NESCAUM
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Northeast States for Coordinated Air Use Management
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Arthur N. Marin, Executive Director

February 7, 2011

Gina McCarthy, Assistant Administrator
U.S. Environmental Protection Agency
Office of Air and Radiation
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Mail Code: 6101A
Washington, DC 20460

Re: Secondary National Ambient Air Quality Standards for Oxides of Nitrogen and Oxides of Sulfur

Dear Assistant Administrator McCarthy:

The Northeast States for Coordinated Air Use Management (NESCAUM) congratulates the U.S. Environmental Protection Agency (USEPA) on the recent release of the *Policy Assessment for the Review of the Secondary National Ambient Air Quality Standards for Oxides of Nitrogen and Oxides of Sulfur* (January 14, 2011 version). The NESCAUM states support a state-federal partnership designed to address the continuing problem of acid deposition that persists in the Northeast.[1]

We encourage USEPA's investigation and application of all available tools in the Clean Air Act (CAA) that can help resolve, once and for all, the continuing problem of acid deposition (colloquially "acid rain"). Because the acid rain problem in the Northeast has only been partially addressed to date through current programs, establishing a secondary National Ambient Air Quality Standard (NAAQS) for the combination of oxides of nitrogen (NO_x) and oxides of sulfur (SO_x) has great potential towards making the additional progress needed. We are heartened by the USEPA's efforts to build the technical background and documentation for taking this possible step.

NESCAUM states have a decades-long history in seeking cooperative solutions toward solving the acid deposition problem. For example, the Adirondack Long-Term Monitoring program run by New York State since 1982 has served and continues to serve as a core source of important monitoring data on the effects of acid deposition in sensitive ecological systems, as well as a model for other scientific research studies.[2] In 1998, governors and premiers approved the New England Governors/Eastern Canadian Premiers (NEG/ECP) Acid Rain Action Plan, acknowledging that a unified course of research and action is required to address acid rain across

[1] NESCAUM is the regional association of state air pollution control agencies representing Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont.
[2] J. Jenkins, K. Roy, C. Driscoll, and C. Buerkett, "Acid Rain and the Adirondacks: A Research Summary," Adirondack Lakes Survey Corporation, Ray Brook, NY (2005).

borders. In addition to improving data quality and availability, the NEG/ECP region surpassed its 20% NO_x emissions reduction goal by 2007 and was on track to surpass its 50% SO_x emissions reduction target by 2010 as a result of this action plan.

The secondary NAAQS is a promising, albeit long neglected, air quality management tool available in the CAA. The historical focus on the public health-based primary NAAQS, while clearly important, has had perhaps the unintentional effect of marginalizing ecosystem protection under the CAA. The secondary NAAQS has become, almost literally, a second class citizen. We believe, however, that the CAA was meant to be fully implemented as written by Congress, and that Congress intended the statutory language on protecting public welfare values with a secondary NAAQS to have independent meaning from the primary NAAQS. The two NAAQS are framed for different and distinct purposes, and a primary NAAQS may not adequately address welfare harms.

NESCAUM has previously endorsed establishing a secondary NAAQS that is protective of public welfare and different in form from the primary NAAQS.[3] We also note the federal D.C. Circuit's 2009 decision remanding to the USEPA the secondary fine particulate matter ($PM_{2.5}$) NAAQS (initially set equal to the primary NAAQS) for reconsideration of its adequacy to protect visibility as a public welfare value (*American Farm Bureau Federation v. EPA*, 559 F.3d 512 (D.C. Cir 2009)).

The Acid Rain Program, created under the 1990 CAA Amendments, was an important step forward in addressing acid deposition. With the implementation of this program and other measures that are reducing emissions of NO_x and SO_x, we have been tracking a decline in acid deposition over time in our region. Attached are our most recent results for New England that plot strong correlations ($R^2 > 0.75$) between declining upwind power plant emissions and downwind acid deposition.

With the observed emissions and deposition decreases occurring over time, sensitive ecosystems are now slowly recovering, but their recovery rates are tempered by the lingering effects of historical acid deposition loadings and long-term depletion of important base cations from soils. While we are clearly seeing positive results from past and current measures, we remain concerned that regions within the Northeast and elsewhere will continue to experience damaging levels of acid deposition and delayed recoveries without greater reductions.[4] The additional

[3] *See, e.g.,* oral testimony of Dr. Paul J. Miller, NESCAUM, on U.S. EPA's Proposed Rule on the National Ambient Air Quality Standards for Ozone (72 FR 37818-37919), August 30, 2007, Philadelphia, PA, available at: http://www.nescaum.org/activities/comments-and-testimonies.

[4] *See, e.g.,* L. Chen and C. Driscoll, *Modeling the response of soil and surface waters in the Adirondack and Catskill regions of New York to changes in atmospheric deposition and historical land disturbance,* Atmospheric Environment, 38: 4099-4109 (2004); T. Sullivan, "Assessment of the Extent to Which Intensively-Studied Lakes are Representative of the Adirondack Mountain Region," Final Report, Prepared for the New York State Energy Research and Development Authority, November 2006, available at: http://www.nyserda.org/publications/Final%20Report%2006-17complete-web.pdf; B. Cosby, et al., "Acidic Deposition Impacts on Natural Resources in Shenandoah National Park," Technical Report NPS/NER/NRTR-

achievable reductions from the proposed Transport Rule will help, but timely ecological system recovery may call for more aggressive reductions on an accelerated schedule.

In light of past success and the recognized need to do more, NESCAUM strongly encourages and supports the USEPA in continuing its evaluation and potential promulgation of a secondary NO_x/SO_x NAAQS to address the continuing effects of acidic deposition.

If you or your staff has any questions on our comments, please contact Dr. Paul Miller at NESCAUM (tel: 617-259-2016).

Sincerely,

Arthur N. Marin
Executive Director

Attachment: Correlation plots of NO_x/SO_x emissions and acidic deposition

cc: NESCAUM directors
Lydia Wegman, USEPA
Steve Page, USEPA
Dr. Holly Stallworth, USEPA re: CASAC NOx/SOx 2ndry NAAQS Review Panel
Dr. Richard Scheffe, USEPA re: Technical Contact, NOx/SOx Policy Assessment

2006/066, National Park Service: Philadelphia, PA, 2006; T. Sullivan, et al., *Streamwater acid-base chemistry and critical loads of atmospheric sulfur deposition in Shenandoah National Park, Virginia*, Environmental Monitoring and Assessment, 137: 85-99 (2008); S.G. McNulty et al., *Estimates of critical acid loads and exceedances for forest soils across the conterminous United States*, Environmental Pollution, 149: 281-292 (2010)

Attachment
Correlation plots of NO_x/SO_x emissions and acidic deposition

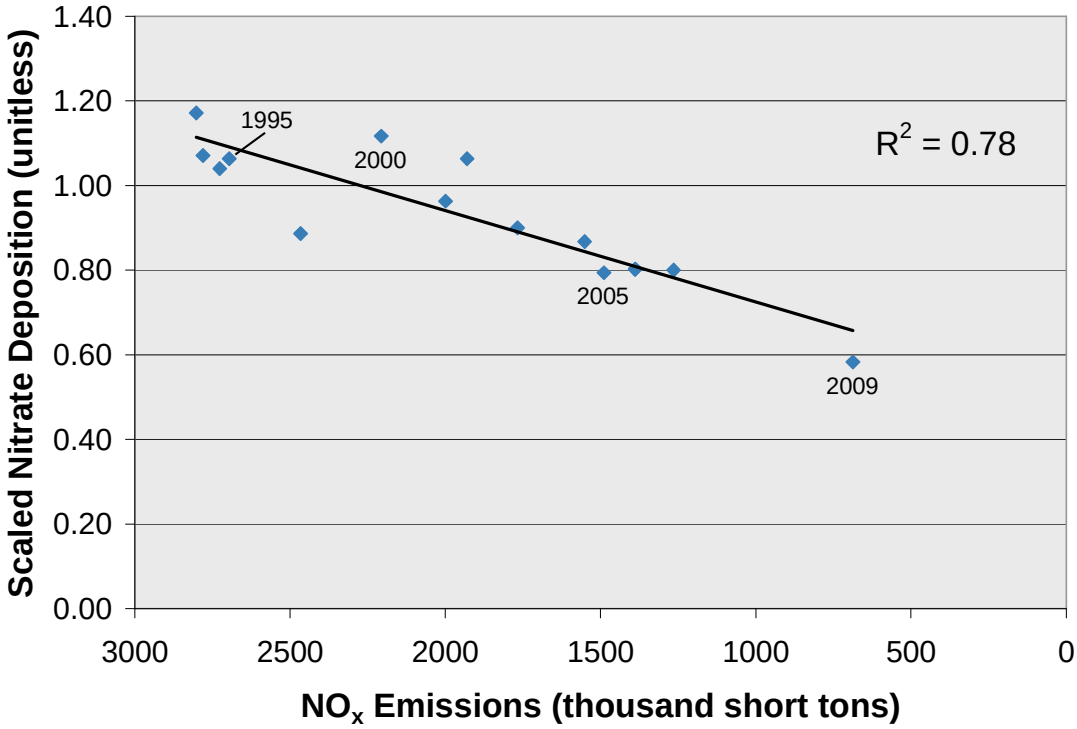

Figure Caption: Annual fossil fuel power plant NO_x emissions correlation with the combined nitrate precipitation-weighted and total wet deposition scaled to a mean of unity in the New England region from 1995 to 2009. Points are labeled at ~5-year intervals to help illustrate trend over time. Note that emissions on x-axis are plotted on a decreasing scale from left to right.

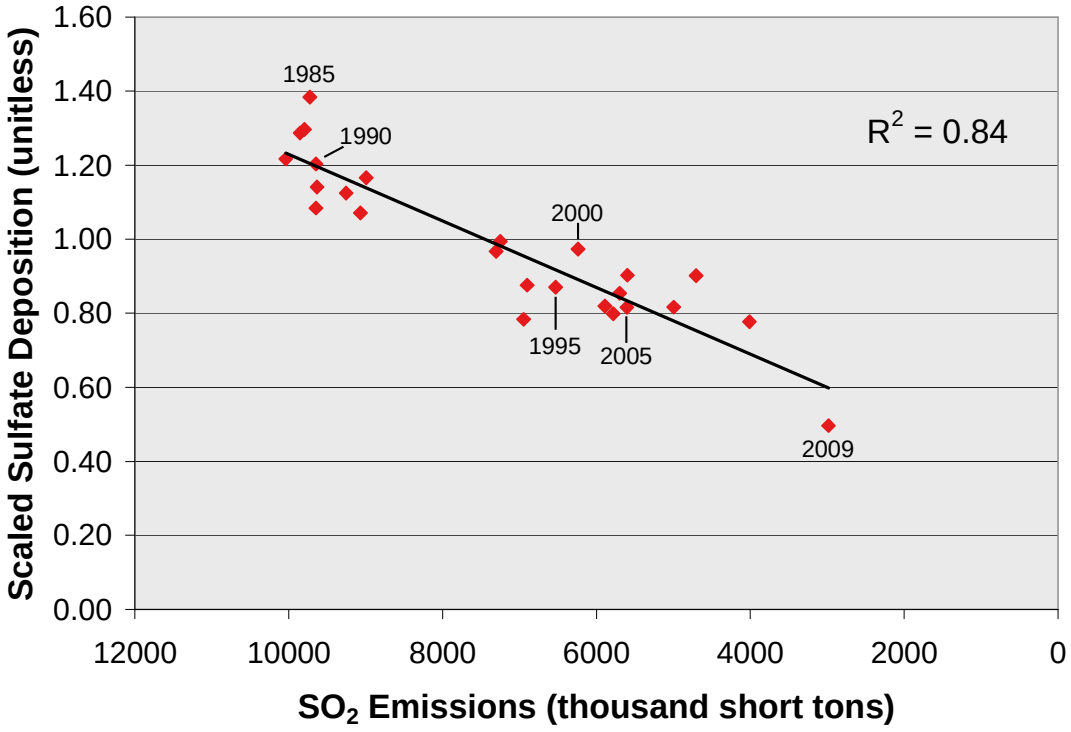

Figure caption: Annual fossil fuel power plant sulfur dioxide (SO_2) emissions correlation with the combined sulfate precipitation-weighted and total wet deposition scaled to a mean of unity in the New England region from 1985 to 2009. Points are labeled at ~5-year intervals to help illustrate trend over time. Note that emissions on x-axis are plotted on a decreasing scale from left to right.

Notes on plots: The plots are updates of work previously performed by NESCAUM in 1999 under USEPA Project CX826563-01-0 ["Emissions-related acidic deposition trends in Maine and New England," Final Report, NESCAUM, Boston, MA (December 1999), available at http://www.nescaum.org/documents/aciddepofinal.pdf/.]

We estimated the geographical scope of the upwind source region influencing downwind acidic deposition at New England monitoring sites from results of the Regional Acid Deposition Model (RADM), as presented in the USEPA report "Acid Deposition Standard Feasibility Study Report to Congress" (U.S. EPA, 1995). The combined annual power plant emissions data for the states of CT, DE, DC, IL, IN, KY, ME, MD, MA, MI, NH, NJ, NY, OH, PA, RI, VA, VT, and WV are from USEPA. Ontario emissions data are from the Eastern Canada Acid Rain Program and Ontario Power Generation. The annual nitrate and sulfate wet deposition data are from the National Atmospheric Deposition Program for all sites meeting data completeness criteria in ME, MA, NH, and VT. The correlation plots were developed following the methodology of J. Shannon, *Regional trends in wet deposition of sulfate in the United States and SO_2 emissions from 1980 through 1995*, Atmospheric Environment, 33: 807-816 (1999).