On The Air

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Signed Permitting Agreement is Good News for Great Smoky Mountains

John Bunyak

The State of North Carolina has decided to join the State of Tennessee and the Departments of the Interior (DOI) and Agriculture (DOA)--the Federal Land Managers—FLMs--as signatories to a permitting procedures agreement. North Carolina industry opposed the agreement because they felt it shifted regulatory burdens from the FLM to the permit applicant. However, North Carolina agreed with the FLMs that the permitting procedures agreement was reasonable, fair, lawful, and "good government," and it should improve and expedite the permitting process to the benefit of all concerns. Although North Carolina is willing to sign on, they proposed some clarifying language to the Tennessee agreement. These changes are acceptable to the other signatory agencies and a new agreement should be in place soon.

The original Tennessee permitting procedures agreement was established as part of the settlement of a contested air permit for a proposed project near Great Smoky Mountains National Park (NP). In April 1995, the State of Tennessee and DOI entered into a Memorandum of Understanding (MOU) to facilitate better coordination, communication, and consultation in the review of future permit applications. Tennessee industry opposed the MOU and petitioned the State to rescind it. In March 1996, before the MOU was ever applied to a single case, the State rescinded the MOU, over the objections of DOI.

After extensive negotiations, a new permitting procedures agreement, which includes DOA as a signatory, was signed in June 1997. Although the agreement alone will not resolve the air quality problems at Great Smoky Mountains NP, it will ensure more informed and better decision-making, and provide industry with the certainty it seeks in the permitting process. Under the new agreement, the signatories have committed to work with other States in the region to adopt similar agreements. ☆

SHEN Workshop on Enhanced Ozone Monitoring

John Ray

Researchers, Air Resources Division staff, Virginia Dept. of Environmental Quality representatives, and industry representatives met with park staff on December 15 to review findings from the monitoring and research activities at the Big Meadows air quality station. Ozone forecasters from the University of Maryland showed how the Shenandoah data was a leading indicator for peak ozone concentration forecasts in the Washington metro area. The air quality monitoring station at Big Meadows was found to be representative of regional air, to have slightly upward trending ozone, and decreasing values of carbon monoxide. In late August, it appears that ozone formation switches from NO_x-limited to VOC-limited. These are important findings for understanding the affects of different control strategies on ozone pollution at Shenandoah. Several technical journal articles are in the works to report findings from this several year study. More information on the enhanced monitoring program and meeting notes can be found on the web pages at http://www.nature.nps.gov/ard/gas/enhanced.htm. ☆

PRIMENet (alias) DISPro

Kathy Tonnessen

The NPS-ARD staged a gathering of the DISPro forces at the Marconi Conference Center, near Point Reyes National Seashore, in November 1998. At this "Second Annual DISPro Meeting," we made some big decisions. First of all we changed our name.

The new title of the NPS/EPA Interagency Research and Monitoring Program is PRIMENet, Park Research and Intensive Monitoring of Ecosystems Network. We also introduced our new web address at www.nature.nps.gov/ard/prime. The reason for the change is to reflect the fact that we have "moved on" past the "demonstration" phase for this network of fourteen park sites: ACAD, BIBE, EVER, CANY, SHEN, GRSM, THRO, VIIS, HAVO, SEKI, OLYM, GLAC, ROMO and DENA.

Eight new projects and an FY 99 amphibian initiative were introduced at this meeting of the PRIMENet partners. We discussed the stressor monitoring network operations and "leveraged projects" at the parks. We collected information from the parks on their amphibian issues, and discussed the organization of an "experts workshop" in early 1999 to come up with a work plan to spend $500K on amphibian studies. This workshop is now scheduled for February 1-3, 1999 in Duluth, MN, hosted by the EPA-ORD, Mid-Continent Ecology Division.

A highlight of our stay in Northern California was a visit to Point Reyes NS, with an excellent tour of the park with Bill Shook, Chief of Resources Management.

The funded PRIMENet projects include:

1) K. Pregitzer, Michigan Technological University, "Below ground ecosystem function: Merging long-term climate monitoring with soil, root and foodweb dynamics to understand mechanisms regulating C and N transformations at Olympic National Park"

2) P. Comstock, Boyce Thompson Institute of Plant Research, "Using the inter-relationships of stable isotopes in natural abundance as indicators of environmental stress and ecosystem vitality at Big Bend National Park, Glacier National Park and Sequoia-Kings Canyon National Park"

3) K. Weathers, Institute of Ecosystem Studies, "Atmospheric deposition in mountainous terrain: Scaling up to the Landscape at Acadia and Great Smoky Mountain National Parks"

4) J. Ehleringer, University of Utah, "Nitrogen deposition and UV-B stressor impacts in Canyonlands National Park as affected by climatic pulse events"

5) S. Kahl, University of Maine, "Inferring regional patterns and responses in N and Hg biogeochemistry using two sets of gauged paired-watersheds in Acadia National Park"

6) N. Grulke, US Forest Service, Pacific Southwest Research Station, "Does N deposition mitigate ozone injury to ponderosa pine in Sequoia-Kings Canyon National Park?"

7) B. McKane and B. Hogsett, Environmental Protection Agency, " Risk assessment of the effects of natural and anthropogenic stressors on ecosystems in Olympic National Park"

8) E. Heithmar, Environmental Protection Agency, "Contaminant screening study at twelve PRIMENet parks". ☆

Smile, Great Smoky Mountains, You're on Camera

Dee Morse

In Great Smoky Mountains National Park, air pollution seriously damages park resources. Visibility is impaired by a uniform haze that affects scenic vistas. Landscape features and colors fade, diminishing the experience of visitors to the park. Air pollution in the form of ground-level ozone threatens human health and vegetation. A variety of plant species (black cherry, yellow-poplar, sassafras, tall milkweed, and cutleaf coneflower) show symptoms of ozone injury to foliage. Other airborne pollutants, including sulfur and nitrogen compounds, result in acidification of some high-elevation streams, soils, and plants.

Currently, the park is using real-time data in an interpretive exhibit on air quality at the Sugarlands Visitor Center. The exhibit consists of two 3' x 9' panels. The panels display information about the cause and effect of air pollution at the park. Monitors in each panel are linked to air monitoring equipment at the park's Look Rock air quality station and observation tower and show current visibility, ozone concentrations, and meteorological conditions. An air quality brochure is also available at the visitor center for individuals who would like more in-depth information about air pollution impacts at the park.

At Look Rock, a digital zoom camera captures visibility images, a nephelometer gathers optical visibility data, an ozone analyzer measures ozone concentrations, and meteorological monitoring equipment collects weather-related information. The digital camera, mounted atop Look Rock observation tower, is aimed toward the crest of the Smoky Mountains to capture images characteristic of the park and familiar to visitors. The camera is equipped with a personal computer modem. The camera and support computer are housed in a secure, environmentally controlled enclosure.

The digital image is transmitted by telephone line and short-haul modem to the Look Rock air quality shelter. There, a datalogger and computer records measurements from the nephelometer, ozone analyzer, and meteorological sensors. Data collected by the datalogger and computer are sent every 15 minutes through a telephone line to a computer at Sugarlands Visitor Center and to a local Internet provider in Knoxville, Tennessee.

On each of the 21" monitors in the exhibit, three different display screens are cycled for the public to view. One screen provides a current video image from Look Rock and information on current visibility conditions, shown as visual range in miles. Static images of a good visibility day and a typical day (i.e., the current seasonal average) are also presented on the screen, inviting comparisons with current visibility conditions. A second screen provides information about current ozone concentrations at Look Rock. The current hourly concentration is displayed on the screen along with the previous day's maximum and minimum hourly ozone concentrations. In the lower half of the screen, a static scale shows public health-related effects from ozone. A third screen provides meteorological information from Look Rock. This includes current wind direction and speed, ambient temperature, relative humidity, and precipitation.

The real-time interpretive air quality exhibit at Sugarlands is also the first exhibit of its kind to present current monitoring data in a national park on the World Wide Web. The information from Look Rock is sent via the Internet to the Air Resources Division in Denver, Colorado. There it is published on the World Wide Web at http://www.nature.nps.gov/ard/parks/grsm/lookRockWeather.htm.

Funding for the exhibit and its link to the monitoring equipment was provided through a partnership with the NPS Air Resources Division, U.S. Environmental Protection Agency, Great Smoky Mountains Natural History Association, and Great Smoky Mountains National Park. ☆

Who are these Folks and why are they Smiling?

Kathy Tonnessen

1. They just found out the boat WILL be coming back to get them off the island.

2. They pooled their resources and won a lotto ticket, splitting the $45 equally.

3. It's December and they are enjoying the balmy weather, the crabcakes and the international fraternity of the semi-annual meeting of the International Air Quality Advisory Board (IAQAB) at Solomons, Md.

Yes, it's Number 3. Dr. Joel Baker of the University of Maryland hosted this meeting of the technical advisory group to the International Joint Commission (IJC). The IAQAB is responsible for advising the IJC commissioners on air quality issues along the U.S./Canada border. Kathy Tonnessen (ARD) has been a member of the IAQAB for six years, representing the area of ecosystem effects of air pollution. At the December meeting in Maryland we announced the release of the IAQAB's "Special Report on Transboundary Air Quality Issues." The focus of the report is on new and emerging air issues, such as persistent toxics and transboundary "harmonization" of air quality standards. The report is available on the IAQAB home page, http://www.ijc.org/boards/iaqab. Hard copies can be obtained from Kathy Tonnessen (kathy_tonnessen@nps.gov). ☆

RETIREMENT CLAIMS TWO FROM ARD

Effective January 3, 1999, Erik Hauge and Jack McPartland retired from the ARD.

Erik was a Planner in the Policy, Planning and Permit Review Branch, and was a charter member of the ARD when it was formed back in 1978. In total, Erik worked for the Federal government for 32 years. Long before "Partnering" was a buzz work, Erik was instrumental in forming Regional Air Quality Partnerships, in which Federal, State, Tribes, and other stakeholders worked together to address air quality problems in national parks and wilderness areas on a regional basis. After an around-the-word trip, Erik hopes to continue these partnership efforts as he embarks on a second career.

Jack was a monitoring specialist in the Research and Monitoring Branch. Although he was with the NPS for a relatively short period of time, Jack had another long career with the Bureau of Reclamation. While with the ARD, he was responsible for the coordination and administration of the ARD air pollution monitoring program. He was the prime contact for field operators and contractors. This position is presently being recruited. ☆

Project MOHAVE Update

Bruce Polkowsky

The National Park Service re-certified visibility impairment at Grand Canyon National Park, as attributable, in part, to the Mohave Power Project (MPP) in August of 1997. This re-certification was based on the results of available analyses and refinements of these results anticipated to come from new data acquired and analyzed as part of a $8 million field study, called Project MOHAVE, which included release of tracer from the MPP under a cooperative effort among the EPA, NPS and Southern California Edison (SCE), the operators of MPP. Since the State

of Nevada does not have an approved implementation plan for visibility protection, EPA must respond to the NPS re-certification. EPA held a public hearing in January 1998, and has since met with several interest groups concerning this action. As an independent action, the Grand Canyon Trust has sued SCE regarding violations of the opacity limits and sulfur dioxide emissions limits at MPP. The issues regarding control options for emissions from the plant are complicated due to several factors including the change of California's electricity rate structure to a competitive market which makes plant owners, not the rate-payers, liable for capital costs incurred for pollution control. In addition, the coal supply for MPP comes from mining operations on the Navajo and Hopi reservations and mining revenues are a major portion of tribal income. Another complicating factor is that the coal is transported from the mines to the plant via a water slurry pipeline, which uses water pumped from deep wells. There has been controversy over the effects of such water use. Any decisions affecting the future of MPP may impact broad negotiations currently underway on all water rights issues for the tribal and non-tribal lands in the Four-Corners area.

In December, SCE has made a public announcement of proposal to clean up emissions from the plant or agree to shut the plant down by 2008. The proposal anticipates an 80 percent reduction in sulfur dioxide emissions and addresses opacity concerns. Further discussions among interested parties, including DOI, to address details of SCE's proposal and whether a consensus resolution to all environmental and economic issues can be reached are underway on a party-to-party basis. A more collaborative process may develop over the next few months. The NPS-Air Resources Division and EPA will visit the plant to understand the engineering aspects of the proposal in February. In addition, DOI will continue to meet with the Hopi Tribe, Navajo Nation, and EPA representatives to understand the broader implications of any pollution control settlement. EPA is also proceeding with its effort to respond to the NPS certification of impairment under Clean Air Act rules by issuing an advance notice of proposed rulemaking as soon as the final report from Project MOHAVE is issued, both of which are expected in February. December's announcement by SCE is an important step in reaching a workable solution to MPP emissions and their effects on Grand Canyon National Park but much work remains to be done. ☆

1998 Year in Review

We have had a very busy and productive year here at the Air Resources Division. We've grown, stretched our limits, and hopefully made people more aware of the air resource issues and concerns of our parks. Here are some of our more noteworthy accomplishments:

- North Carolina signed onto the Permitting Procedures MOU just in the nick of time.
- The owners of the Mohave power plant have agreed -- conceptually -- to put on a full suite of pollution controls and the Project Mohave report is gestating into some final form.
- Mexico agreed to release findings and a report from the preliminary border air quality study and appears poised to proceed with BRAVO next summer.
- AQUIMS and FLAG are maintaining a steady course toward their intended objectives, receiving much interest and acclaim.
- DISPro got a new name (PRIMENet) and funneled major $$ into some really interesting research projects at our index sites.
- Information technology has allowed us to expand our reach -- with a great web site, intranet site and interactive/real-time displays.
- We're looking forward to clearer horizons with the imminent publication of an effective regional haze regulation and the implementation of the Air Quality/Fire policy;
- We're meeting our GPRA goal -- for now -- and have almost institutionalized the mantra of outcome/results-not-just-outputs.
- We hired 5 temporary interns and filled three permanent positions.
- The Natural Resources Initiative has been launched and will provide a vehicle for the next century (okay, decade or two) of air resource

management in the NPS. A golden opportunity to expand our horizons and provide better service to more parks and the public.

- Amphibians got to be a hot topic in DOI and we did our part in funding PRIMENet research in SHEN and BIBE. We also contributed to planning the DOI FY 2000 initiative on amphibians.
- We helped the National Atmospheric Deposition Program to celebrate their 20th anniversary and we began the process of adding nine new wet deposition sites at park units to augment the now-more-than 200 site network.
- We "spread the word" about our science and research results in such fora as the annual meeting of American Geophysical Union, International Snow Science Workshop, NADP Technical meeting, and American Waste Management Society Meeting.
- We helped EPA to focus on the air/water interface in devising the Clean Water Action Plan, which then provided the funds for 1999 deposition-related projects in parks as part of the NPS/USGS-WRD partnership.
- We publish our third regional air quality review that discusses air pollution and effects in parks of the Rocky Mountains and Northern Great Plains.
- We initiated the Adopt-A-Park Program that entails each ARD employee developing a close, interactive relationship with two parks of their choosing.
- We achieved a permitting victory when local support for park concerns caused Cardinal Glass, a large source proposed near Shenandoah National Park to withdraw their permit application.

An “Interim Air Quality Policy on Wildland and Prescribed Fires” was issued by EPA in May 1998. The policy, which was developed in cooperation with the NPS and other DOI bureaus, will help assure protection of air quality and visibility by requiring smoke management programs in States where fire is used by land managers to achieve resource benefits.

The NPS supported a decision by EPA to require through rulemaking a 1.1 million ton reduction in nitrogen oxide emissions from 22 eastern States and the District of Columbia. Implementation of the “NOx SIP call” rule should contribute to the achievement of ozone ambient standards throughout the eastern States, providing relief to sensitive park natural resources, visitors, and employees currently affected by unhealthful levels of the pollutant.