The National Atmospheric Deposition Program (NRSP-3)
Technical Committee Meeting
September 21-24, 2004, Halifax, Nova Scotia, Canada
General Business Meeting Minutes

Wednesday, September 22, 2004
Program Chair, Gary Lear, called the 28th annual National Atmospheric Deposition Program (NADP) Technical Committee meeting to order. The setting, Halifax in September, invited participation from the Canadian and U.S. monitoring communities, and Gary thanked the Canadians for hosting the meeting. He welcomed participants and invited them to introduce themselves and state how many NADP meetings they had attended. Participants in the business meeting and scientific symposium are listed at the end of this report.

Action - Approve Meeting Minutes: Approve the minutes of the 2003 NADP Technical Committee meeting on October 21, 2003, in Washington, D.C.
Moved, Seconded, Carried Unanimously.

Reports —

Agriculture Advisor, Ray Knighton, U.S. Department of Agriculture (USDA), Cooperative State Research, Education, and Extension Service (CSREES)
Ray Knighton spoke on behalf of the CSREES and Regional Agricultural Experiment Station Administrative Advisors.

- Announced that approval of NRSP3 had been extended from September 2007 through September 2008, the end of the sixth fiscal year.
- Encouraged all NRSP-3 participants to send their annual progress reports to the Coordination Office, so this information could be summarized and included in the NRSP-3 annual report.
- Reported that the CSREES Air Quality Program had awarded a total of $10M through the end of its second year (fy2004). Ray is the CSREES National Program Leader for air quality research programs, which focus on emissions production and mitigation (including greenhouse gases) from agricultural practices. A solicitation for the fy2005 national research initiative on air quality was released several weeks ago (September 3). He encouraged participants to check the announcement for research topics of interest to them; topics include wet deposition.
- Described briefly the National Ecological Observatory Network (NEON), a multi-disciplinary program designed to investigate ecological phenomena at regional to continental scales and on a long-term basis. NEON is supported by the National Science Foundation, which recently announced that Bruce Hayden of the University of Virginia had received an award to direct the NEON project office. Ray represents the USDA to the NEON program. He invited meeting participants to send him their comments and suggestions for the program.
- Introduced a program, entitled the integrated Earth Observation System, which is planning systematic observations of earth's natural resources. Planning involves representatives of the G-11 governments. Ray is the USDA representative to a U.S.

group involved in the planning. The NADP should have a role in this system and needs to be aware of the efforts to plan and implement it.

NTN Advisor, Mark Nilles, U.S. Geological Survey

Mark Nilles recounted that he joined NADP in 1991 at the end of the 10-year National Acid Precipitation Assessment Program, when there was talk of down-sizing NADP. In 1996, the U.S. Geological Survey planned to eliminate NADP support, and the Environmental Protection Agency threatened to reduce NADP support. At the same time, NADP had approved the addition of a new network, the Mercury Deposition Network. Mark posed the question, "Why has NADP grown?" Reasons he cited include:

- NADP is a voluntary program, comprising agency representatives and scientists who want the data for a host of reasons, including modeling, monitoring the progress of the effect of air quality regulations, etc.
- NADP has broadly diversified funding, so there's no single agency that "runs" the program and can eliminate support or radically change the direction of the program.
- NADP has a shared infrastructure and interdependence among its supporters.
- NADP data are free for all to use without restriction.

Mark recommended that the NADP needs to continue to increase program awareness, encourage data use, and leverage opportunities to sustain and expand the program.

Program Office, Van Bowersox, NADP Coordinator

Van Bowersox gave a report on the "State of NADP - 2004."

- Described the cooperative effort with the Canadians to develop parts of the *NADP 2003 Annual Summary* (see: http://nadp.sws.uiuc.edu/lib/data/2003as.pdf). Data from the integrated NATChem database were used to develop sulfate and nitrate maps for eastern North America. He thanked the Canadians for their contributions to the annual report, their assistance in hosting the meeting, and their hospitality.
- Promoted the NADP Web page and the data usage by scientists all over the globe. Among the features is an interface that lets users retrieve data by hydrological watersheds (see: http://nadp.sws.uiuc.edu/sites/ntnmap.asp?).
- Demonstrated the animated time series maps of sulfate concentrations from 1985 through 2001 and discussed how these maps show the effects of sulfur emissions reductions on precipitation quality. Animated time series maps (sulfate, nitrate, & ammonium concentrations and sulfate, nitrate, ammonium, and dissolved inorganic nitrogen depositions) can be viewed on the NADP Web site and are available for download (see: http://nadp.sws.uiuc.edu/amaps/).
- Demonstrated paired sulfate and ammonium concentration maps from 1986 through 2001. These maps display the significant changes in the balance of sulfur and nitrogen species in U.S. precipitation over the last 15 years. Atmospheric Integrated Research Monitoring Network (AIRMoN) data were used to show how the ratios of ammonium to sulfate have increased, signaling a shift in our chemical climate.
- Presented maps that show spatially interpolated mercury concentration and deposition fields. Spatial interpolations were shown where there were 2 or more data points within 500 km of a grid point. This approach had been endorsed by the Data Management and Analysis Subcommittee and was used for the mercury maps in the *NADP 2003 Annual Summary.* It will be used in making future mercury maps.

- Emphasized the need for more MDN sites so that the NADP can present a more complete picture of mercury concentration and deposition fields, which will help improve our understanding of mercury source/receptor relationships.
- Showed a map of the co-located NTN and MDN sites and emphasized that co-located data add value to both programs, because scientists can better examine the relationships among the chemicals measured by both networks.
- Current network status: 259 NTN sites + 2 precision sites; 84 MDN sites + 2 intercomparison sites; and 8 AIRMoN sites. There are 29 NTN sites with a data record spanning 25 years, and over half of the NTN sites have a record that exceeds 20 years. About half of the MDN sites now have more than 5 years of data.
- Listed the 5 journals with the most articles using or citing NADP data in 2003: *Atmospheric Environment* (15 articles), *Environmental Pollution* (9 articles), *BioScience* (8 articles), *Journal of Geophysical Research - Atmospheres* (7 articles), and *Biogeochemistry* (6 articles); 85 journal articles, published in 2003, have been identified so far. Citations for articles using or citing NADP data can be retrieved from the on-line bibliography available on the NADP Web site (see: http://nadp.sws.uiuc.edu/lib/bibsearch.asp).
- Eleven papers from the 2003 NADP Technical Committee meeting and Ammonia Workshop have been accepted for publication in a special section of an upcoming (2005) issue of the journal *Environmental Pollution.*
- NADP data and maps appeared in two new textbooks, *Chemistry, A World of Choices* and *Environment, the Science behind the Stories*.
- Karen Harlin, Bob Larson, and other Water Survey staff members worked with American Chemical Society (ACS) staff to develop an activity for students participating in the ACS-sponsored Earth Day program on 22 April 2004. The activity, entitled *Testing the pH of Rain Water*, involved assembling a rain collector from household materials, measuring rainfall pH with indicator strips, and logging on to the NADP Web site (see: http://nadp.sws.uiuc.edu/earthday/), where students could compare their measurements with those from the nearest NTN site and print a certificate of completion. This activity increased participation in the ACS Earth Day program by three-fold over 2003. For helping to develop this very successful activity, the ACS awarded Karen and the NADP a “Salute to Excellence” plaque.
- Reported on Program Office participation in the University of Illinois Extension Program, *Environmental Stewardship Week*, designed to engage elementary school students in the environmental sciences. Chris Lehmann and Scott Dossett led students through experiments to test the pH of some common household chemicals, as well as rain samples from the NTN and water from a central Illinois lake.
- Reported that selected filters used to remove insoluble material from NTN samples are being sent to the USDA Cereal Disease Laboratory in St. Paul, Minnesota, where they will be examined for evidence of soybean and wheat rust. Both of these plant pathogens are spread through dispersal of airborne spores, which can be scavenged and deposited by precipitation. This is a pilot study to assess the feasibility of the use of these filters to detect spores in rain samples and perhaps use this information to herald the spread of these airborne plant pathogens.

Executive Committee, Gary Lear, NADP Chair, U.S. Environmental Protection Agency

Gary Lear summarized Executive Committee activities from its June and September meetings.

- Approved the FY05 Program Office budget, including reductions to accommodate a cut in off-the-top support from the Agricultural Experiment Stations.
- Approved a reduction in MDN coordination fees from $3000 per site per year to $2700 (effective October 2005); also approved an optional $500 add-on that would be included in first-year coordination fees to offset costs at new MDN sites wanting Program Office assistance in field equipment installation and on-site training.
- Simplified the process for handling archival sample requests by establishing a committee authorized to review and approve requests without further Executive Committee deliberation.
- Approved the elimination of support for field chemistry measurements, effective 1 January 2005, at all NTN sites. Gary asked Chris Lehmann to present an overview of NADP subcommittee and committee deliberations on field chemistry measurements. Chris reported that a white paper/brochure was under review for distribution to site sponsors and personnel, and he summarized the main points addressed in this document, which was prepared by Chris, Cari Furiness (NADP Vice Chair), and Natalie Latysh (Network Operations Subcommittee Chair). Gary summarized the joint subcommittee and Budget Advisory Committee recommendations and Executive Committee action to terminate support of field chemistry measurements. He invited participant discussion.

Discussion: There was a question about distributing the brochure. It will be sent to all site personnel after final modifications are completed. The Central Analytical Laboratory (CAL) will distribute instructions on how site personnel should handle field chemistry supplies and instruments. It was noted that pH and conductance meters should not be sent to the CAL.

Network Operations Subcommittee (NOS) - Natalie Latysh, NOS Chair, U.S. Geological Survey

Natalie Latysh summarized NOS activities.

- Accepted the petition for approval of the proposed MDN site at Port Angel, Oaxaca, Mexico (OA02), which has a tower and associated stabilizing cables that violate the 45-degree cone.
- Passed a resolution that requires all sites to have an event recorder, which tracks the openings and closings of the wet-only deposition collector.
- Briefly listed the reports received by the Subcommittee: Network Equipment Depot report (Dossett), USGS external quality assurance program report introducing an expansion of the number of field audit sample to 2/site/year (Wetherbee), Central Analytical Laboratory report including a proposed new NTN Field Observer Report Form with field chemistry eliminated (Harlin).
- 2004/05 NOS officers: Chair - Karen Harlin, V. Chair - Mike Kolian, Secretary - Marty Risch.

Data Management and Analysis Subcommittee (DMAS) - Chris Rogers, DMAS Chair, MACTEC

Chris Rogers summarized DMAS activities.

- Accepted the MDN Analytical Laboratory (HAL) one-year follow-up report summarizing the status of actions taken to address the recommendations of the 2003 HAL review team.
- Appointed an ad hoc committee to address mercury dry deposition; the chair is Eric Prestbo and the committee will report at the Spring 2005 meeting.
- Approved a plan for reconciling differences in MDN and NTN precipitation gage data at co-located sites, where the HAL and CAL review data from the same gage and report different amounts.
- Approved a plan to combine the three MDN data records (pre-1997, 1997-3rd quarter 2002, post-3rd quarter 2002) into a single, seamless, uniformly-coded, data record (1996 - present).
- Approved a plan for presenting concentration and deposition data for urban sites (population > 400 people per square km within a 15 km radius of the site); urban-site data will be displayed but not used in the spatial interpolation applied in creating isopleth maps. The Program Office will evaluate similar alternatives for presenting coastal-site data and present the results for DMAS review.
- 2004/05 DMAS officers: Chair - Bob Larson, Secretary - Chris Rogers.

Environmental Effects Subcommittee (EES) - Pam Padgett, EES Chair, USDA-Forest Service, Riverside Fire Laboratory

Pam Padgett summarized EES activities.

- Deliberated changes in the committee name and amendments to the committee charges that address more closely the committee's interests and activities.
- Summarized the ongoing projects being discussed by the EES:
    1 - data mining project that complements federal land managers' efforts to identify an atmospheric (wet and dry) deposition rate, or "critical load," that results in ecological responses
    2 - ideal network design project in coordination with DMAS
    3 - develop outreach CD that markets NADP participation for decision-makers
    4 - develop a Web forum for scientists, especially to enable communications among researchers using NADP archival samples
- Presented an update on the status of developing a mercury brochure

New Business —

Nomination Committee (Chair - Rich Grant, Dennis Lamb, Wayne Banwart)

Rich Grant presented on behalf of the committee.

Action - Nomination of 2004/05 NADP Secretary: Rich Grant reported that the nominating committee recommends Maggie Kerchner, National Oceanic & Atmospheric Administration Chesapeake Bay Office, as 2004/2005 NADP Secretary. Maggie agreed to serve. Rich explained the officer rotations, which would result in Maggie serving as NADP Chair in 2006/2007. He asked for nominations from the floor.

Moved, Seconded, Carried Unanimously: Maggie Kerchner was elected 2004/05 NADP Secretary.

2005 Technical Committee Meeting - Kristi Morris, NADP V. Chair, National Park Service

Kristi Morris, 2005 technical program chair, announced that the Technical Committee meeting is planned for the week of 26 September 2005, in Jackson, Wyoming. The tentative schedule includes a field trip to Grand Teton National Park on the last day of the meeting. Among the featured topics will be research activities in the national parks, methods for assessing total deposition, and critical loads.

2005 Spring Subcommittee Meetings - Karen Harlin, NOS Chair, CAL Manager

Karen Harlin announced that the spring subcommittee meetings were being planned for Key West, Florida, during the week of 12 April 2005.

2004 Site Operator Awards

5 Year Awards (paper certificate)
CO99 - Sylvia Oliva (USGS)
GA99 - Charles Welsh (USGS)
MA01 - Evan Gwilliam (NPS_ARD)
MN05 - Joy Wiecks (EPA/Fond du Lac Reservation)
MN99 - Kurt Mead (MN Pollution Control Agency)
NC06 - Nathan Hall (USEPA-CAMD)
NC35 - Steve Honrine (NC State University)
NH02 - Ralph Perron (USDA Forest Service)
OR02/OR97 - Lynn Conley (USEPA-CAMD)
PA00 - Sharon Scamack (USEPA-CAMD)
VA24 - Gene Brooks (USEPA-CAMD)
WI35 - Clara Emstrom (USEPA-CAMD)

10 Year Awards (5x7 plaque)
AR03 - Harrell Beckwith (USGS)
CA42 - Mike Oxford (USDA Forest Service)
NC45 - Gene Berry (NC State University)
NV03 - Laurie Bonner (USGS)
PR20 - John Bithorn (USDA Forest Service)
VA28 - Shane Spitzer (NPS-ARD)

15 Year Award (8x10 plaque)
AL10 - Petty Seekers (USGS)
CO08/CO92 - Wayne Ives (USEPA-CAMD)
IN41 - Kenneth Scheeringa (SAES - Purdue University)
OR18 - Cheryl Borum (USGS)
TX02 - Glenda Copley (USGS)

20 Year Award (Lucite trophy)
CO02/94 - Mark Losleben
(NSF-INSTAAR/University of Colorado)
MN18 - Christine Barton (USEPA-CAMD)
MS10 - Eddie Morris (USGS)
MD08 - Karen Duray (USGS)
WI99 - Ted Peters (WI DNR)
WY02 - Greg Bautz (BLM)

Closing Remarks —

Cari Furiness welcomed everyone to the 2004 scientific symposium to commence at the close of the business meeting. She especially thanked Chul-Un Ro, Bob Vet, Rob Tordon, and Rhonda Doyle-LeBlanc of Environment Canada for their invaluable support and cooperation. She acknowledged Environment Canada's support of the boat tour in Halifax Harbor and the luncheon, scheduled for Thursday. Cari also reviewed the symposium agenda, highlighting session topics, the poster session with reception, the luncheon, and the field trip on Friday.

NADP Chair, Gary Lear entertained a motion to adjourn the business meeting.

National Atmospheric Deposition Program
2004 Technical Committee Meeting & Scientific Symposium
Participant List

Attendee	Affiliation
Viney Aneja	North Carolina State University
Gerald Arkin	University of Georgia
Paul Arp	University of New Brunswick
Wayne Banwart	University of Illinois
Jack Beach	N-Con Systems Co., Inc
Stephen Beauchamp	Environment Canada
Pierrette Blanchard	Environment Canada
Van C. Bowersox	Illinois State Water Survey - NADP Program Office
Jon Bowser	MACTEC Engineering & Consulting
Mark Brigham	US Geological Survey
Bob Brunette	Frontier Geosciences - HAL
Thomas J. Butler	Cornell University
Silvina Carou	Environment Canada
Lawrence Cheng	Alberta Environment
Tom Clair	Environment Canada - Atlantic Region
Richard G. Cline	USDA Forest Service
Ellis Cowling	North Carolina State University
Roger Cox	Natural Resources Canada - CFS
John Dalziel	Environment Canada
Ian DeMerchant	Natural Resources Canada
Brigita Demir	Illinois State Water Survey - CAL
Tracy Dombek	Illinois State Water Survey - CAL
Michael Donohue	Les Terrasses de la Chaudiere
Scotty R. Dossett	Illinois State Water Survey - NADP Program Office
Kathy Douglas	Illinois State Water Survey - NADP Program Office
Rhonda Doyle-LeBlanc	Environment Canada
Donald J. Eckert	Ohio State University
Peter Finkelstein	Environmental Protection Agency
Joel Frisch	US Geological Survey
Cari Sasser Furiness	North Carolina State University
Mark Garrison	ERM
David Gay	Illinois State Water Survey - NADP Program Office
Mallory Gilliss	New Brunswick Department of Environment & Local Government
Richard Grant	Purdue University
Andrea Grygo	University of Maine
Haken Gürleyük	Frontier Geosciences
William G. Hagar	University of Massachusetts - Boston
Alicia Handy	US Environment Protection Agency - Environmental Careers
Anne Hansen	Instituto Mexicano de Tecnologia del Aqua
Karen Harlin	Illinois State Water Survey - NADP Program Office, CAL
Melannie Hartman	Colorado State University
Eric Hebert	EEMS
Marie-Éve Héroux	Health Canada
Kemp Howell	MACTEC Engineering & Consulting
Bill Hume	Environment Canada
Thomas Huntington	US Geological Survey
Dean Jeffries	Environment Canada
Andrew Johnson	Maine Department of Environmental Protection
Tom Jones	Advanced Technology Systems, Inc
Donna Kenski	Lake Michigan Air Directors Consortium

Margaret Kerchner	National Oceanic and Atmospheric Administration
James Kertis	Advanced Technology Systems, Inc
Raymond E. Knighton	USDA-CSREES-Natural Resources and Environment
Michael Kolian	US Environment Protection Agency - Clean Air Markets Division
Allan Kolker	US Geological Survey
John Korfmacher	USDA Forest Service
Dennis Lamb	Penn State University
Carl Lamborg	Woods Hole Oceanographic Institution
Robert Larson	Illinois State Water Survey - NADP Program Office
Natalie Latysh	US Geological Survey
Gregory B. Lawrence	US Geological Survey
Gary Lear	US Environment Protection Agency - Clean Air Markets Division
Christopher Lehmann	Illinois State Water Survey - NADP Program Office
Maris Lusis	Environment Canada
Malcolm Lynch	C.C. Lynch & Associates, Inc
Kevin MacDonald	Maine Department of Environmental Protection - Air Quality
Dave MacTavish	Environment Canada/CAPMON
Esmaiel Malek	Utah State University
Robert P. Mason	University of Maryland
M. Alisa Mast	US Geological Survey
Lee Maull	Dynamac Corporation
Shawn E. McClure	Cooperative Institute for Research in the Atmosphere (CIRA)
Chandra McGee	University of Maine, Orono
Nicholas McMillan	Frontier Geosciences - HAL
Donald McNichol	Environment Canada
Johnny McPherson	Nova Scotia Environment & Labour
Mark Mesarch	University of Nebraska - Lincoln
Eric K. Miller	Ecosystems Research Group, Ltd
Kristi Morris	National Park Service - AIR
Heather Morrison	Environment Canada
Julie Narayan	Environment Canada
Sarah Nelson	University of Maine
Mark Nilles	US Geological Survey
Shane O'Neil	Fisheries and Oceans
R. P. Otjes	ECN
Pamela Padgett	USDA Forest Service
John Peckenham	University of Maine
Eric M. Prestbo	Frontier Geosciences
Beverly Raymond	Environment Canada
Karen C. Rice	US Geological Survey
Martin Risch	US Geological Survey
Chul-Un Ro	Environment Canada
Bruce Rodger	Wisconsin Department of Natural Resources
Christopher Rogers	MACTEC Engineering & Consulting
Catherine Rosfjord	University of Maine
Jane Rothert	Illinois State Water Survey - CAL
Joseph Scudlark	University of Delaware
John Sherwell	Maryland - Department of Natural Resources
Donald Snyder	Utah State University
Marcus Stewart	MACTEC Engineering & Consulting
Kevin Sweeney	Hydrolab - OTT
Kerri Timoffee	Environment Canada
Kamila Tomcik	Nova Scotia Environment a& Labour
Robert Tordon	Environment Canada
Alan Van Arsdale	US Environment Protection Agency
Gerard Van der Jagt	Frontier Geosciences - HAL

Robert Vet	Environment Canada
Roxanne Vingarzan	Environment Canada
Megan Vogt	Frontier Geosciences - HAL
John Walker	US Environment Protection Agency
Greg Wetherbee	US Geological Survey
Trevor White	Passamaquoddy Tribe
Derek Winstanley	Illinois State Water Survey
Yihua Wu	UMBC/NASA - Goddard Space Flight Center