

**National Atmospheric Deposition Program
Annual Technical Meeting Minutes
September 10-12, 2007, Boulder, Colorado**

Monday, September 10, 2007, Joint Subcommittee Meeting

Marty Risch, Network Operations Subcommittee (NOS) Chair, called the meeting to order and welcomed participants, encouraging all to register and receive a copy of the meeting proceedings. Marty presented a summary of the minutes of the April 2007 meeting in Burlington, Vermont, and asked for approval.

Action – Approve Meeting Minutes: Approve minutes of the Spring 2007 Joint Subcommittee meeting.

Moved, Seconded, Carried.

Spring 2008 Subcommittee Meetings

NOS Chair Marty Risch reported that the Spring 2008 Subcommittee meetings would be held on 29-30 April at the Hampton Inn, Pensacola, Florida. Plans are for the Executive Committee to meet on 1 May in the same location.

Belfort Precipitation Gage Replacement

NADP Coordinator Van Bowersox reported on the Executive Committee resolution to replace Belfort gages with electronic gages and the requirement to install wind shields at sites with significant snowfall. Van's presentation included discussions about the date for equipment changes and whether the deadline should be set at the beginning or end of 2009. Committee and Subcommittee reports and recommendations have cited both dates. No recommendations were made to amend the requirements (below), which will be sent to NADP sponsoring and operating agency representatives:

- All sites must replace Belfort gages with one of two approved gages (ETI – model NOAH IV or HACH – model NADP Ott-Pluvio) by the end of 2009.
- Sites receiving more than 20% of annual precipitation as snow must install an Alter-type wind shield on their gage by the end of 2009.

Report of Nominating Committee for 2007/08 Secretary

On behalf of the committee, Kristi Morris nominated Mark Nilles for NADP Secretary. Mark is U.S. Geological Survey representative to the NADP Executive Committee. He also serves as Budget Advisory Committee (BAC) Co-chair, a position he will vacate if elected Secretary. NADP officers serve a four-year rotation beginning with Secretary in year one, Vice Chair in year two, Chair in year three, and Past Chair in year four. Comprising the nominating committee were NADP Past Chair Kristi Morris, NOS Chair Marty Risch, and 2004/05 Program Chair Cari Furiness. Nominations were invited from the floor.

Action: Nomination of 2007/08 NADP Secretary: Nominations for Secretary closed. Mark Nilles elected 2007/08 NADP Secretary.

Moved, Seconded, Carried.

Kristi Morris nominated Gary Lear to Co-Chair the NADP BAC, replacing Mark Nilles. Gary is EPA representative to the Executive Committee and will remain in that role.

Action: Nomination of BAC Co-Chair: Nominations for BAC Co-Chair closed. Gary Lear elected NADP BAC Co-Chair.
Moved, Seconded, Carried.

NADP Governance Handbook

Ecological Responses & Outreach Subcommittee (EROS) Chair Pam Padgett discussed the development of a handbook that describes the roles and responsibilities of NADP committees and subcommittees. The handbook is in draft form and will be presented for review and discussion at the Executive Committee meeting.

Electronic Precipitation Gages

NADP Data & Information Services Manager Bob Larson summarized the status of the precipitation gage installation and Belfort gage replacement at NADP sites. To date, HACH /Ott-Pluvio-NADP gages have been installed at six sites: three MDN sites, 2 co-located MDN/NTN sites, and one NTN site. Five of the six installations replaced Belfort gages. ETI/NOAH IV gages have been installed at 22 sites: 8 MDN sites, 5 co-located MDN/NTN sites, 4 NTN sites, 1 co-located AIRMoN/MDN site, and 1 co-located AIRMoN/MDN/NTN site. Bob also reported that he's received notice of electronic gage purchases from 18 other sites.

NADP Web Site Update

NADP Data & Information Services Manager Bob Larson demonstrated the new NADP Home Page, currently being developed, and a related page that will display information about the three NADP networks. He described the features of the Home Page that will enable users to access data tables and maps and information about the networks, NADP and related meetings, publications, and news events. Bob reported that the University of Illinois is in the process of replacing the separate domain names at its three campuses with a university-wide address ("uillinois"), which will require an address change for the NADP Web Page, as well. He explored potential addresses and identified several alternatives.

Action: Web Page Address Change: The NADP Program Office was charged with pursuing a domain name change for the NADP Web Site.
Moved, Seconded, Carried.

Bob continued his report by re-capping the process for changing the NADP logo and expressed concerns raised by the designer. Key considerations in designing a new logo are what it communicates and simplicity. The designer raised concerns about ad hoc modifications in his proposed design without consulting him. Bob entertained a motion to undo previous actions taken to alter the designer's logo.

Action: NADP Logo: Vacate the spring 2007 action in which the committee adopted a logo that was a modification of the designer's original design.

Moved, Seconded, Carried. 23 Favored, 4 Opposed.

Action: Approve Designer's Proposed Logo: Accept the logo originally proposed by the designer.

Moved, Seconded, Carried. 20 Favored, 7 Opposed.

Subcommittee Meeting Previews

NOS Chair Marty Risch invited each Subcommittee, Working Group, and Ad Hoc Committee Chair to describe topics that will be addressed at their meetings. Marty Risch (NOS Chair), Gerard Van der Jagt (Data Management and Analysis Subcommittee Chair), Pam Padgett (EROS Chair), Greg Wetherbee (QA Advisory Group Chair), and Rick Haeuber (Ad Hoc Critical Loads Advisory Committee Chair) previewed their respective agendas.

Meeting adjourned -- NOS Chair, Marty Risch, adjourned the Joint Subcommittee meeting.

Tuesday, September 11, 2007, General Business Meeting

National Atmospheric Deposition Program (NADP) Chair, Maggie Kerchner, welcomed participants and invited them to introduce themselves and state their affiliation. The 2007 meeting had 172 participants, a record for NADP annual meetings. A participant list is included at the end of the minutes.

Reports

Program Office Report – Van Bowersox (NADP Coordinator)

Van summarized the state of the NADP, emphasizing important recent accomplishments and program activities:

- Reviewed 5-year record of “off-the-top” support from State Agricultural Experiment Station (SAES) Directors for SAES National Research Support Project – 3 (NRSP-3). These are grant monies transferred to the University of Illinois College of Agricultural, Consumer, and Environmental Sciences from the U.S. Department of Agriculture Cooperative State Research, Education, and Extension Service. Since NRSP-3 ends in September 2008, a renewal proposal must be drafted and delivered by mid-January 2008 for review by the four Regional Associations of SAES Directors.
- Recounted NADP history from the original proposal, first funded in fiscal year 1977, to the present. As SAES North Central Regional project NC-141, initial support came from SAES, as well as from the U.S. Forest Service. NADP sites first began collecting samples in July 1978 at seven sites: MN16-Marcell Experimental Forest, NC25-Coweeta, NE15-Mead, NH02-Hubbard Brook, PA29-Kane Experimental Forest, VA13-Horton's Station, and WV18-Parsons. Among the original sites were three at agricultural experiment stations. Today, 50 NADP sites are located at agricultural experiment stations and/or are funded by individual SAES. More than 65% of active NTN sites have a 20⁺-year sampling record.

- Announced that the 2008 annual NADP meeting is scheduled for 14-16 October 2008 in Madison, Wisconsin, where 30 years of network operations will be celebrated in conjunction with the general business meeting and symposium.
- Presented a pie chart that displayed funding sources ranked by their percentage contributions to the NADP budget. Leading FY06 supporters were the US Geological Survey-21%, Environmental Protection Agency-20%, National Park Service-9%, National Oceanic & Atmospheric Administration-8%, US Department of Agriculture Forest Service-6%, and SAES-6%.
- Reported that NADP Web site usage continues to grow with the annual number of hits exceeding 1.5 million and user sessions exceeding 300,000. Among the more than 32,000 registered users are scientists from every continent except Antarctica. In the Americas, only Honduras and French Guiana have no registered NADP Web site (<http://nadp.sws.uiuc.edu>) users. Users cited research 61% of the time and education 39% of the time as their reasons for accessing NADP data.
- Showed examples of educational applications of NADP data: (1) grades 9-12 curriculum, entitled *Inside Rain – Working with Precipitation Chemistry Data*, developed with US Geological Survey support by the National Science Teachers Association, (2) Earth Day activities, entitled *Earth Day 2004 – acid rain experiment*, developed by the NADP Central Analytical Laboratory and Program Office in conjunction with the American Chemical Society, (3) NADP maps and data in textbooks in general chemistry, environmental science, and uses of geographic information systems in public policy, and (4) uses of NADP samples in hands-on activities for el-hi students.
- Described findings that exemplify ways that NADP data support environmental policy decisions: (1) acid rain (pH < 5.0) continues to be widespread, though for most of the Great Basin, northern California, and parts of Kansas, Nebraska, and the Dakotas, the frequency of occurrence dropped below 5% between 1995 and 2003; (2) acid rain intensity decreased over the last 30 years, e.g., the 1977-78 pH range at the Penn State site was 3.5-4.8 and the 2003-04 pH range was 3.7-5.6; and (3) over the 20-year period from 1985 to 2005, a) sulfate concentrations decreased at more than 95% of NTN sites, consistent with SO_x emissions decreases, b) nitrate concentrations decreased by 10%-50% in the Northeast but increased by 10%-65% in the West, c) ammonium concentrations increased at ~90% of NTN sites, and d) ammonium concentrations now exceed sulfate concentrations virtually everywhere in the western U.S..
- Summarized efforts to improve catch efficiency and sample representativeness at high-elevation Rocky Mountain sites and proposed that these sites be considered a regional sub-network, allowing for instrumentation and methods changes unconstrained by network-wide NTN standards.
- Displayed a time series plot of gaseous elemental, reactive gaseous, and particulate mercury measurements for December 2006 from Beltsville, Maryland, where one of the stations in a pilot network for measuring airborne mercury and estimating mercury dry deposition fluxes is located; also,

displayed a time series plot of wet and dry sulfur deposition at the Penn State AIRMoN site.

- Introduced a project funded by the Agriculture Research Service (ARS) to look for traces of Asian Soybean Rust (ASR) in the residue of filtered rain samples from 75 NTN sites. This project is being conducted cooperatively with the ARS Cereal Disease Laboratory in St. Paul, Minnesota, where microbiologists apply quantitative real-time polymerase-chain-reaction measurements to identify ASR DNA, when present from ASR spores. ASR infects legumes, such as soybeans, and was first reported in the continental U.S. in November 2004.
- Recapped the resolution to replace Belfort precipitation gages with one of two electronic gages (HACH Ott-Pluvio-NADP or ET NOAA IV) by the end of 2009 and outfit gages with Alter-type wind shields where more than 20% of annual precipitation occurs as snow.
- Reported that Mark Rhodes, an Environmental Engineer, had been hired as the new NADP QA manager and he will join the Program office staff on 1 October 2007.

Executive Committee (EC) – Maggie Kerchner (NOAA Air Resources Laboratory), NADP Chair

Maggie Kerchner announced the NADP officer rotation and reported that Mark Nilles had been elected NADP Secretary. Here is the list of 2007-08 NADP officers:

- Chair – Tom Butler, Institute of Ecosystem Studies and Cornell University
- Vice Chair – Eric Prestbo, Tekran Instrument Corporation
- Secretary – Mark Nilles, U.S. Geological Survey
- Past Chair – Maggie Kerchner, NOAA – Air Resources Laboratory

Maggie presented the list of 2007 site operators receiving service awards, as follows:

NTN Operator Awards

5-Year

Site	Name	Start Date	Current Sponsoring Agency
GA33	Aimee Gaddis	Nov-02	NSF/University of GA, NOAA-NERR, & GA DNR
KY10	Johnathan Jernigan	Aug-02	National Park Service-Air Resources Division
MI48	Marilyn Heet	Nov-00	US Fish & Wildlife Service-Air Quality Branch
MT97	Tanya Niedhardt	Sep-90	USDA Forest Service
NC29	Joe Jarman	Jul-02	North Carolina State University
NE15	Ed Cunningham	Jul-78	SAES-University of Nebraska
NY01/65	Wes Bentz	Aug-04	US Geological Survey
SD04	Marc Ohms	Nov-02	National Park Service-Air Resources Division
VA99	Ken Hickman	Jul-02	Virginia Department of Environmental Quality
WI36	Therese Hubacher	Jan-80	Wisconsin Department of Natural Resources

10-Year

MN08	Mary Jo Flack	Dec-96	Minnesota Pollution Control Agency
MT00	Wayne Not Afraid	Jul-84	US Geological Survey
MT98	Jeff Whitmus	Jul-85	US Geological Survey
NC36	Paul Anderson	Oct-83	US Geological Survey

OR09	Rick Elston	Aug-83	US Geological Survey
PA72	Lynn Dennis	Dec-83	USDA Forest Service
VT99	Miriam Pendleton	Jun-84	US Geological Survey

15-Year

AK03	Andrea Blakesley	Jun-80	National Park Service-Air Resources Division
MA08	Daniel Pepin	Mar-82	NESCAUM
MT96/13	Linda Connor	Feb-82	EPA/ Fort Peck Tribes
WY99	Rod Randall	Aug-81	Bureau of Land Management

20-Year

FL41	April Ammeson	Aug-83	US Geological Survey
KS31	Rosemary Ramundo	Aug-82	SAES-Kansas State University
KY22	Robert Watts	Sep-83	NOAA-Air Resources Lab
MT00	Les Frickle	Jul-84	US Geological Survey
NC25	Robert McCollum	Jul-78	USDA Forest Service
UT98	Nolan Johnson	Apr-85	US Geological Survey

MDN Operator Awards

10-Year

GA09	Ron Phernetton	Jul-97	US Fish & Wildlife Service-Air Quality Branch
ME02	Peter Lowell	Jun-97	EPA/Maine Dept. of Environmental Protection
WI99	Ted Peters	Jan-97	Wisconsin Department of Natural Resources

AIRMoN Operator Awards

10-Year

VT99	Miriam Pendleton	Jan-93	NOAA-Air Resources Lab
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15-Year

IL11	Michael Snider	Oct-92	NOAA-Air Resources Lab
NY67	Tom Butler	Sep-92	NOAA-Air Resources Lab
TN00	Mark Brewer	Sep-92	NOAA-Air Resources Lab

Executive Committee (EC) – Eric Prestbo (Tekran Instrument Corporation), NADP Secretary

Eric Prestbo, who will be program chair of the 2008 annual technical meeting, described his initial ideas for the meeting theme and sessions and solicited input from participants. He proposed a theme focusing on the future: "Measuring Precipitation Chemistry and Ecological Response in the next 25 years: Development and Application of New Models, Sensors and Analytical Methods." Eric is planning sessions on new approaches for measuring precipitation chemistry, including real-time sensors and novel laboratory instruments and on advances in meteorological measurements (e.g., Doppler radar). The 2008 meeting is scheduled for 14-16 October 2008 in Madison, Wisconsin.

Meeting adjourned -- NADP Chair, Maggie Kerchner, adjourned the general business meeting.

**NADP 2007 Annual Technical Meeting and Scientific Symposium
September 10-12, 2007, Boulder, Colorado
Participant List**

Name	Affiliation
Allen Adams	New York State Department of Environmental Conservation
Peter Adams	Carnegie Mellon University
Andrew Allgeier	University of Wyoming
James Anderson	University of Mississippi
Ned Andrews	U.S. Geological Survey
Jeffrey Arnold	U.S. EPA/ORD/NCEA
Richard Artz	NOAA – Air Resources Lab
Isabel Ashton	University of California, Irvine
Shane Atkins	South Florida Water Management District
Michael Barna	National Park Service
Jill Baron	Colorado State University
Jesse Bash	U.S. EPA/ORD/NERL/AMD
Katherine Beem	Colorado State University
Nicolai Bencke	USDA Forest Service
Tom Bergerhouse	Illinois State Water Survey, NADP CAL
Tamara Blett	National Park Service
Van Bowersox	Illinois State Water Survey, NADP Program Office
Bill Bowman	University of Colorado
Jon Bowser	MACTAC, Engineering and Consulting, Inc.
Bob Brunette	Frontier Geosciences, NADP HAL
Douglas Burns	U.S. Geological Survey, NAPAP
Jack Bush	Texas A&M Agricultural Experiment Station
Thomas Butler	Cornell University
Donald Campbell	U.S. Geological Survey
Susan Caplan	Bureau of Land Management
Silvina Carou	Environment Canada
Kurt Chowanski	University of Colorado
Ken Civerolo	New York State Department of Environmental Conservation
David Clow	U.S. Geological Survey
Jeffrey Collett	Colorado State University
Gary Conley	Ohio University
Artra Cooper	U.S. EPA, Region 4
Michele Cutrofello	RTI International
Colin Davie	Brooks Rand Labs
Stephen Del Grosso	USDA ARS NPA SPNR
Robin Dennis	U.S. EPA/ORD/NERL/AMD
David Dietrich	Air Resource Specialists, Inc.
Kathy Douglas	Illinois State Water Survey, NADP Program Office
John Drese	Dynamac Corp
Charles Driscoll	Syracuse University
Eric Edgerton	Atmospheric Research & Analysis, Inc.
Emily Elliott	University of Pittsburgh
Alan Ellsworth	National Park Service
John Faust	Air Resource Specialists, Inc.
Richard Fisher	USDA Forest Service
Suzanne Fisher	Tennessee Valley Authority
Joan Fleser	New York State Department of Environmental Conservation
Kathleen Fowler	U.S. Geological Survey
Hans Friedli	National Center for Atmospheric Research
Cari Furiness	North Carolina State University

Name	Affiliation
David Gay	Illinois State Water Survey, NADP Program Office
Alice Gilliland	NOAA – ARL/ EPA ORD
Rich Grant	Purdue University
Rick Graw	USDA – Pacific Northwest Region
Sandy Grenville	Air Quality Services, Inc.
Mae Gustin	University of Nevada-Reno
Richard Haeuber	U.S. Environmental Protection Agency
Keith Halbrook	EEMS
Nancy Halbrook	EEMS
Eric Hebert	EEMS
Mark Hodges	MACTEC Engineering and Consulting, Inc.
Elizabeth Holland	National Center for Atmospheric Research
Kemp Howell	MACTEC Engineering and Consulting, Inc.
Gerard Van der Jagt	Frontier Geosciences, NADP HAL
John Jansen	Southern Company
Andrew Johnson	Maine Department of Environmental Protection
Maria Jones	EEMS
Jason Karlstrom	Frontier Geosciences, NADP HAL
Eric Keith	Hach Environmental
Victoria Kelly	Institute of Ecosystems Studies
Helen Kempenich	Ashely National Forest
Maggie Kerchner	NOAA Office of Oceanic & Atmospheric Research
Gary Kleiman	NESCAUM
Kate Knight	University of Connecticut
Raymond Knighton	USDA-CSREES-Natural Resources & Environment
Eladio Knipping	EPRI
Richard Kobe	Michigan State University
John Korfmacher	USDA Forest Service
Gail Lacy	U.S. Environmental Protection Agency
David LaRoche	U.S. Environmental Protection Agency
Robert Larson	Illinois State Water Survey, NADP Program Office
Douglas Latimer	U.S. Environmental Protection Agency, Region 8
Natalie Latysh	U.S. Geological Survey
Gregory Lawrence	U.S. Geological Survey
Matt Layden	Illinois State Water Survey, NADP CAL
Gary Lear	U.S. Environmental Protection Agency
Brian Lee	U.S. Environmental Protection Agency
Christopher Lehmann	Illinois State Water Survey, NADP CAL
Leonard Levin	EPRI
Steve Lindberg	Private Citizen
Winston Luke	NOAA – Air Resources Lab
Jason Lynch	U.S. Environmental Protection Agency
Dave MacTavish	Environment Canada/CAPMON
Andrew Maizel	Brooks Rand Labs
William Malm	National Park Service
Frank McCormick	USDA Forest Service
Mark McMillan	Colorado Department of Public Health & Environment
Kate McPeck	Frontier Geosciences
Mark Mesarch	University of Nebraska – Lincoln
Chris Moore	University of Maryland Center for Environmental Studies
Kristi Morris	National Park Service
Alfred Moyle	Penn State University
Robert Musselman	Rocky Mountain Research Station
Christine Negra	Heinz Center
Ryan Nelson	Frontier Geosciences, NADP HAL

Name	Affiliation
Mark Nilles	U.S. Geological Survey
Richard Oakes	USDA Forest Service
Pamela Padgett	USDA Forest Service
Anthony Paulson	U.S. Geological Survey
Jim Pederson	California Air Resources Board
Robert Pinder	NOAA/U.S. Environmental Protection Agency
Ellen Porter	National Park Service
Elisabeth Poscher	AAFC-SPARC
Sandra Preaux	University of Maryland
Eric Prestbo	Tekran Instrument Corporation
John Ray	National Park Service – ARD
Anne Rea	U.S. Environmental Protection Agency
Jennifer Riddell	USDA Forest Service
Martin Risch	U.S. Geological Survey
Chul-Un Ro	Environment Canada (ARQM)
Wayne Robarge	North Carolina State University
Bruce Rodger	Wisconsin Department of Natural Resources
Marco Rodriguez	Colorado State University
Christopher Rogers	MACTEC, Engineering and Consulting, Inc.
Keith Rose	U.S. Environmental Protection Agency
Jane Rothert	Illinois State Water Survey, NADP CAL
William Salas	Applied GeoSolutions LLC
Jason Samenow	U.S. Environmental Protection Agency
Chuck Sams	USDA Forest Service
Vicki Sandiford	U.S. Environmental Protection Agency
Richard Scheffe	U.S. Environmental Protection Agency
Bret Schichtel	National Park Service
Arnout Tershure	EPRI
Florian Schwandner	Colorado State University
Janea Scott	Environmental Defense
Timothy Sharac	U.S. Environmental Protection Agency
Michael Shaw	Environment Canada
John Sherwell	Maryland Department of Natural Resources
Mike Silverstein	Colorado Department of Public Health
Luther Smith	Alion Science and Technology
Scott Smith	Illinois State Water Survey, NADP CAL
Jeff Sorkin	USDA Forest Service
Lindsay Springer	National Park Service-Rocky Mountain National Park
Jeff Stehr	University of Maryland
Gary Stensland	Dakota Science
Barbara Suever	Illinois State Water Survey, NADP CAL
Timothy Sullivan	E&S Environmental
Harald Sverdrup	Lund University
Courtney Taylor	Environmental Consultants & Engineers
Joan Thullen	U.S. Geological Survey
Mark Tigges	Air Resource Specialist, Inc.
David Vaello	IPS Meteo Star, Inc.
Allan Van Arsdale	U.S. Environmental Protection Agency
Curtis Vaughn	Weston Solutions, Inc.
John Venezia	World Resources Institute
Krish Vijayaraghavan	Atmospheric & Environmental Research
John Vimont	National Park Service
Elizabeth Waddell	National Park Service
Terry Wade	Texas A&M University
John Walker	U.S. Environmental Protection Agency

Name	Affiliation
Sarah Walker	Winrock International
Justin Walters	Southern Company
Nealson Watkins	U.S. Environmental Protection Agency
Kathleen Weathers	Institute of Ecosystem Studies
Jill Webster	U.S. Fish and Wildlife Service
Jeffrey Welker	University of Alaska, Anchorage
Greg Wetherbee	U.S. Geological Survey
Laura Wheatley	National Park Service-Rocky Mountain National Park
Thomas Wickstrom	Environmental Resources Management
Steve Williams	University of Wyoming
John Zachariassen	Bureau of Land Management
Angela Zahniser	Bureau of Land Management