

NATIONAL ATMOSPHERIC DEPOSITION PROGRAM  
1982 TECHNICAL COMMITTEE MEETING  
MINUTES

FIRST SESSION

Wednesday, November 3, 1982, 8:30 a.m.

Program Overview And Interregional Project

The first session of the 1982 NADP Technical Committee meeting convened in St. Louis with Ellis Cowling, Chairman, presiding. A list of attendees is attached. Ellis presented a brief history of the Program and its accomplishments.

Keith Huston, North Central Director at Large and Administrative Advisor to NADP, spoke to the group regarding the components of NADP and stressed that one is not more important than the other. The deposition monitoring network has been developed; the next issue to be addressed is the effects research. He feels the future is of great importance.

John Fulkerson, USDA CSRS and Administrative Advisor to NADP, commented that this is the last time he will be meeting with the group. In the future, he will be devoting his time to another research area. He stated that this program has taught the government some lessons about cooperation between diverse groups of scientists and funding agencies.

Ellis Cowling discussed the IR-7 proposal and its approval, effective October 1st. He specifically called attention to the Executive Summary, the budget, the Who's Who listing, and the table on pages 43-44a of the proposal. Ellis hopes the NADP can concentrate on strengthening the effects portion of the Program by doing three things:

1. Establishing a few select subcommittees in the effects research areas.
  - A. Effects on Agricultural Crops
  - B. Effects on Forests
  - C. Effects on Soils
  - D. Effects on Water Quality and Aquatic Biology
  - E. Ecosystem-level Investigations
  - F. Effects on Materials
2. Preparing an inventory of on-going effects research in NADP and other organizations.
3. Establishing working groups with common interests to develop plans to obtain funds from various sources which might consist of:
  - A. Agriculture (including soils)
  - B. Forestry (including soils)
  - C. Watershed Research and Aquatic Biology
  - D. Effects on materials
  - F. Ecosystem Studies

Ellis discussed the creation of a Special Grants Program by CSRS. It will be funded at \$695,000 for the first year of a 5-year program. NADP will provide input for the areas receiving these awards and should begin to formulate and prioritize areas of interest. The decision has not yet been made as to how these funds will be allocated.

Program Reports

Jim Gibson presented the report from the Coordinator's Office, and stated there has been a great deal of diversity in the past year's activities. He highlighted some of those activities:

1. The designation of NADP by USGS to coordinate and provide chemical analysis for the National Trends Network (NTN) has resulted in the development of implementation plans and in working with Maj. John Robertson to review existing NADP sites as well as proposed sites to be incorporated into the NTN.
2. Published, or provided support for publication of, several reports.
3. Provided information and evaluations to various agencies as well as the news media.

4. Continued the joint NADP/CANSAP evaluation study and carried out first preliminary data evaluation.

Jim showed overheads of some of the concentration and deposition isopleth maps which have been developed during the past year.

Rick Linthurst, Coordinator for the EPA Acid Precipitation Program, commented on their program. They are in their fourth year of a 5-year program and are beginning to see articles, etc., resulting from the program. They are going to fund new projects this year, both in assessment and research. The "Critical Assessment Document" is almost ready to be submitted to EPA. One of the things they are looking for is ways to look at historical changes in precipitation other than by using historical precipitation data. Selection of research proposals will be made in December or January, with funding in January or February. Another major effort will be interaction between terrestrial and aquatic systems, including aluminum transport to the aquatic system. They will make their last project solicitation in May or June of next year. This solicitation will be in Science.

Gary Stensland presented the report from the Illinois State Water Survey Central Analytical Laboratory. He commented on the activities of the lab and its personnel for the last year. They held one field operator training course and hope to hold two more in the spring. CAL will be back on the original data validation schedule by the beginning of the year. There are presently 108 active NADP sites.

Mark Peden commented on the proposal to monitor metals deposition. Mark stated the third draft has been completed with the help of the advisory group consisting of Jim Galloway, Steve Norton, Owen Bricker, Bill Feder and Dave Bigelow. In June, 10 copies of the proposal were submitted to the Interagency Task Force. Mark has not heard formally, but understands that it will not be funded this year due to changes in priorities at USGS. They will now look for alternate funding.

Jack Pickering of USGS, and Chairman of the Task Group on Deposition Monitoring for the Interagency Task Force on Acid Precipitation, commented on the relationship of NADP with the National Trends Network (NTN). 1982 was an organizational year. They have developed the design for the NTN. Current NADP sites will be the core of the NTN. NADP will provide coordination and chemical analysis for the sites. They hope to have all sites operational by 1983-84. Methods development focus will be toward dry deposition, but budgets are as yet uncertain. They want to define the methodology and develop the design for a dry deposition monitoring network, but don't know yet what form it will take.

#### Special Project Reports

John Robertson briefly discussed the NTN design. Jerre Wilson described the site visitation and presented the checklist used for site evaluation:

1. Photograph site
2. Update site sketches
3. Update equipment documentation and other site folder data
4. Check raingauge and calibrate if necessary
5. Check sampler operation
6. Review field procedures with site personnel
7. Review laboratory procedures with site personnel
8. Try to identify problems or potential problems
9. Provide feedback to CAL and Coordinator's Office.

Jerre presented the tentative schedule for the remaining site visits.

Tony Olson, Battelle Pacific Northwest Laboratories, discussed archiving of data and data availability. He presented information on the new Environmental Protection Agency Acid Deposition Data System (EPA-ADDS), and discussed the goals and design of the system. Tony identified the persons to contact for further information - Gardner Evans (919) 549-3887 or Tony Olsen (509) 376-4265.

LeRoy Schroder reported on the Quality Assurance Program. He discussed the blind audit program and the correspondence of the various parameters i.e., sodium, potassium, etc. He compared the CAL value vs. most probable value (MPV). He also illustrated the standard deviation for the 6 parameters USCS

feels are stable in solution. He presented a slide of conductance and pH analysis carried out by the site operators for November, 1981 and April, 1982. (Copies attached)

Malcolm Still discussed the Canadian Air and Precipitation Monitoring Network (CAPMON) which will replace all existing Canadian networks (CANSAP, BAPMoN, CAASN and APN) as of April, 1983. He explained why they decided to upgrade the network, and described the components of the new network. These components are: standardization of sampling period, new instrumentation, sample handling improvements, daily sampling, QA, inter-comparison with other networks.

Walter Chan of the Ontario Ministry of the Environment discussed the activities of the Acidic Precipitation in Ontario Study (APIOS) for the past year. He presented illustrations pertaining to Network Status, Quality Assurance/Quality Control, Special Studies, and Recent Publications/Presentations.

Steve Norton commented on the recent publication of "Distribution of Surface Waters Sensitive to Acidic Precipitation: A State-level Atlas" and gave the history of the development of this atlas. Copies may be obtained by contacting Steve's office.

## SECOND SESSION

Wednesday, November 3, 1982, 1:30 p.m.

### Technical Session — Research Review

The Tuesday afternoon session was comprised of announcements and a technical session organized by Jay Jacobson and Bill McFee. The following reports were given:

1. Mike Kelly - Watershed Aluminum Proposal Development
2. Rudy Husar - Chemical Climatology of North America
3. Ray Herrmann - Materials Effects (in lieu of invited speaker)
4. Jay Jacobson - Crops Effects
5. Rick Linthurst - Aquatic Effects
6. Robert Goldstein - ILWAS Study
7. Richard Livingston - Materials Effects (originally scheduled as #3)
8. Ellis Cowling - CSRS Special Grants in Acid Deposition Effects

## THIRD SESSION

Thursday, November 4, 1982, 8:30 a.m.

### Subcommittee Meetings and General

Ellis Cowling introduced Jack Barnes from USDA who will be replacing John Fulkerson as Administrative Advisor for NADP and representative to the Technical Committee.

A nominating committee to elect a chairman, vice chairman and secretary for the 1982-83 year was appointed. This committee consisted of: U.S. Jones, Clemson University; J.B. Hart, Michigan State University; Dudley Raynal, SUNY Syracuse; Gene Wooldridge, Utah State University, and Keith Huston, North Central Regional Director At Large, as ex officio member.

Jim Gibson announced that there will be funding available for some interim subcommittee meetings, and asked the subcommittees to consider what needs they might have. These meetings must take place before July.

With regard to selection of officers for the subcommittees, there is a change in the prior policy in respect to rotation of subcommittee officers. As a result of the integration of the NTN network and with current budgetary constraints, it is now more important to choose officers who have the time and resources to devote to the job regardless of whether the person is currently holding that office.

The group dispersed for subcommittee meetings.

#### FOURTH SESSION

Thursday, November 4, 1982, 1:30 p.m.

#### Technical Session - Discussion Groups

The fourth session of the NADP Technical Committee meeting convened at 1:30 p.m. with Technical Session Discussion Groups. These were:

1. Analysis and Comparisons of Deposition Monitoring Data - Warren Knapp, Moderator
2. Dry Deposition Monitoring - Bruce Hicks, Moderator
3. Stream Chemistry and Biology - Jim Perry, Moderator
4. Agriculture - Bill Feder, Moderator

#### FIFTH SESSION

Friday, November 5, 1982, 8:30 a.m.

#### **Election of Technical Committee Officers**

Keith Huston assumed the chair for election of officers. The nominating committee presented a slate consisting of: Ellis Cowling, Chairman; Bill McFee, Vice Chairman; and Steve Norton, Secretary.

Nominations were opened for office of Chairman. There were no nominations from the floor, and Ellis Cowling was unanimously re-elected Chairman.

Other nominations for Vice Chairman were invited. There were none, and Bill McFee was unanimously re-elected as Vice Chairman.

The floor was then opened for secretarial nominations. There being none, Steve Norton was unanimously re-elected as Secretary.

Ellis Cowling resumed the chair, and the meeting proceeded with subcommittee reports and recommendations.

#### **Subcommittee Reports**

##### **Subcommittee #4 - Effects Research**

Jay Jacobson, Chairman, reported that the subcommittee officers for 1982-83 will be: Dave Shriner, Chairman; Mike Kelly, Chairman-elect; and Dudley Raynal, Vice-Chairman. A secretary will be elected at the next meeting of the subcommittee.

The committee dissolved the existing working groups and established four new working groups. The new groups and their leaders are:

1. Materials - Ray Herrmann, National Park Service
2. Aquatics - Jim Perry, University of Minnesota
3. Forestry - James B. "Bud" Hart, Michigan State University
4. Field and horticultural crops - Al Kuja, Ontario Ministry of the Environment

The committee considered suggestions for future technical sessions. The value of the plenary sessions was supported. Suggested topics for technical sessions are: productivity of forests, standardization of methods of sampling and analysis of atmospheric deposition relating to effects research, and analysis and effects of metals. Research tasks relating to effects of atmospheric deposition were prepared for the areas listed as working groups. A subset of these tasks are recommended for consideration by the CSRS Special Grants Program concerning effects on agriculture.

There was no discussion of these items from the floor, and the report was accepted as presented.

## Subcommittee #2 — Methods Development and Quality Assurance

Chairman, Leo Topol, reported that new officers for 1982-83 are Jerry Aubertin, Chairman, and Don Bogen, Vice Chairman.

The committee considered and recommended the following:

1. Store data for dry wet-side (blank) samples in the regular data base. These data, which will consist of analyte concentrations and the 90-, 50-, and 10-th percentiles, will be available in hard copy form for the first period, beginning with the 1982 data, to serve as a guide for contents and use. They will also be stored in the normal manner with NADP and EPA.
2. Dry Deposition - The use of dry buckets should be limited to a small number of sites. The number of sites is to be decided by a committee. The technique should be improved. (Some sites, especially in the West, desire the results obtained with dry buckets.)

Monitors for the concentration of atmospheric pollutants, both gases and particulates, should be initiated as soon as possible at selected test sites. The concentrations multiplied by a factor called deposition velocity yields the deposition flux.

A small committee should be appointed to interface with the Interagency Task Force regarding design of the dry deposition monitor.

3. The field values (pH, conductivity) should be published together with the appropriate QC values (i.e., weekly check solution pH results and the semiannual test solution values) and the appropriate caveats.
4. Site QC - The rain gauges should be checked once per year by the site operators with known weights. Future check frequency will depend on the results of the initial test.
5. The Chairmen of Subcommittees 1, 2 and 3 should appoint a group of three to study the best gauges for measurement of collection amounts of snow.
6. A network QA program should be drawn up, and the plan developed for NTN should be considered for adoption. NADP should play an active role in its development.

The recommendations of the committee were considered and discussed by the Technical Committee. The first item considered was recommendation #1. This recommendation was approved.

Recommendation #2 was discussed. Clarification was made of several points. The committee selecting the potential dry deposition sites would be composed of representatives from each of the three subcommittees who participate in this area of interest. The costs for purchase and installation of air concentration measurement devices would be borne by some as yet unidentified funding agency. The design of the monitor would be decided after consultation with EPA and USGS. These meetings would take place between now and the end of the year. All sites would continue to pay the full monitoring price with extra funds being directed to the costs of the concentration monitoring device. It was suggested that the decision to continue dry sampling be voluntary. The recommendation was so amended. The question of rationale for change in protocol was discussed. Ellis Cowling suggested that the committee making the recommendation also provide the rationale for the recommendation. Concern over use of funds from each site to support concentration monitoring at other sites was expressed. The recommendation was then broken down into parts for consideration as follows:

- A. Limit use of dry buckets to a small number of sites, preferably chosen by committee. Recommendation carried.
- B. A small number of concentration monitors will be operated at selected sites with funds to be provided for purchase of equipment. The suggested number of sites is 12. Recommendation carried.
- C. A small committee be appointed to interface with the Interagency Task Force and be available for

any decision regarding design of the monitor. Ellis Cowling suggested that he and Bruce Hicks interface with the Task Force in the decision of the methodology and monitor design for dry deposition. The recommendation carried.

Recommendation #3 was discussed. The data analysis committee expressed concern over quality of the data. It was suggested that this publication commence with the 1982 data in order not to delay publication of other existing data. The recommendation carried.

Recommendation #4 carried.

Recommendation #5 was discussed. It was moved and seconded that the recommendation be changed to a committee appointed only from Subcommittee #2. Motion carried. The recommendation was approved as amended.

Recommendation #6 was effectively tabled. Network QA will be considered at an interim meeting in about six months when the NTN QA plan is available for reference.

#### Subcommittee #1 - Network Site Criteria and Standards

For 1982-83, John Robertson was re-elected chairman, Malcolm Still will serve as Vice Chairman and Jerry Walker will remain as secretary.

NOTE: The complete text of the minutes from Subcommittee #1 was not available at time of this printing.. A copy of the minutes will be forwarded under separate cover as soon as they are received.

#### Subcommittee #3 - Data Management and Analysis

Warren Knapp, Chairman, reported that the committee retained their present slate of officers consisting of Warren Knapp, Chairman, and Steve Lindberg,, Vice Chairman.

The following business was conducted.

1. The volume of quarterly data reports was discussed. The present report format uses four pages per site per quarter of data. With more than 100 sites in operation, the publication and distribution costs have become prohibitive. The committee recommended that a new two page per site format be adopted. The reduction would be accomplished by condensing the site description and location map and eliminating the tables of daily precipitation amounts and ion concentration expressed in microequivalents per liter. The time trend plots, presently occupying the fourth page of each site report, would be retained. An effort should be made to expand the time axis on the precipitation amount plot to allow readability of daily precipitation amounts.
2. The committee recommended that the descriptive and historical material on each network site, which has been compiled by the Site Criteria and Standards Committee, be summarized in a standardized format and published as a supplemental data report by the Coordinator's Office.
3. The publication of a report summarizing and highlighting the collective activities of NADP was again considered. Jim Gibson reported that, with the approval and initiation of the new interregional project, sufficient funds should be available to publish an annual report this year. Warren Knapp agreed to solicit suggestions on the form and content of the annual report from all members of the Technical Committee. A draft outline of the report, incorporating suggestions received by 1 January 1983, will be prepared and circulated for review in January.

Ellis Cowling clarified the annual report question by explaining that there are two reports - a 3-page report required by CSRS describing the past year's activities of the program, which is due March 15th of each year, and a larger report which is a publication of NADP.

The report and recommendations were accepted as presented.

## Special

Malcolm Still recommended that the present NADP/CANSAP joint monitoring study be continued beyond March of 1983, and that a re-evaluation of the program be conducted every two years at the Technical Committee meeting. It was moved and seconded that this continuation be supported. Motion carried.

There were two calls for papers:

1. Steve Lindberg asked NADP to act as sponsor for the Heavy Metals Conference, to be held September 6-9, 1983, as first U. S. sponsor. This would mean support of a few thousand dollars. Sponsorship would involve sending a representative, or providing travel funds to send a representative, to the meeting. A decision must be made by the end of the year. Suggestion was made that there might be more appropriate sponsors such as NAPAP. Anyone interested in the Conference should contact Steve.
2. Peter Finkelstein announced the EPA Symposium on Developments in Measurement of Acid Deposition Both Wet and Dry. Anyone interested in submitting a paper should contact him.

A letter will be sent to John Fulkerson expressing appreciation from the Technical Committee for his work with NADP.

Ellis Cowling called attention to the action currently taking place in the House of Representatives. There are several bills pending which relate to acid rain research. A new element being considered is restoration of acidified lakes with liming. He suggested that participants might want to obtain a copy of the CSRS pink sheet issued 10/22/82. Ellis also called attention to the publication, "Acidification Today," from the Stockholm conference which is a follow-up analysis to an earlier publication. All attendees at the meeting will receive a copy of this report by mail. Ellis commented on the term "acidification." He feels it will become more common in the future as it is a much broader term. He also called attention to the 7-point sheet he distributed, titled "Suggested framework for policy decisions leading to possible management of acid deposition and its effects." Mention was made of the steering committee meeting, and the decision to now hold the Technical Committee meetings in regions other than the North Central Region. Comments regarding future meeting formats should be sent to Bill McFee or Dave Shriner.

The 1982 NADP Technical Committee meeting adjourned at 12:00 p.m.

NADP Technical Committee Participation List  
November 1982

<u>Participant</u>	<u>Affiliation</u>
Dean Arnold	U.S. Fish & Wildlife Service
G.M. Aubertin	Southern Illinois University
Van Baker	Colorado State University
Linda Bandhauer	Colorado State University
Wayne Banwart	University of Illinois
John Barnes	U.S. Department of Agriculture
Ann Bartuska	North Carolina State University
David Bigelow	Colorado State University
Don Bogen	U.S. Department of Energy
Van Bowersox	Illinois State Water Survey
Claude Boyd	Auburn University
James Boyle	Oregon State University
Gordon Bradford	University of California
Wesley Bradford	U.S. Geological Survey
Owen Bricker	U.S. Geological Survey
Russell Brinsfield	University of Maryland
Walter Chan	Ontario Ministry of the Environment
Stan Coloff	Bureau of Land Management
Edward Corbett	U.S. Forest Service
John Corliss	U.S. Forest Service
Ellis Cowling	North Carolina State University
Rachel Cremers	Louisiana State University
Debra Crowther	Cornell University
Terry Dana	Battelle-Northwest
Kathy Daniel	Colorado State University
David Dewalle	Penn State University
Scott Dossett	Illinois State Water Survey
Kathy Douglas	Illinois State Water Survey
Denis DuBay	North Carolina State University
W.A. Feder	University of Massachusetts
Herbert Feely	U.S. Department of Energy
Ivan Fernandez	National Council of the Paper Industry for Air & Stream Improvement
Peter Finkelstein	U.S. Environmental Protection Agency
John Fulkerson	U.S. Department of Agriculture
James Galloway	University of Virginia
Donald Gatz	Illinois State Water Survey
James Gibson	Colorado State University
A. R. Gilmore	University of Illinois
Robert Goldstein	EPRI
Richard Graham	U. S. Military Academy
David Greenland	INSTAR and University of Colorado
James Hart	Michigan State University
John Hassett	University of Illinois
Allen Heagle	North Carolina State University
Walter Heck	North Carolina State University
Joann Held	NJ Department of Environmental Protection
Gray Henderson	University of Missouri
Raymond Hermann	National Park Service
Bruce Hicks	NOAA
Janja Husar	Washington University
Rudolf Husar	Washington University
Keith Huston	North Cental Association of Agricultural Experiment Station Directors
Jay Jacobson	Boyce Thompson Institute
U.S. Jones	Clemson University
Robert Jungers	U.S. Environmental Protection Agency

Paul Kapinos	U.S. Geological Survey
J. M. Kelly	Tennessee Valley Authority
Vance Kennedy	U.S. Geological Survey
Warren Knapp	Cornell University
Allen Kuja	Ministry of the Environment Canada
Morris Levin	U.S. Environmental Protection Agency
Steven Lindberg	Oak Ridge National Lab
Rick Linthurst	U.S. Environmental Protection Agency
Richard Livingston	U.S. Environmental Protection Agency
James Lynch	Penn State University
Bernard Malo	U.S. Geological Survey
C. Wayne Martin	USDA Forest Service
Dan Matias	New York State Electric & Gas
William McFee	Purdue University
John Miller	NOAA
Stephen Norton	University of Maine at Orono
Anthony Olsen	Pacific Northwest Laboratory
Gordon Pagenkopf	Montana State University
Kyaw tha Paw U	Purdue University
Mark Peden	Illinois State Water Survey
Jim Perry	University of Minnesota
Jack Pickering	U.S. Geological Survey
Dudley Raynal	SUNY - Syracuse
Michael Reddy	U.S. Geological Survey
John Robertson	U.S. Military Academy
Bruce Rodger	Wisconsin Department of Natural Resources
Malcolm Ross	U.S. Geological Survey
LeRoy Schroder	U.S. Geological Survey
Dick Semonin	Illinois State Water Survey
Steven Shafer	North Carolina State University
Alain Sirois	Atmospheric Environment Service
Douglas Sisterson	Argonne National Lab
Loretta Skowron	Illinois State Water Survey
Randy Stahlhut	Illinois State Water Survey
Kenneth Steele	University of Arkansas
Gary Stensland	Illinois State Water Survey
Malcolm Still	Atmospheric Environment Service
M. Ali Tabatabai	Iowa State University
Leo Topol	Rockwell International EMSC
Alan VanArsdale	Massachusetts Department of Environmental Quality Evaluation
Shashi Verma	University of Nebraska
Sandy Verry	U.S. Forest Service
Jerry Walker	University of Georgia
Lynn Whittig	University of California
Jerre Wilson	U.S. Military Academy
James Womack	NOAA
Gene Wooldridge	Utah State University