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FEDERAL/STATE ACTIVITIES

Grand Canyon Visibility Transport Commission (GCVTC): Work by the committees of the GCVTC is proceeding on schedule. Following the dozen or so public meetings in late January, the Alternatives Assessment Committee (AAC) finalized reports on potential emissions management options and evaluation criteria to assess the various options. Prior to engaging in a detailed assessment of the options, for which a Request For Proposals (RFP) is currently under development by the AAC, these reports must be approved by the Commission and selections made of the options to be evaluated. Several meetings are planned by GCVTC committees in March and April to finalize the RFP and to release it for bidding before this summer.

The NPS will once again be represented on the Commission with the acceptance of Boyd Evison, Superintendent of Grand Canyon National Park, as a Commissioner. Mr. Evison filled the Commission seat vacated by former Superintendent Bob Chandler's transfer to the Presidio. The Western Governors' Association project staff briefed Mr. Evison on the Commission's goals and activity status in February. The next meeting of the GCVTC is scheduled for March 28 in Phoenix. (Brian Mitchell)

Virginia Air Quality Regulations: Working with Shenandoah NP staff, the Air Quality Division (AQD) provided comments to the State concerning proposed regulations for an operating permits program for stationary sources and permit/emissions fee provisions to be implemented under the operating permit program. The NPS asked the State to consider provisions that would help protect park resources from air pollution generated by Virginia sources, including better notification and consultation procedures with affected Federal land managers during the permitting process. While the Environmental Protection Agency requirements for State operating permit and fee programs provide States with substantial flexibility in developing their own programs, the Virginia General Assembly, unfortunately, has restricted the State's air agency from adopting progressive measures or incentives to improve air quality through these rulemakings. (Julie Thomas-SHEN Resource Management, Mitchell)

OUTREACH ACTIVITIES

Big Bend National Park Presentation: At the invitation of Superintendent Rob Arnberger and Chief of Interpretation Dennis Vasquez, Miguel Flores travelled to the park to make a presentation on the effects of the Carbon I and II power plants on the park's visibility. Numerous local residents (including school children) joined park staff in learning more about the air quality impacts from these Mexican power plants. Residents and park staff expressed their concerns about the dramatic changes to the park's visibility predicted to occur as a result of the power plant's emissions. While at the park, Flores met with science and resource management staff and visited the air quality monitoring station accompanied by Betty Alex and Keith Yarborough. Flores also visited the site of a proposed air strip to be located near the monitoring station. The AQD will be assessing the potential impacts of the proposed air strip on measurements made at the park.

Sequoia/Kings Canyon NP Air Quality Wayside Exhibit Proposal: The AQD received and reviewed a layout design for an air quality wayside exhibit from Sequoia/Kings Canyon NP. The exhibit is entitled "Silence and Clean Air" and will inform visitors about the beauty of silence and clean air. The AQD will provide funds to construct the exhibit.

Grand Canyon NP Air Quality Brochure: The AQD received a request from Grand Canyon NP for funds for the printing of an air quality brochure entitled "Where the Earth is the Floor of the Sky." The brochure will inform the public about air quality concerns on the Colorado Plateau. The draft brochure was reviewed and approved by the AQD last fall. Park units on the Colorado Plateau will all benefit from this regional air quality brochure.

TRAINING

"Addressing Air Quality Issues - Park Managers" Training Course Preparation: An air quality training course for superintendents, assistant superintendents, and division chiefs is scheduled for May 3-5, 1994, in Denver, Colorado. The AQD prepared objectives and a tentative agenda for the course. The course will provide park managers with: 1) an understanding of how air pollution affects park resources and recognizing the importance of taking early action; 2) an understanding of their air resource management responsibilities, and the mandate and authorities to protect air resources in the NPS units based on existing and new legislation and regulations; 3) recognizing when action should be initiated and identifying the processes to assist them in resource protection; 4) acquiring knowledge from other park managers about how to properly negotiate sensitive air quality issues in external decision-making arenas; 5) an understanding of the roles and responsibilities of various NPS organizational elements and how their own responsibilities are related to these elements; and 6) acquiring a knowledge of strategies for dealing effectively, efficiently, and cooperatively with new legal requirements.
(John Bunyak)

TECHNICAL SUPPORT

Grand Canyon National Park: The AQD participated in a Resource Management Plan (RMP) development workshop for the park in early February in Flagstaff. The park brought together subject matter experts from many disciplines to help formulate project statements to address resource management issues facing the park. The AQD will continue to provide assistance to park staff, as needed, to refine and complete the RMP documentation drafted at the workshop.
(Erik Hauge and Brian Mitchell)

Emissions Inventory Survey: The AQD is preparing an emissions inventory questionnaire for distribution to the parks and regions. The survey will help to identify air emission sources in the units, so that we can determine what our responsibilities and liabilities are under new and existing State and Federal laws. In addition, the data will provide information regarding how NPS can prevent and reduce pollution within the parks, to set an example for protecting park resources.

The Clean Air Act was revised significantly in 1990, and may require NPS to obtain operating permits, pay fees, and reduce emissions for air emission sources within NPS areas. These requirements may apply to sources owned and operated by concessionaires and private entities, as well as to sources owned and operated by the NPS. The survey will allow us to identify what actions need to be taken to comply with these new requirements. States may begin requiring operating permit applications for certain sources as soon as this fall. Because of the number of NPS units, we will be submitting the questionnaire to the units in phases. We will ask that units

identify fuel burning equipment, mobile source use, gas stations, and other emitting activities within the unit. Once the questionnaire is received, the AQD will be available to provide assistance in completing the form. (Cathy Rhodes)

Arctic Wildlife Refuge-Ambient Air and ARCO Offshore Oil Rig Permit: In the Fall of 1993 EPA Region X issued an Outer Continental Shelf/Prevention of Significant Deterioration (OCS/PSD) permit for the ARCO Alaska Inc.'s Beaufort Sea Project, an oil drilling project located in the Beaufort Sea, 6 miles north of the Arctic Wildlife Refuge, a Class II area administered by the U.S. Fish and Wildlife Service (FWS). The FWS was not notified of the pending permit and thus did not participate in the review of the proposed permit. After learning of the permit, FWS did submit comments to EPA Region X after the close of the official comment period. The PSD permit allows the offshore oil rigs to emit 4,624 tons per year (TPY) of NO_x and 165 TPY of SO_2. In this permit action, EPA granted a 3-mile diameter exclusion zone and designated it as non-ambient air, where the National Ambient Air Quality Standards (NAAQS) and PSD increments do not apply. This decision sets a disturbing precedent, by allowing violations of the NAAQS and/or Class II PSD increments within 3 miles of the Arctic Wildlife Refuge. In its letter to EPA, the FWS cited past EPA policy memoranda in which EPA had determined that the NAAQS and PSD increments do not apply within property owned or controlled by an air pollutant source to which the general public does not have access. In previous cases EPA has determined that the public does not have access if there is a fence, a physical barrier, or is patrolled by security guards. For instance, EPA decided that a river bank is not by itself a physical barrier, and that the river bank had to be fenced or patrolled. However, in all past cases, the air over the waterway **was** ambient air where the NAAQS and PSD increments apply. In no case are **navigable waters** off limits to the definition of ambient air, yet, in this specific case, 28 square miles of **navigable waters** are off limit to the public. The conditions set forth in the permit calls for patrol boats and signs to be placed on the ice. There is no fixed 3 mile ring for the patrol boats to follow such as a river bank, and ice flows with the posted signs on them will move. A letter with the above rebuttal of the EPA Region X decision is being sent by FWS to EPA Headquarters. (John Notar)

GASEOUS POLLUTANT MONITORING

Annual Data Summary Reports: Annual gaseous pollutant summary reports for 1992 have been prepared for Great Smoky Mountains National Park (Cove Mountain Site) and Indiana Dunes National Lakeshore. Final ozone, sulfur dioxide and meteorological data are included, as well as graphs and summaries of the data. These reports were sent to the parks and the Regional Air Quality Coordinator.

Calibration and Maintenance Visits: Table 1 and 2 list the semi-annual calibration and maintenance visits conducted during February 1994 and those to be performed March through June 1994. This is a proposed schedule. Visits by monitoring support personnel will be scheduled with the site operators by the visitor. Site operators, park superintendents and regional air quality coordinators will be given a 2-week written notice of the site visit once arrangements for the visit are finalized. (Ron Lawler Heavner)

NAAQS Exceedances: The primary and secondary NAAQS for ozone is 0.12 ppm, not to be exceeded more that one time per year. The sulfur dioxide NAAQS has both a primary and secondary standard. There is a annual average primary NAAQS for sulfur dioxide of 0.03 ppm and a 24 hour primary NAAQS for sulfur dioxide of 0.14 ppm. The secondary NAAQS for sulfur dioxide is a 3-hour standard of 0.5 ppm. The 24-hour primary standard and 3-hour secondary

standard are not to be exceeded more that one time per year. A primary standard is for the protection of public health. A secondary standard protects the public welfare from any known or anticipated adverse effects from a pollutant. All national primary and secondary ambient air quality standards can be found in 40 CFR part 50.

The raw data for February 1994, indicates that all National Park Service areas with monitoring sites were below the ozone National Ambient Air Quality Standards (NAAQS) during the month. The maximum hourly ozone concentration measured during the month was 0.070 ppm on February 26, 1994, at Joshua Tree National Monument.

Hawaii Volcanoes National Park may have exceeded the primary 24-hour NAAQS for sulfur dioxide during the month. On February 14, 1994, the park recorded a 24-hour average sulfur dioxide concentration of 0.167 ppm and on February 16, 1994, the maximum hourly sulfur dioxide concentration during the month was measured at 0.733 ppm. (Bob Carson)

NBS/NPS BIOLOGICAL EFFECTS

Research Paper Presented by National Biological Survey (NBS) Staff: Bruce Nash was a coauthor on a research paper presented at the 1994 Joint Potomac and Northeastern Divisions Meeting of the American Phytopathological Society. The paper was entitled, "Cryphonectria parasitica cankers on scarlet oak (Quercus coccinea) in Pennsylvania." The paper summarized a field survey to characterize and quantify cankers on oak trees caused by the chestnut blight fungus. (Nash)

National Air Quality Research Program Submits Proposals to NBS: In February the NBS solicited proposals for specific types of research to be conducted in several "critical ecosystems." The National Air Quality Research Program (NAQRP) responded by submitting six proposals prepared by NAQRP, NPS-AQD, and cooperators from various universities and NPS units. The proposals covered a range of air quality issues at Great Smoky Mountains and Shenandoah National Parks, including development of a quantitative indicator of plant response to oxidative stress, tree-ring chemistry as an historical record of soil acidity, impact of episodic acidification of native fisheries in the southern Appalachians, development of biological assessment methods to determine effects of surface-water acidification on amphibians, biological assessment of ozone effects on terrestrial vegetation, and compilation of a regional assessment of the status of air quality and the effects of air pollutants in the southern Appalachians. (Nash, Tonnessen)

USDA Forest Service Will Use ForestHealth Expert System: The USDA-Forest Service Forest Health Monitoring Program has requested copies of the ForestHealth Expert Advisory System for its 13 State and regional cooperators. The computerized system will be used to train field personnel evaluating injured hardwood leaves and to maintain quality control across the 13 States involved in the 1994 Forest Health Monitoring field season. The ForestHealth System is the product of a partnership which includes Penn State University, the USDA-Forest Service, the NPS, and the NBS. The system has been used by field crews evaluating foliage at Acadia, Great Smoky Mountains, and Shenandoah National Parks. (Nash)

The Nature Conservancy (TNC) Heritage Program Meeting: AQD and NBS staff met with staff from the Nature Conservancy's Western Region Heritage Program. This information-sharing meeting was held in Boulder at TNC's regional office. Mary Klein, Federal Projects Coordinator, and Craig Groves, Director of the Western Heritage Task Force, explained the work of the Heritage Program and their biological and conservation data system. AQD staff explained the

NP Lichen, NP Flora, and BIOLEFF data bases and their uses. NBS staff explained the ozone effects research and the acid deposition research studies being conducted under their direction. Development and uses of an expert system were also discussed. The meeting will hopefully lead to future cooperative efforts. (Ferrin, Nash, Tonnessen)

International Air Quality Advisory Board (IAQAB) Meeting in Bangor, Maine: Kathy Tonnessen participated in a 2-day meeting of the IAQAB of the International Joint Commission (IJC) with other U.S./Canadian board members. The information-gathering part of the meeting included presentations by researchers from Maine Department of Environmental Protection and University of Maine at Orono on the subjects of the Gulf of Maine Oxidant Study and the potential for mercury bioconcentration in freshwater ecosystems in Maine. The second day we discussed writing assignments for the report of the IAQAB to be presented to the IJC at the semi-annual meeting scheduled for April in Washington, D.C. At that time three new U.S. Commissioners will be introduced to the advisory board members. For this semi-annual report Kathy will prepare an article on monitoring activities currently conducted in protected areas along the U.S.-Canada border. (Tonnessen)

Biological Effects Staff Consults with Members of Monitoring and Data Analysis Branch (MDAB): Bioeffects staff from the NPS-AQD and the NBS met with MDAB members to exchange information on program activities and look for opportunities for collaborative research and monitoring. We heard presentations on the Gulf of Maine Oxidant Study, testing of passive ozone monitors, development and prototype testing of the Air Quality Atlas, use of kriging to analyze NADP wet deposition data for NPS units, and re-evaluation of the trends monitoring network to focus on "threat-based" monitoring of air pollutants. We proposed collaborative work to test passive ozone monitors during the "Project Forest" field surveys in summer 1994 at Sequoia National Park. There was also discussion of a "saturation" program of ozone monitoring at Mount Rainier National Park this summer by Dave Peterson (NBS-CPSU, Univ. of Washington) to detect ozone hotspots. NPS/NBS staff made plans to continue work on a publication reporting trends in air pollutants and biological effects. (Tonnessen, Flores)

NBS Staff Assist Fish and Wildlife Service, Air Quality Branch (FWS) in Program Design: Kathy Tonnessen (NBS) and Bruce Nash (NBS), met with Sandra Silva (FWS) and Ellen Porter (FWS) to discuss FY 94 workplans for air-quality related values (AQRVs) projects needed at Class I refuges, including Brigantine Wilderness Area (WA), Chassahowitzka WA, Okefenokee NWR, and Moosehorn NWR. A two-part program was recommended that would include: (1) the development of a data base management system and decision-support system that could be used to organize and interpret information of air quality and effects on AQRVs in any Class I area, using Brigantine as the prototype, (2) collection of vegetation species and cover type data for each of the target refuges. NBS staff have developed a preproposal for this project that is being reviewed by FWS and NPS air quality specialists. (Tonnessen, Nash)

NPS/NBS Researchers Plan Rockies Snow Survey with the USGS: During spring 1993 USGS snow scientists, with assistance from NPS personnel, collected peak snowpack samples at sites along the Continental Divide from Glacier National Park south to the Sangre de Cristo Mountains of New Mexico. This field survey was designed to identify "hotspots" in the mountainous areas of Montana, Wyoming, Colorado, and New Mexico where snow chemistry or stable sulfur isotope concentrations might indicate the influence of pollution sources. On February 28, NBS/NPS staff met with USGS investigators at the Federal Center in Lakewood to review the snowpack chemical and physical data from that 1993 survey and to plan for a similar survey during spring 1994. High concentrations of sulfate and nitrate were measured at

sites near the Mt. Zirkel Wilderness Area in Colorado and near the western boundary of Yellowstone National Park in Montana. This 1994 field season, NBS/NPS efforts will focus on snow collection in Rocky Mountain, Grand Teton, Yellowstone, and Glacier NPs, with bulk deposition collections at Dinosaur National Monument in Colorado. A number of Agencies will contribute to this 64-site field effort: USGS, NPS-AQD, NBS-National Air Quality Program, NBS-GLAC, and park staff at the sampling locations. Funding Agencies include: USGS, USDA-FS, NBS, NPS-AQD, State of Colorado, and Public Service Co. (Tonnessen, Ferrin, Vimont)

NBS Participates in Planning for the International Union of Geodesy and Geophysics (IUGG) General Assembly: Every 2 years the IUGG holds a conference that includes symposia and workshops sponsored by international geophysical associations, such as the International Association of Hydrological Sciences (IAHS). In July 1995 the IUGG Assembly will take place over a two-week period at University of Colorado, Boulder. Kathy Tonnessen (NBS) and Mark Williams (CU-Boulder) proposed a two-day symposium on "Biogeochemistry of Snow-Covered Catchments" which was accepted by the organizing committee. Co-chairs include snow scientists from the UK, Canada, and the U.S. (USGS and DOD-Army). Abstracts for the meeting are due May 1, 1994, with all contributors required to submit papers to be published prior to the meeting date. On February 28 Kathy met with the IAHS organizing committee at the Federal Center in Lakewood to get information on abstract selection, conference funding and logistics, and production of the symposium publication. (Tonnessen)

NBS, National Air Quality Research Program Staff Confer on Regional Center Organization: On February 15, Kathy Tonnessen and Bruce Nash travelled to Fort Collins to meet with other staff transferred to the NBS-National Ecology Research Center (NERC). At this meeting they conferred with Tom O'Shea, Assistant Director of NERC, and organized a unit called "National Atmospheric and Watershed Ecosystem Programs." Members of this new unit within NERC include Ray Herrmann (coordinator), Kathy Tonnessen, Bruce Nash, Al Riebau, Mike Sestak, Lucinda Smith, Doug Ouren, Liz McCrory and Bob Stottlemyer. The coordinator position will rotate among the program leaders on a yearly schedule. This unit includes nationally-focussed programs on watershed biogeochemistry, air quality effects research, and global change issues that had been developed within BLM, NPS-WRD, and NPS-AQD. (Tonnessen, Nash)

VISIBILITY

There were no Air Resource Specialists field service visits to IMPROVE sites or IMPROVE Protocol sites during the month of February. Field service visits scheduled during the next 3 months are listed in Tables 3 and 4.

Reprints of two papers coauthored by AQD Research Staff have been received from the publishers. One of the papers, "Examining the Relationship Between Atmospheric Aerosols and Light Extinction at Mount Rainier and North Cascades National Parks," reports on the apportionment of various aerosol species to measured fine mass concentrations and ambient scattering coefficients observed during the PREVENT study period. The other paper, "Spatial and Seasonal Trends and Particle Concentration and Optical Extinction in the United States," analyzes the fine particle data collected as part of the IMPROVE program since 1988. Copies of these papers are available to interested parties by calling (303) 491-8292.

TABLE 1
GASEOUS POLLUTANT CALIBRATION AND MAINTENANCE VISITS

SITE LOCATION	VISITED BY	DATE
Hawaii Volcanoes NP and Haleakala NP	John Faust (ARS)	February 6-10
Redwood NP and Lassen Volcanic NP	Mike Bagby and Dave Meisters (ARS)	February 14-19
Death Valley NM and Joshua Tree NM	Mark Tigges (ARS)	February 27-March 4

TABLE 2
GASEOUS POLLUTANT SCHEDULED CALIBRATION AND MAINTENANCE VISITS

SITE LOCATION	TO BE VISITED BY	DATE
March		
Craters of the Moon NM	Mitch Walker (ARS)	March 10-11
Indiana Dunes NL	John Faust (ARS)	March 21-22
Rocky Mountain NP	Dave Meisters (ARS)	March 24-25
Mammoth Cave NP	Mitch Walker (ARS)	March 24-25
Shenandoah NP	Robert Lehman (ARS)	March 28-31
April		
Mesa Verde NP	John Faust (ARS)	April 18-20
Big Bend NP	Dave Meisters (ARS)	April 18-19
Great Basin NP	Mark Tigges (ARS)	April 25-27
Great Smoky Mountains NP	John Faust and Mike Bagby (ARS)	April 26-May 1
May		
Pinnacles NM	Dave Meisters (ARS)	May 2-3
Denali NP	Mike Bagby (ARS)	May 23-25
Yellowstone NP	Mark Tigges (ARS)	May 25-27
June		
Grand Canyon NP	Dave Meisters (ARS)	June 2-3
Yosemite NP	Robert Lehman (ARS)	June 6-10

TABLE 3
FIELD SERVICE VISITS - IMPROVE MONITORING SITES
MARCH - MAY 1994

SITE NAME	PURPOSE	DATES
Rocky Mountain NP	Annual Site Servicing	03/23
Shenandoah NP	Annual Site Servicing	04/25 - 04/29
Grand Canyon NP (South Rim)	Annual Site Servicing	05/16 - 05/18
Grand Canyon NP (In Canyon)	Annual Site Servicing	05/18 - 05/20

TABLE 4
FIELD SERVICE VISITS - IMPROVE PROTOCOL MONITORING SITES
MARCH - MAY 1994

SITE NAME	PURPOSE	DATES
Petrified Forest NP	Annual Site Servicing	04/11 - 04/15