

**National Park Service Peer Review Plan for the Rocky  
Mountain Atmospheric Nitrogen and Sulfur Study Report**

3/10/09 DRAFT

**Prepared for John Vimont,  
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## **Introduction:**

The purpose of this plan is to describe the independent peer review process that will be applied to the draft final report of the Rocky Mountain Atmospheric Nitrogen and Sulfur (RoMANS) study, in accordance with interim guidance issued by the National Park Service (NPS) on January 31, 2008.<sup>1</sup> The review process was initiated by a April 27, 2009 memorandum from Christine L. Shaver, Chief, Air Resource Division, National Park Service that identifies the final report of the RoMANS study as a source of influential scientific information based on its potential to influence future changes to various manmade air pollutant emissions activities. It also identifies Marc Pitchford, Ph.D., a research meteorologist with the Air Resource Laboratory, National Oceanic and Atmospheric Administration (NOAA), available to assist NPS through an interagency agreement with NOAA,<sup>2</sup> as the peer review manager.

Based on routine monitoring, nitrogen deposition rates have been increasing in the last two decades and exceed the levels identified by the park as the critical load established to protect critical park ecosystems. The RoMANS study was designed to respond to the need for more information concerning nitrogen and sulfur deposition at Rocky Mountain National Park, including characterization of the deposition levels, mechanisms involved and the emission sources responsible for the deposited materials. In particulate form, nitrogen and sulfur compounds also contribute to visibility impairment, which is an additional issue investigated by the RoMANS study. The RoMANS study included field campaigns to collect data during two 5-week periods in 2006, with monitoring at a primary site in Rocky Mountain National park, two secondary sites and a series of satellite sites. The field campaigns were followed by a 2-year period of data analysis, modeling and assessment and report preparation designed to generate and document information that addresses the study objectives.

The purpose of this independent peer review is to acquire an objective critical evaluation of the quality, objectivity, utility and integrity of the information generated by the RoMANS study as documented in its final report. A small group of technical experts from organizations excluding those who were involved in the RoMANS study will be recruited to perform the peer review. All peer review comments will be transmitted to the RoMANS study team who will respond to each comment and will have the opportunity to modify the final report to correct deficiencies, to clarify information, and/or to remove inappropriate or unnecessary materials. The review draft version of the report, March 2009, this peer review plan, reviewer comments, study team responses and the final

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<sup>1</sup> National Park Service, U.S. Department of the Interior, "Interim Guidance Document Governing Code of Conduct, Peer Review, and Information Quality Correction for National Park Service Cultural and Natural Resource Disciplines" issued by Herbert C. Frost, Acting Associate Director, Natural Resource Stewardship and Science, January 31, 2008.  
<http://www.nps.gov/policy/Interimpeerreview.htm>.

<sup>2</sup> NPS interagency agreement number F2350086127. Dr. Pitchford can be reached at [Marc.Pitchford@NOAA.gov](mailto:Marc.Pitchford@NOAA.gov).

version of the report will be posted to an NPS web site <http://www.nature.nps.gov/air/Pubs/regionPark.cfm> where they will be publicly accessible.

### **Approach Overview:**

Within thirty days of the completion of the report, a panel of three to five experts in appropriate disciplines will be recruited by the review manager to review of the RoMANS study report. Working independently, each reviewer will have thirty days to review, prepare comments and transmit them to the review manager. Each reviewer will be asked to provide comments in response to general questions on the entire report, as well as to provide more technical feedback on topics within their individual areas of expertise. The identities of the peer reviewers will be withheld from the public and the RoMANS study team until the reviewers have submitted their comments to reduce the possibility of inappropriate attempts to influence their reviews.

Upon receipt of reviews from each of the peer panel members, the review manager will transmit the comments to the RoMANS study manager who will have thirty days to respond to all comments in writing to the review manager. Within two weeks of the receipt of response the review manager will prepare the peer review report which will consist of summaries of the peer review comments and study manager responses, the names and qualifications of the peer review panel members, and a link to the revised final report. It will also include appendices having complete texts of the peer review comments and responses, and copies of all other pertinent documents (e.g. reviewer conflict of interest and confidentiality forms, reviewer resumes, etc.).

Though not solicited, public comments on technical aspects of the RoMANS study received during the peer review process will be evaluated by the review manager and incorporated into the review process if he judges them to be unique and insightful. Such comments received prior to the initiation of the peer reviewers' 30-day period may be forwarded to the peer review team for their comments. Otherwise public comments received prior to the end of the peer review period and judged unique and insightful will be included in the comments forwarded to the RoMANS study manager for his response.

### **Review Questions:**

The following general and discipline-specific questions were generated in consultation with the RoMANS study manager. Answers that indicate deficiencies need to include specific examples of the issues identified (i.e. reference to the specific point in the draft report) and the rationale for the reviewer judgment. Where possible, suggestions concerning how deficiencies can be removed or mitigated should be specified. In addition to responding to these questions, the reviewers are encouraged to provide specific comments indexed by page and paragraph.

### General Questions

1. Are the purposes for and methodologies underlying the activities described clearly presented, appropriate, and valid?
2. Is the information presented well-written, complete, logical and understandable?
3. Are the results, conclusions, and findings reasonable and supported by the data and other evidence?
4. Are alternative conclusions and counter arguments appropriately considered?
5. Do you have any additional comments concerning the appropriateness of the technical effort or the applicability of the results/finding of the RoMANS study final report as input to NPS management decisions or policy development?

### Atmospheric Measurements/Deposition

1. Is the overall air quality/deposition monitoring design (e.g. network configuration, study duration/selected periods, etc.) adequate for this study?
2. Are the methods used in this study to monitor and assess wet and dry deposition appropriate, and were they appropriately applied?
3. Are deposition levels and composition correctly inferred from the measurement?
4. Are inferences concerning the levels, composition and type (e.g. wet/dry) of deposition fairly made?

### Source Attribution

1. Is the overall approach for source attribution (i.e., weight of evidence using multiple attribution methods) appropriate for this study?
2. Are the individual attribution methods adequately described, justified and applied?
3. Are the attribution results reasonable and supported by the evidence presented and are alternate interpretations considered?

### Atmospheric Visibility

1. Is the overall approach for characterizing the levels and contributing species to visibility adequate for this study?
2. Are the various components of the monitoring and assessment methods adequately described, justified and applied?
3. Are the visibility results reasonable and supported by the evidence presented?

### **Reviewer Selection:**

Three to five scientists with recognized expertise in atmospheric deposition, source attribution and atmospheric visibility will be selected by the review manager to serve as peer reviewers for the RoMANS study report. Each will have to agree in advance to being identified (name, affiliation and brief CV) and having their unattributed comments included in the final review report, to signing NPS conflict-of-interest and confidentiality statements (see attached copies), and to provide their written review comments emailed to the peer review manager within the 30-days review period. Among those excluded from consideration as a peer reviewer are those who currently or recently (within the last 12 months) are employed directly by the NPS Air Resources Division, or as an employee, consultant, shareholder, or owner of an organization receiving funding support (i.e. via contract, grant or cooperative agreement) directly or indirectly through sub-agreements from the NPS Air Resources Division.

Recruitment of reviewers will be done via phone and email correspondence by the review manager from a list of possible candidates assembled by the review manager with input from the RoMANS study manager. However the names of those selected will be held confidential until the review period is ended.

A standard letter acknowledging the agreement to act as a peer reviewer (see attached) will be sent to all selected reviewers. For non-government reviewer, a stipend of \$1000 to be paid upon receipt of the written reviews will be offered as an incentive and to compensate for the effort of reviewing the RoMANS study report.

### **Peer Review Report:**

The peer review report will include a description of the peer review process, a summary/synopsis that consolidates the major peer review comments and the responses of the RoMANS study team, verbatim copies of all comments and responses in an appendix, and all other associated documents (e.g. this plan, peer reviewer information, etc.) will either be included as an appendix or listed as web links. Public comments that have been incorporated into the process (i.e. those judged to be unique and insightful) and study team responses to those comments will also be included in the report. This report will be disseminated to the public on the NPS web site  
<http://www.nature.nps.gov/air/Pubs/regionPark.cfm>.

## APPENDIX A

### CONFLICT-OF-INTERESTS AND CONFIDENTIALITY STATEMENT FOR INFLUENTIAL NPS SCIENTIFIC INFORMATION PEER REVIEWERS

1. **POTENTIAL CONFLICTS-OF-INTERESTS:** As a National Park Service scientific information peer reviewer, you must declare any potential conflict situations. Potentially biasing affiliations or relationships need to be communicated by the prospective peer reviewer to the NPS peer review manager.

A potential conflict exist for anyone who (or who has an immediate family member who) is currently or recently has been (within the last 12 months) employed directly by the NPS Air Resources Division, or as an employee, consultant, shareholder, or owner of an organization receiving funding support (i.e. via contract, grant or cooperative agreement) directly, or indirectly through sub-agreements, from the NPS Air Resources Division. Additional potential conflicts of interest that should be identified to the NPS peer review manager include any significant financial or other interests in organizations that are thought to contribute to nitrogen and sulfur deposition at Rocky Mountain National Park, including significant emissions sources such as fossil fuel combustion sources, transportation and agriculture in Colorado or surrounding states. The NPS peer review manager will evaluate any potential conflicts that you identify to determine whether they disqualify you as a reviewer of this report.

2. **YOUR OBLIGATION TO MAINTAIN CONFIDENTIALITY:** A peer reviewer for a potentially influential NPS information product must agree to be bound by the strictest scientific ethics. For this reason, you must not copy, quote, or otherwise use or disclose to anyone any material that is not publicly available, during this review process, including your identity as a peer reviewer. If you believe a colleague can make a substantial contribution to the review, please obtain permission of the NPS peer review manager *before* involving others in your review.
3. **AVAILABILITY OF THE REVIEWERS NAMES AND IDENTITIES:** The National Park Service expects to provide a list of peer reviewer names, affiliations, and a brief CV to the author and the public. The NPS will also provide the author and the public with access to the reviewer's comments unattributed to the specific reviewer. It should be recognized that this arrangement does not guarantee anonymity.

## **YOUR POTENTIAL CONFLICTS**

Except as identified below (or on additional pages attached) I have read and understand the description of potential conflicts of interest and I believe that to the best of my knowledge I have no potential conflicts of interest (except as identified here) that would influence my serving as an impartial peer reviewer for the RoMANS study final report. I understand that the NPS peer review manager will be the final arbiter of any identified potential conflicts of interest and further that if a conflict exists or arises during my service I am obligated to notify him as soon as possible. I further understand that **I must sign and return this Conflict Statement to the peer review manager before I may serve.**

## **MAINTAINING THE CONFIDENTIALITY OF OTHERS**

I will not divulge or use any confidential information that I may become aware of during my service.

## **YOUR IDENTITY AS A REVIEWER**

I understand my identity as a reviewer (i.e. name, affiliation and brief C.V.) and my comments (unattributed) will be made available to the authors of the RoMANS study report and the public.

Reviewer's Name (Please print or type) \_\_\_\_\_

Reviewer's Signature \_\_\_\_\_

Date \_\_\_\_\_

Reviewer's Position and Affiliation \_\_\_\_\_

## APPENDIX B

Dear XXXXXXXX,

The National Park Service relies on both internal and external reviewers to ensure the quality of NPS generated and sponsored scientific and scholarly information products and to validate the credibility of decisions land managers may make based on these documents. I am pleased that you have agreed to review the draft final RoMANS study report, as we believe your expertise on some of the topic included in this report will provide an independent view of its value as a source of information to inform NPS management decisions. I received your signed Conflict of Interest and Confidentiality form.

A copy of the XXX page report is included, as are the general and discipline-specific questions that should be the basis of your review. Your review should be an attached MSWord file emailed to me no later than XX/XX/XX. As you know, NPS will be including your review verbatim as part of the peer review report that I will prepare and that will be displayed on a public website. Though your comments will be anonymous, your identity as one of the three peer reviewers will also be provided in the final peer review report.

Your review should address all of the general questions (see attached list of question) as well as the (one or two discipline specific for this reviewer) questions for which you have expert knowledge. You may respond to any of the other discipline-specific questions as well. Answers that indicate deficiencies need to include specific examples of the issues identified (i.e. reference to the page/paragraph in the draft report) and the rationale for the reviewer judgment. Where possible, suggestions concerning how deficiencies can be removed or mitigated should be indicated. In addition to responding to these questions, you are encouraged to provide a list of specific comments indexed by page and paragraph.

I recognize that professional reviews take time from your busy schedule and appreciate your willingness to assist the National Park Service in this important task. Feel free to contact me if you have any questions or comments concerning the peer review.

Sincerely,

Marc Pitchford, email address & phone number