

**Scientific Peer Review of Wild Rice Sulfate Standard Study and MPCA Analysis:
Purpose and Process
March 2014**

The Minnesota Pollution Control Agency (MPCA) has contracted with Eastern Research Group, Inc. (ERG) to convene and facilitate a Scientific Peer Review of the Wild Rice Sulfate Standard Study (Study) and MPCA analysis (Analysis). This peer review is the next step in MPCA's ongoing efforts to enhance scientific understanding of the effects of sulfate on wild rice. This enhanced scientific understanding will inform MPCA's review of the wild rice sulfate standard and the development of a rulemaking proposal, if warranted, regarding that standard.

The following paragraphs provide information about the scientific peer review purpose and process. For further information, please contact Shannon Lotthammer, MPCA, at 651/757-2537 or shannon.lotthammer@state.mn.us. Questions about the Study or the wild rice sulfate standard may also be directed to Shannon. Additional information is available on MPCA's web site at <http://www.pca.state.mn.us/ktqh1083>.

What is the Wild Rice Sulfate Standard Study?

In 2010, MPCA initiated a multi-year effort to clarify implementation of the state's wild rice sulfate standard. As part of this effort, the state legislature funded a study to gather additional information about the effects of sulfate and other substances on the growth of wild rice. The Study consists of five components:

- Field survey of wild rice habitats
- Laboratory hydroponic experiments
- Outdoor container experiments
- Collection and analysis of rooting zone depth profiles
- Sediment incubation laboratory experiments

What is scientific peer review?

Peer review is an important part of the scientific process, because it serves as a "quality control" mechanism for scientific investigation. During peer review, scientists with relevant expertise, who are independent of the scientific work conducted, review that work to determine if it is technically sound, and therefore can be relied upon to inform future work or decision-making.

What is the purpose of this scientific peer review?

Scientific peer review typically occurs as part of the process of publishing studies in scientific journals. In the case of the Study, MPCA is analyzing the Study results prior to publication of those results in scientific journals. Therefore, MPCA is undertaking this peer review to get independent scientific feedback on the Study and MPCA's Analysis. The scientific peer review process will focus on technical questions associated with the Study and MPCA's Analysis, such as: were the Study data collected properly, is the statistical analysis valid, and are the data being interpreted properly.

The results of the peer review will inform MPCA's efforts to enhance and refine the analysis of the effects of sulfate on wild rice. MPCA has not yet developed recommendations or a proposal regarding any changes to the wild rice sulfate standard. This peer review is a step in the larger process in which MPCA will consider scientific information to determine if changes to the wild rice sulfate standard are needed. If a rulemaking proposal for such changes is needed, MPCA will also seek informal and formal public comment on any recommendations and rulemaking proposal that are developed.

Why is MPCA using a contractor rather than managing the peer review itself?

MPCA has contracted with a third party to maintain the objectivity of the peer review process. MPCA developed the Study, contracted for the Study activities, and is interpreting the data from the Study. Peer reviewers will consider questions about the Study itself as well as MPCA's Analysis.

Is peer review a standard part of MPCA's water quality standards development process?

Yes, although normally MPCA relies on published peer-reviewed studies during the development of water quality standards rather than contracting for peer review. When the MPCA proposes new or revised standards, there is also an extensive rulemaking process that includes opportunities for public comment.

How will this scientific peer review process work?

The peer review process has five key steps:

1. Nomination and selection of the peer reviewers.
2. Development of the charge questions for the reviewers to consider.
3. Development and distribution of the materials for review.
4. Conducting the peer review and meeting.
5. Documenting the peer review.

Any member of the public may nominate candidates to serve as peer reviewers; nominations will be accepted through April 15th. Candidates must have relevant scientific qualifications and no conflict of interest. See *Request for Nominations for Scientific/Technical Experts for Peer Review* announcement at <http://www.pca.state.mn.us/kppg38rq> for details. ERG will follow up on all nominations and will also independently search for qualified candidates. ERG will then review candidates' qualifications and select and contract with those scientists who are most qualified to serve on the panel and who have no conflict of interest.

Concurrent with the reviewer selection process, ERG will work with MPCA to develop the charge to reviewers. The charge will include specific technical questions that reviewers will be asked to address. ERG will send the review materials and the charge to the reviewers at least six weeks in advance of the two-day review meeting; these materials will also be made available to the public on this page when they are shared with the reviewers.

The two-day peer review meeting will be held in the summer 2014 in the Twin Cities Metropolitan Area. Reviewers will discuss their individual responses to the charge questions, which will likely include multiple perspectives, and will exchange views on the issues. After the meeting, reviewers will individually submit their final written responses to charge questions. Members of the public may observe reviewer discussions and make brief oral comments at the start of the meeting regarding the scientific materials and technical questions to be discussed.

How will the public be involved in the scientific peer review process?

The public can nominate qualified scientific experts to serve as peer reviewers; nominations will be accepted through April 15, 2014 (see <http://www.pca.state.mn.us/kppg38rq> for details). At least six weeks prior to the peer review meeting, the public will be able to access the review materials, including the charge questions on this site. Members of the public who wish to observe the reviewer discussions at the panel meeting this summer can register for the meeting on ERG's registration page. MPCA will provide a link to ERG's registration page in late May 2014. When registering for the meeting, interested observers may sign up to make brief oral comments on the Study. The panel meeting will be focused on

peer review of the Study and MPCA Analysis and therefore will not be an opportunity for the public to make general comments on the wild rice sulfate standard.

Will the scientific peer review panel provide input on the existing standard? Will it suggest what, if any, changes are needed to Minnesota's water quality standards to protect wild rice?

No. The panel will be reviewing the Wild Rice Sulfate Standard Study and MPCA's Analysis. The responsibility for proposing any changes to Minnesota's water quality standards rests solely with MPCA.

What will happen after the peer review has concluded?

MPCA will consider the scientific peer review panel's responses as the agency further refines its technical analysis and develops a Technical Support Document, if warranted, to describe the scientific basis for any proposed changes to Minnesota's water quality standards.

MPCA knows there is also significant interest in more general dialogue about the Study and Analysis, beyond the specifics of the scientific peer review. MPCA will continue to meet with interested parties throughout 2014 to discuss the Study, MPCA's ongoing Analysis, and other relevant information.

Separate from this peer review, MPCA will also begin exploring implementation and related policy questions including treatment options, pollution prevention opportunities, and guidelines for permitting and compliance. MPCA will seek stakeholder input and dialogue on these implementation questions, which may be addressed in a future wild rice water quality standard rulemaking.

Any proposed change to the wild rice water quality standard would be adopted into Minnesota's water quality standard rule (Minnesota Rules Chapter 7050) in accordance with the procedural requirements of the Minnesota Administrative Procedures Act and would require the approval of the USEPA.

Summary of Key Steps and Timelines

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| 1. Wild Rice Sulfate Standard Study completed | December 31, 2013 |
| 2. MPCA preliminary analysis of study reports | March 2014 |
| 3. Nomination and selection of peer reviewers | March-May 2014 |
| · Note: Nominations will be accepted by ERG until April 15 th | |
| 4. Registration opens for peer review meeting | Late May 2014 |
| 5. Final peer review materials available to the public | TBD, at least 6 weeks before mtg. |
| 6. Peer review panel meeting | TBD, likely late June 2014 |
| 7. Final meeting summary report from ERG | TBD, likely late July 2014 |
| 8. MPCA development of Technical Support Document (if warranted) | Summer – Fall 2014 |
| 9. Formal wild rice water quality standard rulemaking (if warranted) | Beginning late 2014 or early 2015 |