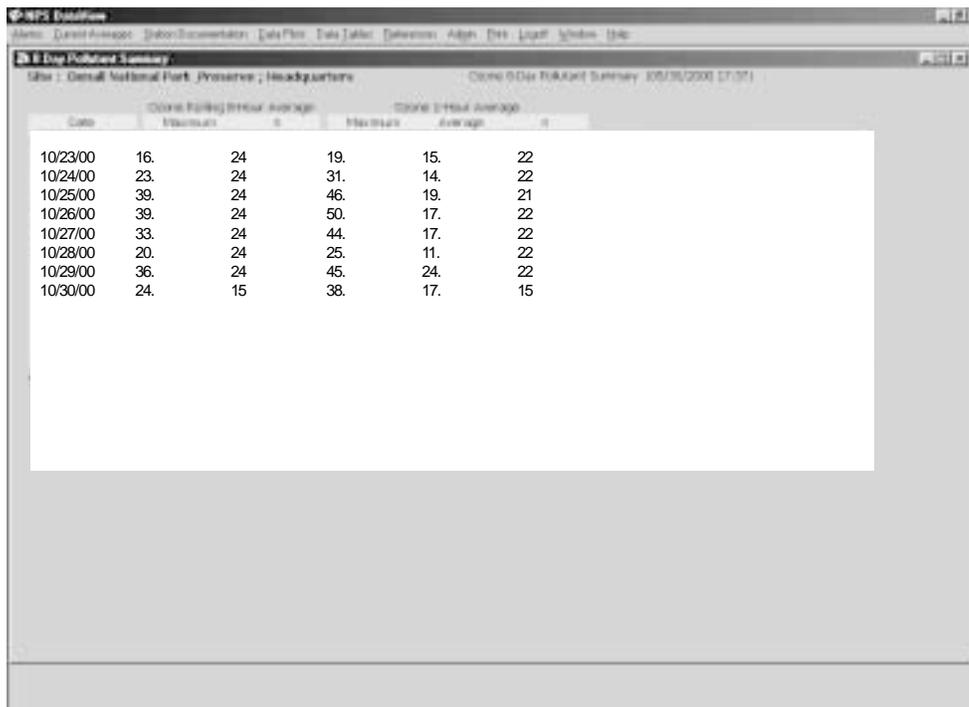


Figure 4. The *8-Day Pollutant Summary* screen lists both the 8-hour and 1-hour ozone averages.

Stackplots

Stackplots are available from the *Data Plots* menu and are plots of hourly data of all collected parameters (see Figure 5). They are an effective way to view the relationships among numerous data types over time.

Strip Charts

Strip charts are also available from the *Data Plots* menu. They provide a graphic view of a continuous 1-minute or hourly average data plot for one or more gaseous parameters. This plot is ideal for looking at the variations of a parameter over time and provides the user with a variety of plotting options. The strip chart is also a useful tool to watch data during gas analyzer calibrations.

Conclusion

By carefully reviewing current and past data, with a knowledge of local conditions, the operator is in the



Figure 5. DataView's Stackplot window provides a graphic view of many parameters.

best position to note data or operational inconsistencies that could influence the quality and quantity of station data.

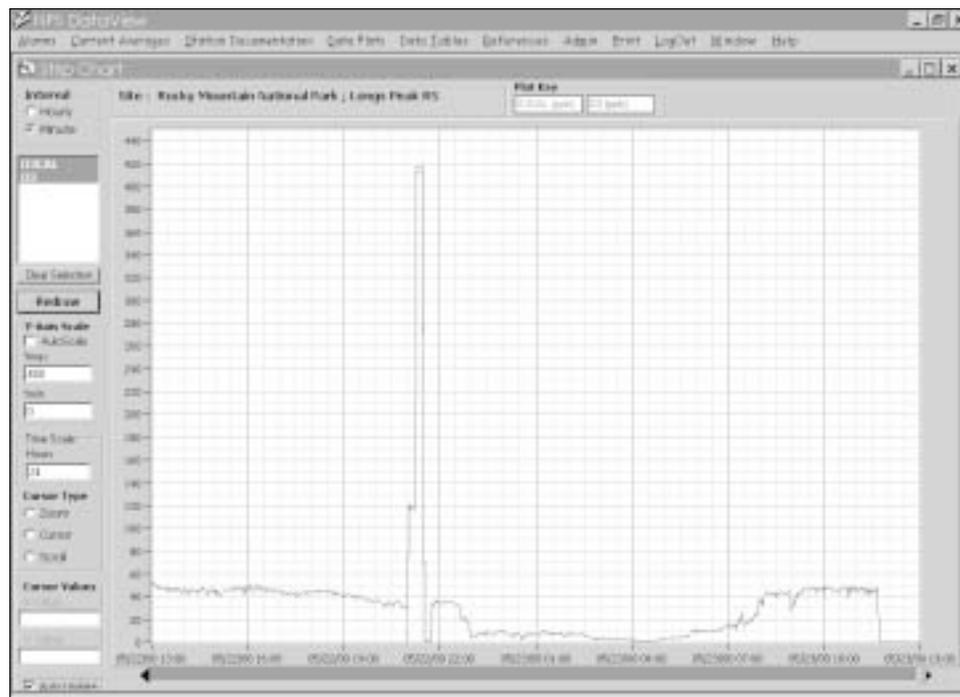


Figure 6. DataView's Strip Chart window provides a graphic view of ozone data.

Take the time to look at each menu option and develop the data display tools that best meet our needs. Don't be afraid to experiment and have fun. As always, if you have any questions, ARS Network Operations or Information Management Center staffs are available to help and are just a telephone call away.

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David Maxwell joins the NPS ARD

David Maxwell joined the National Park Service in June as monitoring specialist. He will provide contract management and administration, develop a budget, review and analyze ambient air quality monitoring data, resolve problems, and provide routine operation support for the visibility and gaseous pollutant monitoring networks.

David has a bachelor's degree in meteorology and a master's degree in air pollution control. He has worked for government agencies and private firms as an air quality scientist and meteorologist.

ARS and IMC personnel changes

Recent additions to personnel at Air Resource Specialists, Inc. include Jim Baer and Suzan Vanderslice. Jim is an air quality data technician in the IMC. If your data packet doesn't arrive on time, be assured Jim will telephone you regarding its whereabouts (data packets are still required to be mailed for those stations not yet on the DataView system). Suzan was hired as ARS' receptionist. She will greet you and direct your telephone call.

If you are new to the air quality network, meet Denise Yates and Sandy Camren. Denise, a 9-year veteran of ARS, assists station operators with supply requests. She also assists ARS field technicians with ordering and shipping supplies and equipment, and with network clerical support. Sandy has worked the telephones at ARS for 3 years. She now concentrates on document preparation and serves as back-up receptionist in Suzan's absence. Your telephone call will be answered by a real person unless the lines are all busy or it is after business hours. In these instances you may leave a voicemail message for anyone at ARS.



New to ARS are Jim Baer and Suzan Vanderslice. Voices you'll continue to hear are Sandy Camren and Denise Yates.



NEWS FROM THE FIELD

Amnesty period for return of equipment

Station operators, please take a few minutes to check your station and office for spare monitoring sensors or equipment and return them to ARS. Field specialists are too often finding spare monitoring equipment at air quality sites. In most cases these are sensors or instruments that have been replaced because of a failure, and the failed item was stuffed in the box behind the rack somewhere.

ARS is in desperate need of replacement sensors and fears that many pieces are out of circulation because someone didn't think it was wanted back, or they figured they would ship the item next week when they had more time. Please return all sensors as soon as possible. If you have any questions or need shipping assistance, please call ARS.

DataView comments requested

By now, most stations have had the DataView system installed. Those remaining will be installed by the end of this year. If you have been using DataView only for completing station checklists, please see this issue's feature article for additional DataView functions.

Thanks to Mary King of Rocky Mountain, Shane Spitzer of Shenandoah, Scott Berenyi and Larry Blackwelder of Great Smoky Mountains, and Alyssa van Schmus of Canyonlands for providing valuable written comments on DataView.

Written suggestions and corrections are welcome, and you may e-mail them to john_d_ray@nps.gov or fax them to 303/969-2822.

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NEWS FROM THE FIELD continued from page 7....

GRSM ends passive ozone study

Preliminary data are in for this summer's passive ozone study at Great Smoky Mountains National Park, and they indicate fewer high ozone days than during the past two years. Study results will provide researchers with data from specific areas of the park where vegetation is affected most by ozone exposure.

The study ran from May through September, with a core sampling period from June 19 through August 28, 2000. The study involved 60 monitoring sites and about 50 volunteers who hiked trails and changed weekly sampler filters. Information about the study is available on <http://www2.nature.nps.gov/ard/gas/o3study.htm>.

Access to data available on AIRWeb

Access to hourly data files and information about requesting data are available online, at the National Park Services' AIRWeb site, at <http://www2.nature.nps.gov/ard/gas/netdata1.htm>.

Available data include ozone, meteorological, acid deposition, visibility, and haze. Current ozone conditions and summary data are also available choices.

The Web site also provides instructions on requesting data in other formats or by other means such as floppydisk or ftp transfer.

Monitoring information may also be queried using the Monitoring History Database, provided on this Web site. The easy to use database generates site reports for all types of air quality and visibility monitoring performed since the late 1970s. The user may query the database to obtain specific monitoring locations, parameters, and monitoring periods.

Upcoming meetings

Air quality meetings scheduled for later this year include:

- PRIMENet - November 7-9 at Shenandoah National Park. PRIMENet (Park Research and Intensive Monitoring of Ecosystems Network) will present research and monitoring data for the 14 parks monitoring in the network.
- PAC training meeting - December 12-15, hosted by Channel Islands at the Sheraton Four Points in Ventura, California. The meeting will feature analysis of data techniques and the preparation of individual park summaries by the participants.

For more information, contact John Ray of the NPS ARD, telephone: 303/969-2820.

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