



National Atmospheric Deposition Program

# Governance Handbook



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## BACKGROUND

The National Atmospheric Deposition Program (NADP) was established in 1977 under State Agricultural Experiment Station (SAES) leadership to address the problem of atmospheric deposition and its effects on agricultural crops, forests, rangelands, surface waters, and other natural and cultural resources. In 1978, sites in the NADP precipitation chemistry network first began collecting one-week, wet-only deposition samples for analysis at the Illinois State Water Survey, Central Analytical Laboratory (CAL). The network was established to provide data on amounts, temporal trends, and geographic distributions of the atmospheric deposition of acids, nutrients, and base cations by precipitation. The NADP initially was organized as SAES North Central Regional Project NC-141, which all four SAES regions endorsed as Interregional Project IR-7 in 1982. A decade later, IR-7 was reclassified as National Research Support Project NRSP-3, which it remains. NRSP projects are multi-state activities that support research on topics of concern to more than one state and region of the country. Multistate projects involve the SAES in partnership with the U.S. Department of Agriculture Cooperative State Research, Education, and Extension Service and other universities, institutions, and agencies.

In October 1981, the federally supported National Acid Precipitation Assessment Program (NAPAP) was established to increase understanding of the causes and effects of acidic precipitation. This program sought to establish a long-term precipitation chemistry network of sampling sites distant from point source influences. Because of its experience in organizing and operating a national-scale network, the NADP agreed to coordinate operation of NAPAP's National Trends Network (NTN). To benefit from identical siting criteria and operating procedures and a shared analytical laboratory, NADP and NTN merged with the designation NADP/NTN. This merger brought substantial new federal agency participation into the program. Many NADP/NTN sites were supported by the U.S. Geological Survey (USGS), NAPAP's lead federal agency for deposition monitoring. Today there are more than 250 sites in the network, and the network designation has been shortened to NTN.

In October 1992, the Atmospheric Integrated Research Monitoring Network (AIRMoN) joined the NADP. AIRMoN sites collected samples daily when precipitation occurred. Samples were analyzed for the same constituents as measured in NTN samples. The AIRMoN provided data for the investigation of pollutant source/receptor relationships and the effects of

## MISSION

The NADP's mission is to

- Provide quality-assured data and information to support research on the exposure of managed and natural ecosystems and cultural resources to acidic compounds, nutrients, mercury, and base cations in atmospheric deposition.
- Remain one of the nation's premier cooperative research support programs, serving science and education and supporting communication and informed decisions on air quality issues affecting ecosystems and human health.
- Respond to emerging issues and evaluate changes in its measurement systems, including the addition of other chemical and biological species.

emissions changes on precipitation chemistry, combining measurements with atmospheric models. The AIRMoN network was discontinued in 2019. The network data is available on the NADP website (<https://nadp.slh.wisc.edu>).

In January 1996, the NADP established the Mercury Deposition Network (MDN) as the third network in the organization. MDN sites collect wet-only deposition samples that are sent to the MDN analytical laboratory. The MDN was formed to provide data on the wet deposition of mercury to surface waters, forested watersheds, and other receptors. Almost all U.S. states and most Canadian provinces have advisories against consuming fish from lakes with high mercury concentrations in fish tissues. MDN data enable researchers to investigate the link between mercury in precipitation and ecological and human health.

In October 2009, the NADP established the Atmospheric Mercury Network (AMNet) as a fourth network and complement to MDN. AMNet measures concentrations of gaseous and particulate components of atmospheric mercury at a subset of MDN sites in the U.S. and Canada. Using automated continuous

measurement systems, AMNet measures gaseous elemental mercury (GEM), particle bound mercury (PBM2.5), and gaseous oxidized mercury (GOM). High-resolution AMNet data facilitate a more complete scientific understanding of the mercury biogeochemical cycle and ecological responses to mercury exposure through atmospheric pathways. Combined with MDN, AMNet data support an array of science, policy, and management objectives, including assessing geographic patterns and long-term temporal trends in the concentrations of atmospheric mercury species and dry and total mercury deposition in selected areas; improving the information base for model evaluation; assessing the impact of mercury emitting sources; and evaluating the status and trends in total deposition of atmospheric mercury to ecosystems with a high potential for mercury methylation and mercury bioaccumulation in fish and wildlife.

In October 2010, the Ammonia Monitoring Network (AMoN) was established as NADP's fifth network to monitor atmospheric concentrations of ammonia. AMoN provides data necessary to determine the spatial distribution and seasonality of ammonia concentrations,

providing information to assist in meeting scientific and air quality policy and management needs. AMoN uses a Radiello®-passive sampler, a simple diffusion-type sampling device, for measuring 2-week ambient ammonia concentrations. The samplers are analyzed at the CAL.

## **ORGANIZATION**

The NADP is a public, nonprofit, unincorporated, interstate association of parties interested in atmospheric deposition and its effects. It is structured as a cooperative program that represents coordinated efforts of many individuals in federal, state, academic, and private organizations to operate monitoring sites, report data, and oversee research activities related to atmospheric deposition.

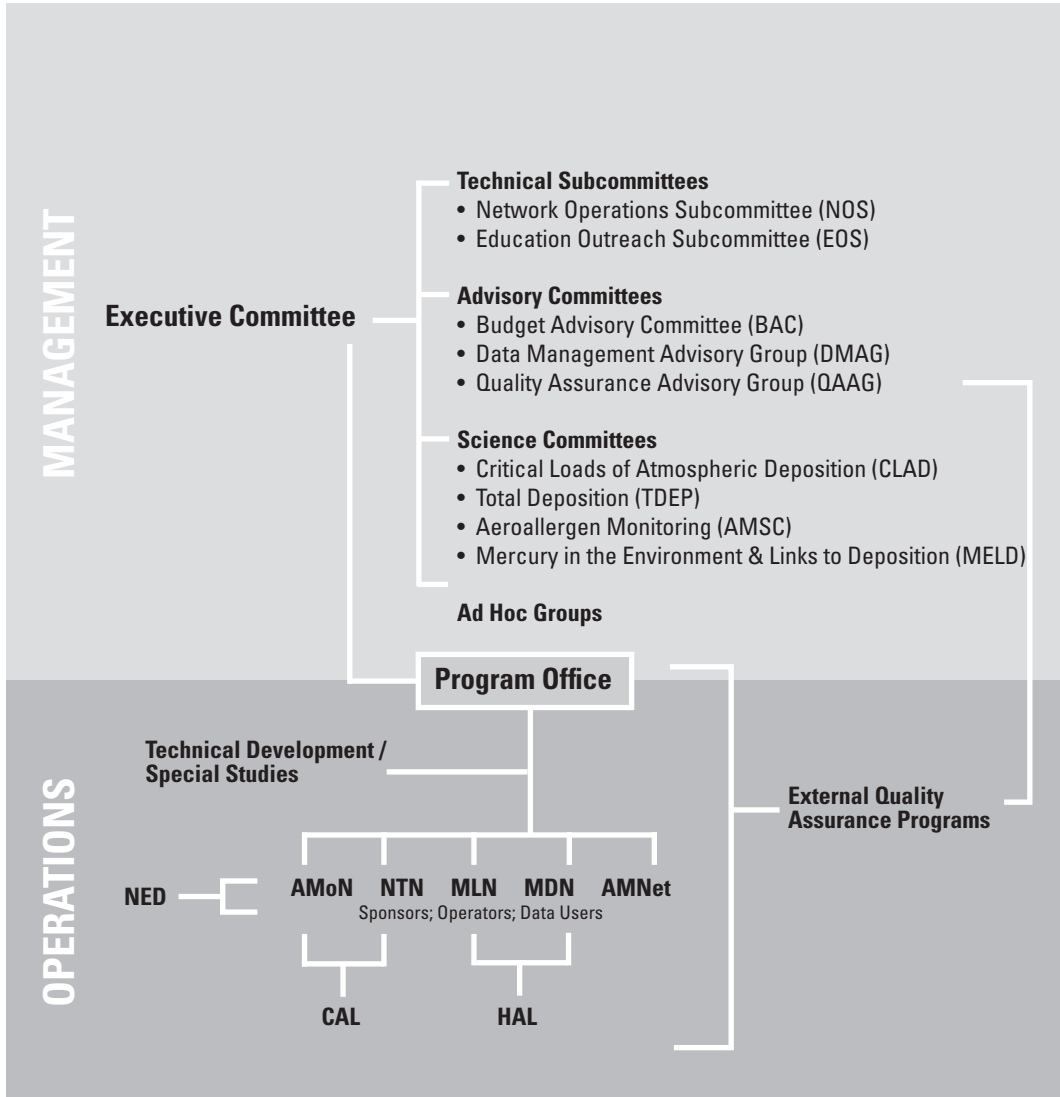
Membership in NADP is open to individuals and institutions interested in participating in any aspect of atmospheric deposition monitoring

and/or research stemming from NADP data. This organizational structure is consistent with State Agricultural Experiment Station (SAES Guidelines for Multi-state Research Activities (SAESD, 2006)).

The organization of the NADP is described in two sections: A. Program Management, which consists of the Executive Committee, the Technical Subcommittees, the Advisory Committees, Science Committees, ad hoc groups, and the Program Office; and B. Program Operations, which consists of the Program Office, the networks, the laboratories, the External Quality Assurance Program, and the Network Equipment Depot.

<sup>1</sup>SAESD (State Agricultural Experiment Station Directors). 2013. Guidelines for Multistate Research Activities. Developed by SAESD in cooperation with the Cooperative State Research, Education, and Extension Service, USDA (NIFA) and the Experiment Station Committee on Organization and Policy (ESCOMP). Approved September 26, 2000, updated August 15, 2013. [http://escop.ncsu.edu/docs/MRF\\_Guidelines\\_Revised\\_08\\_1\\_513.pdf](http://escop.ncsu.edu/docs/MRF_Guidelines_Revised_08_1_513.pdf)

# NADP ORGANIZATIONAL STRUCTURE



## A. Program Management

The NADP is governed by an Executive Committee. The standing Technical Subcommittees and Science Committees provide routine, ongoing input to the Executive Committee. In addition, ad hoc groups and the Program Office provide input to the Executive Committees.

Decisions are made by majority vote within each technical and science committee. Each committee operates independently, although issues that are relevant to the mission of more than one committee may be discussed and voted on in joint session of two or more committees. Motions passed in joint session are considered to have the same standing as motions passed separately by the individual committees. Represented in the joint session. Motions from the individual committees and joint session are brought to the EC for final approval.

Minutes are approved by the technical or science committee membership and made available on the NADP website within 60 days of the committee meeting.

### **EXECUTIVE COMMITTEE (EC)**

The EC is responsible for executing decisions and actions brought forward by the subcommittees, advisory committees, science committees, and ad hoc groups; for making budgetary decisions; and for ensuring program continuity, stability, and balance. The EC may assign additional tasks to the subcommittees, advisory groups, and science committees as necessary. The EC, in consultation with the U.S. Department of Agriculture's National Institute of Food and Agriculture (NIFA) and the

Budget Advisory Committee, is responsible for choosing the institution that hosts the Program Office.

The EC consists of eight voting members and numerous ex officio non-voting members. The voting members are: the Past Chair, Vice Chair, and Secretary; the Chairs of each of the

### **MEMBERS OF THE EXECUTIVE COMMITTEE**

#### **VOTING MEMBERS**

##### Program Officers

Chair

Past Chair

Vice Chair

Secretary

Network Operations Subcommittee Chair

Education Outreach Subcommittee Chair

Budget Advisory Subcommittee Chair

##### **Representative from SAES Community**

#### **EX OFFICIO NONVOTING MEMBERS**

SAES North Central Regional Advisor

SAES Northeastern Regional Advisor

SAES Southern Regional Advisor

SAES Western Regional Advisor

National Program Leader, USDA NIFA

NOS Vice Chair and Secretary

EOS Vice Chair/Secretary

Science Committee Chairs

- Critical Loads of Atmospheric Deposition

- Total Deposition

- Aeroallergen Monitoring

- Mercury in the Environment & Links to Deposition

Voting Members of Budget Advisory Committee

NADP Coordinator

QAAG Chair

DMAG Chair

NADP Recorder

CAL Director

HAL Director

AMNet Site Liaison

standing subcommittees: Education Outreach Subcommittee (EOS), and Network Operations Subcommittee (NOS), a representative from the SAES scientific community; and the Co-Chair of the Budget Advisory Committee. In the event of a tie, the Program Chair will cast the deciding vote. These members are empowered to set policy and make decisions concerning the technical and scientific aspects of the Program.

The ex officio nonvoting members include the SAES Regional Administrative Advisors, the National Program Leader for USDA/NIFA, NOS Vice-Chair, NOS Secretary, EOS Vice-Chair/Secretary, Chair of each Science Committee, voting members of the Budget Advisory Committee, the NADP Coordinator, the QAAG Chair, the DMAG Chair, the NADP Recorder, the Directors of each of the analytical laboratories (Central Analytical Laboratory and the Mercury Analytical Laboratory), and the AMNet Site Liaison.

### **Election of NADP Officers**

An NADP Secretary is elected annually and rotates each year to the positions of Vice Chair, Chair, and Past Chair.

To select a candidate for the Secretary position, the Program Chair appoints a nominating committee. The nominating committee is typically led by the Past Chair and consists of two other individuals with knowledge and experience in NADP. The nominating committee may seek input from the subcommittee chairs. The nominating committee is responsible for contacting nominees to assess qualifications, availability, and interest in serving.

During the NADP fall meeting, the nominating committee presents their nominee(s) to the subcommittees during a joint meeting of the NADP subcommittees. A call is made for

additional nominations from the floor, then members of the NADP subcommittees vote. The new Secretary is announced to the EC during the fall meeting.

### **Duties of NADP Officers**

NADP officers serve without honoraria for a yearly term beginning and terminating at the conclusion of the annual NADP fall meeting. If the Chair is unable to carry out the duties of that office for any reason, the Vice Chair acts in that capacity until the Chair can resume duties or until the term of office is completed. If neither the Chair nor the Vice Chair is able to complete the term of the Chair, then the Past Chair assumes the duties of the Chair until the EC chooses a Chair to complete the term

*Chair:* The Chair prepares meeting agendas and presides at the spring and fall meetings of the NADP Executive Committee. The Chair also serves as the co-chair of the Budget Advisory Committee and assists in the development of the agenda for the annual Budget Advisory Committee meeting. The Chair has the authority to establish and dissolve ad hoc workgroups as necessary. The Chair appoints the chair of an ad hoc workgroup, makes recommendations for workgroup members, and establishes a timeline for the workgroup. The Chair, in consultation with members of the EC, may delegate certain duties to other members of the EC and perform such duties as usually pertain to this office. In the event of a tie vote within the Executive Committee, the Program Chair will cast the deciding vote.

*Vice Chair:* The Vice Chair is responsible for planning and organizing the program of the annual fall NADP scientific symposium. The Vice Chair performs other duties as delegated by the Chair. In the event the Chair is unable

to perform his or her duties, the Vice Chair assumes the duties of the Chair.

*Secretary:* The Secretary assists the Vice Chair in planning and organizing the annual fall NADP meeting. The Secretary is to become fully knowledgeable about NADP policies and functions, reviews the status of available NADP products, and helps formulate a strategy for disseminating any new products. The Secretary performs other duties as delegated by the Chair

*Past Chair:* The Past Chair assists in long-range planning for the continued health of the NADP, as well as assists the Chair as mutually agreed. The Past Chair provides coordination of the meeting agendas of the subcommittees and science committees. In the event that neither the Chair nor the Vice Chair is able to perform the duties of the Chair, the Past Chair assumes these duties.

## TECHNICAL SUBCOMMITTEES

The standing Technical Subcommittees (EOS and NOS) provide much of the technical guidance necessary to support the NADP mission. Each subcommittee elects a chair and a secretary and/or vice chair. The chair of each subcommittee represents the subcommittee as a voting member on the EC. Each science committee and technical subcommittee will appoint 2 delegates to serve on the Education and Outreach Subcommittee. The NOS-EOS delegates will serve to represent each of the networks (NTN, AMoN, MDN and AMNET).

Anyone with interest in NADP is encouraged to attend and participate in subcommittee meetings. Through involvement in a subcommittee, a NADP member gains voting rights within that group on issues of importance to the NADP.

Specific duties of officers may be determined by each subcommittee. In general, each subcommittee chair prepares the agenda for the fall and spring meetings and ensures that subcommittee recommendations are brought forward to the EC. The subcommittee secretary or vice chair is responsible for preparing meeting minutes. Each subcommittee has a mission and specific charges, detailed as follows.

### Education Outreach Subcommittee (EOS)

The mission of EOS is to coordinate outreach and education activities among the network and scientific subcommittees. With approval and recommendation from the Executive Committee, EOS will provide guidance for outreach efforts and educational materials to the Program Office. EOS is a committee comprised of delegates from subcommittees and technical committees.

The specific charges of EOS are:

- Facilitate the use of NADP data for scientific research, informing public policy, and providing educational and outreach materials.
- Provide a forum to enable communication of education and outreach needs, goals and activities of the subcommittees and networks by enhancing efficiency in messaging and reaching new audiences.
- Provide content and guidance to the Program Office for regular NADP publications, social media, webpages, and announcements.
- Develop new outreach materials for advancing the status, standing, and prominence of the National Atmospheric Deposition Program. Outreach materials may be specific to an individual science committee, focused on individual networks, or broadly dedicated to progressing the National Program. Tasks and text development may be coordinated directly within EOS, or developed within subcommittees or networks and submitted to EOS.



- Create, provide, and update educational materials content. Education materials will augment typical data and maps available through the web interface by providing interpretation, context, or highlighting knowledge gaps. Educational materials may be intended for use by a variety of audiences such as the general public, policy and decision makers, classroom environments, or data user groups. EOS will identify the intended audience and propose the format and media type. Content may be coordinated within EOS or in collaboration with the science and network subcommittees.
- Final approval of EOS outreach and education products and activities is the purview of the Executive Committee.
- EOS will set priorities for the Program Office regarding production of outreach materials. The Program Office will assist with the final layout.

### Network Operations Subcommittee (NOS)

The mission of the NOS is to provide a forum for discussion and evaluation of issues pertaining to station siting, equipment, and procedures for sampling and analysis in all NADP networks.

The specific charges of NOS are:

- Evaluate siting criteria, equipment, procedures, methods, and technologies used by each network.
- Review and evaluate field-measurement procedures to ensure that SOPs are followed routinely and make recommendations for change as appropriate.
- Periodically review the analytical laboratories to ensure that SOPs and appropriate quality control (QC) and quality assurance (QA) protocols are being followed.
- Evaluate and determine the acceptability of proposed changes in the analytical laboratories concerning analytical methods,

laboratory procedures, and QC and QA protocols.

- Ensure that laboratory analytical data generated for the networks meet program needs and are accompanied by complete metadata and QA documentation. When program needs change, this subcommittee reviews and recommends Quality Assurance Plan (QAP) changes on matters of network operations.
- Recommend and review procedures for recording measurements and observations reported by Field Site Operators, analytical laboratories, and by the Program Office. This charge includes review and approval of the design of field sample report forms and precipitation gage records.
- Provide reports to the Executive Committee as appropriate.

## ADVISORY COMMITTEES

Membership in the Advisory Committees is by appointment, but input from nonmembers is welcome.

### Budget Advisory Committee (BAC)

The BAC is responsible for short-term and long-term financial planning, and provides the

### MEMBERS OF THE BUDGET ADVISORY COMMITTEE

**Lead Funding Agency Representative (Co-Chair\*)**

**NADP Chair (Co-Chair)**

**USDA NIFA Representative**

**Sponsoring Agency Representatives (applying the 1.5% rule\*\*)**

**Cooperative Agreement Funding Agency Representatives**

**NADP Vice Chair (Ex officio nonvoting member)**

\*The 2nd lead funding agency (or next in sequence) if representation is established by other committee assignment.

\*\*Any agency or organization that has a financial investment of 1.5 percent or greater in the overall NADP current fiscal year budget.

EC with budgetary recommendations, including allocations for quality management and quality assurance. The BAC is co-chaired by a representative of the lead funding agency and the NADP Chair. [If the lead funding agency representative is unable to serve or is serving as an officer of NADP, then the co-chair position will be held by a representative of the second lead funding agency, and so on.] Other voting members include a representative from USDA NIFA, the agency that sponsors the interagency federal cooperative agreement with the University of Wisconsin for NADP coordination and chemical analysis; and a representative from each sponsoring agency that provides a minimum of 1.5 percent of the overall NADP current fiscal year budget. The NADP Vice Chair is an ex officio nonvoting member of the BAC.

All funding agencies contributing through the Federal Cooperative Agreement are voting members of the BAC and are not subject to the 1.5 percent rule.

### **Quality Assurance Advisory Group (QAAG)**

The QAAG advises the EC on matters of quality management and quality assurance for the NADP Program Office, networks, and laboratories. The QAAG also makes recommendations on the external QA programs and advises the EC on matters related to these programs. The QA Manager, a designee(s) proposed to the EC for approval from the Program Office, coordinates and chairs the QAAG. If the QA manager position is vacant, an acting chair is chosen from the group. Other QAAG members are the laboratory QA Staff, representatives of external QA programs sponsored by the U.S. Geological Survey and the U.S. EPA, and additional participants appointed by the Executive Committee.

The charges of the QAAG are:

- Review and update NADP Quality System documentation (QMP, QAPs, etc.).

- Review, evaluate, and approve instruction manuals and SOPs.
- Advise the QA Manager in implementation of the QMP and the network and laboratory QAPs.
- Provide input and recommendations for external QA programs.
- Coordinate and arbitrate QA matters referred by the Executive Committee, including remedial actions.
- Review QA documents and reports prepared by the QA Manager.
- Suggest areas of QA research to the Executive Committee.

The NADP Quality Management Plan (QMP) provides more information about the networks, laboratories, and data quality management ([http://nadp.slh.wisc.edu/lib/qaplans/NADP\\_QMP.pdf](http://nadp.slh.wisc.edu/lib/qaplans/NADP_QMP.pdf)).

### **Data Management Advisory Group (DMAG)**

The DMAG advises the EC on matters of data management for the NADP Program Office, networks, and laboratories. The Data Manager from the Program Office coordinates and chairs the DMAG. If the Data Manager position is vacant, an acting chair is chosen from the group. Other DMAG members include the laboratory data management staff and additional participants appointed by the Executive Committee.

The specific charges of DMAG are:

- Review and approve all procedures and protocols related to data management and reporting. This charge includes all data screening and coding procedures used at field sites, analytical laboratories, the Program Office, and all criteria for data reporting.
- Review and approve the format of data reports and summaries from the Program Office and recommend changes consistent

with reporting objectives, including evaluating and approving criteria for use of site data in these reports and summaries.

- Advise the EC on long-range planning for expected changes related to Data Management.
- Participate in technical reviews and audits of analytical laboratories and Program Office data management operations.
- Ensure that network data meet program needs and are accompanied by complete metadata and QA documentation.
- Review and recommend Quality Assurance Plan changes on matters of data management as program needs change.
- Evaluate and determine the acceptability of proposed changes in data management procedures to improve accuracy or efficiency of current practices and to meet new or modified objectives.

## SCIENCE COMMITTEES

Science Committees are focused on key areas of atmospheric deposition, scientific interest and/or applications. Science Committees are not necessarily in direct support of NADP networks but seek close and direct affiliation. Science Committees are established by a vote of approval by the EC, after submission of its mission and charges. The Science Committee is then either dissolved or renewed by the EC at the request of the Science Committee every four years.

Each science committee elects a chair and a secretary and/or vice chair. The chair of each science committee represents the committee as an ex officio, non-voting representative to the EC. In general, each science committee chair prepares the agenda for their fall and spring meeting and ensures that the committee's recommendations are brought forward to the EC. The science committee secretary or

vice chair is responsible for preparing meeting minutes. In April 2010, the EC approved the Critical Loads of Atmospheric Deposition as the first Science Committee. In October 2011, the Total Deposition Science Committee was approved as the second Science Committee.

### Critical Loads of Atmospheric Deposition (CLAD)

The mission of CLAD is to facilitate the exchange, use, and evolution of critical loads science, technical information, and modeling and mapping methods within a broad multi-organization context that includes federal, state, tribal, and local agencies as well as academia, industry, and non-profit organizations.

The specific charges of CLAD are:

- Promote NADP meetings as a common ground for sharing technical information and discussing current and emerging issues regarding the science and application of critical loads as a tool for understanding and assessing ecological responses to atmospheric deposition in the United States.
- Increase the visibility of the NADP to decision makers, such as tribal, state, local, and regional air quality managers, Congress members and staff, and relevant federal agencies by facilitating the use of critical loads as a science-based assessment tool that quantifiably links atmospheric deposition of pollutants to ecosystem effects under the environmental conditions expected with climate change.
- Raise international awareness of NADP by providing a venue for U.S. interactions with the international deposition monitoring and critical loads research communities.
- Identify gaps in the development of critical loads as a tool for understanding ecological responses to atmospheric deposition in the

U.S., and encourage research efforts to fill those gaps.

- Provide a forum to achieve consistency in development and use of critical loads, including methods for developing map-based visual tools to show NADP data in relation to critical loads and ecosystem responses.
- Promote communications among NADP data users and the critical loads research community by organizing scientific workshops and symposia at NADP meetings and with other scientific organizations.
- Create and maintain communication links between the critical loads research community and the Executive Committee to ensure that NADP data continue to meet the needs of this community.
- Encourage participation by the critical loads science and user communities in NADP committee and subcommittee functions.
- Raise public awareness of NADP and the importance of atmospheric deposition monitoring by promoting understanding of the critical loads approach through development of outreach and communications materials (in cooperation with EOS).

### **Total Deposition Science Committee (TDEP)**

The mission of TDEP is to improve estimates of atmospheric deposition by advancing the science of measuring and modeling atmospheric wet, dry, and total deposition of species such as sulfur, nitrogen and mercury by providing a forum for the exchange of information on current and emerging issues within a broad multi-organization context including atmospheric scientists, ecosystem scientists, resource managers, and policy makers.

The specific charges of TDEP are:

- Support national networks that monitor atmospheric deposition by providing information on emerging measurement techniques, model development, and uncertainties associated with these approaches.
- Identify and prioritize knowledge gaps in the field of measuring and modeling atmospheric deposition and advocate for research to address those gaps.
- Coordinate with Critical Loads of Atmospheric Deposition Science Committee (CLAD) and other groups to advocate the use of the most scientifically defensible deposition estimates for critical loads and other environmental assessments.
- Provide expertise and advice on present and potential decisions and regulatory actions pertaining to the field of measuring and modeling atmospheric deposition.
- Encourage greater communication and collaboration between groups from different disciplines and countries with interests in atmospheric deposition.

### **Aeroallergens Monitoring Science Committee (AMSC)**

The mission of the AMSC is to engage multi-disciplinary stakeholders in advancing the science of aeroallergen monitoring, including identifying emerging technologies, evaluating methods to ensure data quality, coordination of monitoring stations, and possibly serving as a repository of long-term aeroallergen monitoring data.

The specific charges of AMSC are to:

- Support the NADP's mission to "respond to emerging issues and evaluate changes in its measurement systems, including the addition

of other chemical and biological species” by advancing the science of aeroallergen monitoring.

- Further the NADP’s vision to “remain one of the nation’s premier cooperative research support programs, serving science and education and supporting communication and informed decisions on air quality issues affecting ecosystems and human health.”
- Engage stakeholders in effective decision-making, identify priority research areas, facilitate outreach and education, and seek research funding.
- Support national networks that monitor aeroallergens by providing information on emerging measurement techniques, supporting efforts to standardize methods, quantifying data quality indicators, and providing best practices for data and information storage for long-term trend analysis.
- Identify and prioritize knowledge gaps in the field of measuring and modeling aeroallergens and advocate for research to address those gaps.
- Support development of models for the forecast, emission, transport, and removal of aeroallergens from the atmosphere.
- Create and maintain communication links between the aeroallergen research community and the Executive Committee to foster collaboration with the NADP’s existing network of stations as a core component of the U.S. aeroallergen monitoring network.
- Encourage greater communication and collaboration between groups from different disciplines and countries with interests in aeroallergen monitoring, including NADP data users, by organizing scientific workshops and symposia at NADP meetings and with other scientific organizations.

- Collaborate with the Council of State and Territorial Epidemiologists (CSTE) and other partners, revise the AMSC charge as the aeroallergen monitoring network is implemented.

### **Mercury in the Environment and Links to Deposition Science Committee (MELD)**

The mission of the Mercury in the Environment and Links to Deposition Science Committee (MELD) is to improve the understanding of atmospherically derived mercury sources, pathways, processes, and effects on the environment. MELD provides an ongoing forum for the technical exchange of information on current and emerging issues relevant to atmospheric mercury deposition research and monitoring efforts within a broad multi-organization context including international, federal, state, and local agencies, academia, industry, and non-profit organizations.

The specific charges of MELD are to:

- Integrate the expertise affiliated with NADP mercury programs (e.g., Mercury Deposition Network, Atmospheric Mercury Network, and Mercury Litterfall Network) and mercury biomonitoring initiatives to identify data and science gaps, coordinate research efforts to fill those gaps, and better utilize the data.
- Support existing and emerging national networks that monitor mercury both in the atmosphere and across the landscape by providing a multi-disciplinary forum to share information on measuring techniques, model development, and uncertainties associated with these approaches.
- Coordinate with the Critical Loads of Atmospheric Deposition Science Committee to explore use of critical loads and other tools for understanding ecological responses to mercury loading, and work with the Total

Deposition Science Committee to provide estimates of total mercury deposition.

- Enhance the public recognition of NADP by underscoring the importance of monitoring the atmospheric deposition of mercury on environmental and public health.
- Provide expertise and contribute to efforts evaluating the effectiveness of global mercury reductions (e.g. Minamata Convention on Mercury, Convention on Long-Range Transboundary Air Pollution).
- Foster a connection between NADP and other national and international organizations to advance global mercury science and monitoring capacity, increasing external involvement in the NADP science community.

## **AD HOC GROUPS**

The Program Chair has the authority to establish and dissolve ad hoc groups as necessary. Upon establishment of an ad hoc group, the Chair will provide a timeframe for which the group will operate. The Chair will appoint a chair of the ad hoc group and assist in the selection of members. Ad hoc groups provide input to the EC on matters relevant to their designated charge.

## **MEETINGS**

Attendance at NADP meetings and/or the scientific symposia confers membership in the NADP. Termination of membership occurs once a member fails to attend at least one meeting within a three-year period. However, an individual (or representative of) may request continued membership in NADP by notifying the Program Office of their continued interest in NADP activities. Membership may also end whenever an individual voluntarily notifies the Program Office of this intent.

Anyone with interest in NADP is welcome to attend and participate in NADP subcommittee meetings, science committee meetings and scientific symposia. To accommodate the broad geographic distribution of its members, NADP rotates the Annual Fall Committee Meeting and Scientific Symposium to different locations across the United States and Canada. Although it is preferred that members physically attend the meetings, members may participate via email, phone, or other electronic means apart from the meetings, as available. The NADP meetings do not require a quorum. Following is a description of the four types of NADP meetings.

### **Spring Committee Meeting**

The two standing Technical Subcommittees, the Quality Assurance Advisory Group, the Data Management Advisory Group, the Science Committees, and any ad hoc groups meet during this period to work on issues related to NADP management and operations. Through involvement in a subcommittee, committee or group, a member gains voting rights within that group on issues of importance to the NADP. Decisions are determined by majority vote within each group. Each subcommittee and group operates independently, although issues that are relevant to the mission of more than one committee or group may be discussed and voted on in joint session. Motions passed in joint session are considered to have the same standing as motions passed separately by the individual subcommittees. Motions passed by the individual subcommittees and in joint sessions are brought to the EC for final approval.

### **Annual Fall Committee Meeting and Scientific Symposium**

The fall meeting has two purposes. The first purpose is similar to the Interim Spring Committee Meeting: to address issues and

needs of the Program in subcommittee, advisory, and Executive Committee sessions. The second purpose is to provide a forum for users of NADP data (scientific, policy makers, and developers of new technologies) in which to showcase their work and provide opportunities to display and demonstrate new methods and equipment. This meeting is often new members' first interaction with the NADP community and, therefore, is an important opportunity for networking across agencies and disciplines. The symposium is organized by the Program Vice Chair, who often selects a theme or topic to center the presentations. Presentations are a mix of oral talks and posters with opportunities for participants to meet and have informal discussions during the symposium.

### **Executive Committee Meeting**

The EC meets twice each year, and additional discussions and motions may be approved electronically. One of these meetings must take place in person at the Annual Fall Committee Meeting. The second meeting may be held in conjunction with the Interim Spring Subcommittees meeting or with the Budget Advisory Committee meeting. EC meetings are attended by the voting members, ex officio nonvoting members, and, at the discretion of the Chair, invited guests. However, the Chair or any voting member may move that meeting attendance be limited to voting members only for discussion and/or a decision on a given motion or topic.

EC actions require approval by a simple majority of the voting members (see page 5), including those physically present at a meeting and those responding via computer, telephone, or mail. In the event of a tie due to the absence of one or more voting members, the Program Chair will cast the deciding vote. The Program Office provides a recorder at all EC meetings.

The recorder is an ex officio nonvoting EC member. The recorder collates, disseminates, and archives a written record of all actions. The record of all meetings and non-confidential discussions conducted by the EC is made accessible to all NADP members.

### **Budget Advisory Committee Meeting**

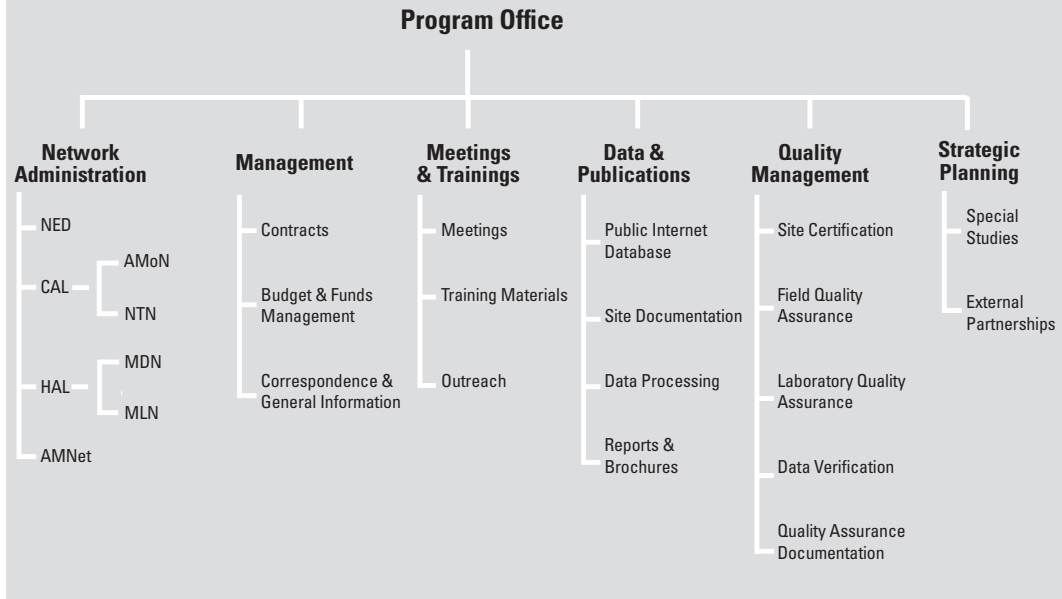
The BAC meets once per year as determined by the co-chairs. Actions of the BAC require approval by a simple majority of the voting members (see page 8), including those physically present at a meeting and those responding via computer, telephone, or mail. The Program Office provides a recorder at the BAC meeting. The recorder will provide a written record of all non-confidential actions to members of the BAC. A record of confidential information is kept by the Program Office.

## **THE PROGRAM OFFICE**

The NADP Program Office is responsible for assisting with program management and administering NADP operations. The Program Office is currently located at the Wisconsin State Laboratory of Hygiene, part of the University of Wisconsin-Madison (a Land Grant Institution). The institution that hosts the Program Office is chosen by the EC, in consultation with the USDA NIFA and the BAC.

The Program Office is organized into five primary functions: Network Administration, Management, Meetings and Trainings, Data and Publications, and Quality Management. Network Administration includes five networks, two analytical laboratories, and the Network Equipment Depot, all mentioned under Section B. The Program Office carries out these primary functions with the technical and administrative guidance of the EC.

## ORGANIZATION OF NADP PROGRAM OFFICE DUTIES



The Program Office Coordinator has administrative responsibility for all Program Office activities. Specifically, the Program Coordinator is the principal investigator of the NADP/ NRSP-3 and is responsible for ensuring that the scientific, technical, and administrative work is in accordance with the terms and conditions of the grants, contracts, cooperative agreements,

and memoranda of agreement that fund the NADP. The Program Coordinator serves on the NADP Executive Committee as an ex officio nonvoting member. A primary role of the Coordinator associated with program management is to present Program Office budgetary requests, including quality assurance activities, for BAC and EC review and approval.



## B. Program Operations

The NADP operates three precipitation chemistry networks (National Trends Network, Atmospheric Integrated Research Monitoring Network, and Mercury Deposition Network), two atmospheric concentration networks (Atmospheric Mercury Network, Ammonia Monitoring Network), two analytical laboratories (Central Analytical Laboratory and Mercury Analytical Laboratory), and the Network Equipment Depot. Each network has its own objectives and corresponding analytes and sampling period. The NADP also participates in several externally administered programs to evaluate data quality independently and objectively. These programs are external in that they are not administered directly by NADP committees or by the Program Office. They are funded directly by the USGS and EPA. Upon request from these agencies, the QAAG may provide input and recommendations to the external QA programs. The information provided below is a brief overview of the Program Operations.

*For greater detail on networks, proposed new initiatives, laboratories, and data quality management, please refer to the NADP Quality Management Plan.*

### **NATIONAL TRENDS NETWORK (NTN)**

The NTN is a nationwide network of sites that collect data on the amount and chemistry of precipitation for use in characterizing the geographic distribution and temporal trends of chemical deposition. Precipitation samples are collected weekly according to strict clean-handling procedures and sent to the Central Analytical Laboratory for analysis of sample-specific conductance and hydrogen ion

(measured pH), as well as chemical concentrations (mass/volume) of sulfate, nitrate, ammonium, orthophosphate, chloride, bromide, calcium, magnesium, potassium, and sodium.

### **MERCURY DEPOSITION NETWORK (MDN)**

The MDN began measuring total mercury in precipitation in 1996 and uses a weekly sampling protocol. The MDN offers an optional daily sampling protocol as well. From the samples collected, optional analyses for methyl-mercury concentrations may be made. The goal of the MDN is to develop a network that adequately covers all continental ecoregions for accurate determination of mercury in precipitation.

### **MERCURY LITTERFALL NETWORK (MLN)**

The Mercury Litterfall Network (MLN) was approved in 2021 to complement the MDN and the AMNet networks. MLN sites measure and quantify concentrations of total mercury and methylmercury found in plant biomass litterfall associated with a forest overstory (leaves, twigs, debris, etc.) that fall to the forest floor. This data assesses deposition and supplements traditional wet and dry mercury deposition. In combination with data from the MDN and AMNet networks, the litterfall data is used to examine ranges of mercury dry deposition, to estimate combined wet and dry mercury deposition, and to evaluate mercury models and develop trends over time.

## **ATMOSPHERIC MERCURY NETWORK (AMNet)**

The AMNet measures ambient air concentrations of GOM,  $PBM_{2.5}$ , and GEM at a subset of monitoring sites in the U.S. and Canada. In addition, AMNet collects meteorological and land-cover information for estimating dry deposition fluxes. The goal of AMNet is to monitor, summarize, and report the atmospheric concentrations of mercury species that contribute to dry and total mercury deposition across North America. AMNet provides high-resolution data that are used to assess the effectiveness of mercury control measures, evaluate atmospheric models, assess the contributions from and impacts of mercury emitting sources on ecosystems, and determine long-term atmospheric mercury trends.

## **AMMONIA NETWORK (AMoN)**

The AMoN uses a Radiello® passive sampler, a simple diffusion-type sampling device, for measuring 2-week ambient ammonia concentrations. AMoN provides data necessary to determine the spatial distribution and seasonality of ammonia concentrations, providing information to assist in meeting scientific and air quality policy and management needs.

## **CENTRAL ANALYTICAL LABORATORY (CAL)**

The CAL is currently located at the Wisconsin State Laboratory of Hygiene in Madison, Wisconsin, and provides site support, sample processing, chemical analyses, and data validation for precipitation samples collected at NTN and AIRMoN sites. CAL analyses include sample-specific conductance and hydrogen ion (measured pH), as well as chemical concentrations (mass/volume) of sulfate, nitrate, ammonium, orthophosphate, chloride, bromide, calcium, magnesium, potassium, and sodium. The CAL Director is an ex officio, nonvoting

member of the EC. A report on the CAL is provided by the Director to the EC at the spring and fall meetings.

## **Hg ANALYTICAL LABORATORY (HAL)**

The HAL, currently located at the Wisconsin State Laboratory of Hygiene, in Madison, Wisconsin, provides site support, sample processing, chemical analyses, and data validation for precipitation samples collected at MDN sites. Laboratory analyses include total and methyl mercury. The HAL Director is an ex officio nonvoting member of the EC. A report on the HAL is provided by the Director to the EC at the spring and fall meetings.

## **NETWORK EQUIPMENT DEPOT (NED)**

The NED maintains a supply of replacement parts for distribution to field sites experiencing equipment failure. The NED, located at the Program Office, supplies parts for distribution to sites as needed. Malfunctioning parts sent to the NED are refurbished in-house or sent to a vendor for repair. Repairs performed off-site are verified and tested to ensure they meet NADP specifications.

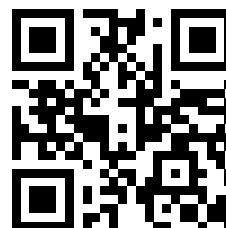
## **EXTERNAL QUALITY ASSURANCE PROGRAMS**

The USGS Precipitation Chemistry Quality Assurance project estimates and documents the variability and bias of NADP data and strives to improve NADP processes from the point of sample collection to dissemination of data to the general public. The project implements core programs to: (1) evaluate potential sample alteration due to contamination and/or preservation issues; (2) estimate the variability and bias of laboratory results; (3) facilitate integration of data from various monitoring networks; and (4) evaluate field-instrument performance. Technical support is also provided to the PO and

CAL to improve data-collection and presentation protocols and to enhance data quality.

The EPA-sponsored Site Survey Program performs surveys of sites operating under NADP's NTN, AIRMoN, MDN, and AMoN. Its purpose is to provide an independent quality assurance assessment of these network sites, documenting the conditions of the site, site operations, and site equipment. The unbiased assessment verifies that all the evaluated parameters (relating to siting criteria, sample collection and handling, field measurement procedures and SOPs, equipment operation and maintenance, record keeping, reports and field laboratory procedures) are consistent with the NADP performance and accuracy goals. Under the Program, activities also include performing minor repairs, preventative maintenance, and restoring proper function to site equipment.

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The NADP is the National Research Support Project-3: A Long-Term Monitoring Program in Support of Research on the Effects of Atmospheric Chemical Deposition. More than 250 sponsors support the NADP, including private companies and other non-governmental organizations, universities, local and state government agencies, State Agricultural Experiment Stations, national laboratories, Native American organizations, Canadian government agencies, the National Oceanic and Atmospheric Administration, the Environmental Protection Agency, the U.S. Geological Survey, the National Park Service, the U.S. Fish & Wildlife Service, the Bureau of Land Management, the U.S. Department of Agriculture - Forest Service, and the U.S. Department of Agriculture - National Institute of Food and Agriculture, under agreement no. 2019-39132-30121. Any opinions, findings, and conclusions or recommendations expressed in this publication are those of the authors and do not necessarily reflect the views of the program sponsors or the University of Wisconsin - Madison.

**Amendments and Parliamentary Authority.** This Governance Handbook may be amended as appropriate by a simple majority of voting members of the Executive Committee. A version of the parliamentary writings of General Henry M. Roberts approved by the NADP shall govern the NADP in all instances not covered by this Governance Handbook. This document supersedes all previous documents and guidelines. Originally approved by the NADP Executive Committee on May 1, 2008. Current version approved as amended on November 15, 2022.

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