

December 20, 2012 Wild Rice Standards Study Advisory Committee Conference Call Summary and Follow-up Items

Attendees: Kurt Anderson, Mike Hansel, Ann Geisen, Jennifer Engstrom, Peder Larson (for David Smiga), Joe Mayasich, Paula Maccabee, Anne Nelson, David Hatchett, Mike Robertson, Dave Skolasinski, Tim Peterkoski, Robin Richards, Rachel Walker, Chris Wagener, Lori Andresen (for Sara Barsel), Darren Vogt

MPCA attendees: Shannon Lotthammer, Edward Swain, Gerald Blaha, Mark Tomasek, Phil Monson, Pat Engelking

1. Update on Research: Phil Monson and Ed Swain gave updates on existing research projects and additional projects that the MPCA is contracting for at this time. Dr. Pastor is working on method development and range-finding tests for three life stages of wild rice: germination, post-germination and seedlings. Both Dr. Pastor and Dr. Myrbo will be submitting progress reports at the end of the year. Two new contracts are in development with the Science Museum of Minnesota (analyses, lab-to-lab comparison of sulfide analyses and data interpretation help) and University of Minnesota-Duluth (measure, interpret and model sulfide, sulfate, oxygen and iron in rooting environment of wild rice).

Follow-up item 1—The MPCA will send a Doodle poll to check availability for a technical conference call to discuss hydroponics research in January if possible before the January 16 meeting in Duluth. **Note:** technical conference call set for **Wednesday, January 9, 2013 from 3-5 p.m.**

Follow-up item 2: The MPCA will provide some information on categories of information that will be included as part of the literature review. See below.

Types of Sources to be used in Wild Rice Literature Review

- Peer-reviewed scientific literature
- Government documents and studies
- Tribal studies and traditional knowledge
- Books
- Theses and Dissertations
- Other relevant studies/data

Follow-up item 3: MPCA will send the progress reports from Amy Myrbo and John Pastor to the advisory committee after MPCA reviews. MPCA will be sending these after we review.

Follow-up item 4: MPCA will send the work plan for Nate Johnson's research after it is complete. Ed Swain will check in with Nate Johnson to see if systems will be aerated or renewed.

2. Budget Update: Pat Engelking gave an update on the wild rice budget. Remaining funds for research projects next year is about \$260,000.

3. Water used for Production of Wild Rice: Gerald Blaha gave a brief update of MPCA activities related to "water used for production of wild rice." The agency has met with Tribes, EPA and environmental groups on this issue. This topic will be the focus of the next Wild Rice Standards Advisory Committee on January 16 in Duluth.

Follow-up item 5: The MPCA will send additional information on “water used for production of wild rice” out to committee members before January 10. Gerald Blaha sent a discussion document to the advisory committee on January 7, 2013.

4. Mid-Project Review Meeting

Pat Engelking provided an update of what the MPCA is considering for the mid-project review meeting. It will be held on Thursday, February 28 and Friday, March 1 at Dakota Lodge (approx. 5 miles from MPCA) starting in the afternoon on Thursday and continuing to no later than 1:30 on the afternoon of March 1. The MPCA is also planning an open house part of the meeting with very brief presentation and a series of displays depicting the various research efforts from about 6 p.m. to 8 p.m. on Thursday, February 28.

Next Wild Rice Standards Study Advisory Committee Meeting: January 16, 2013, 12:30-3:30 p.m. at the MPCA Duluth Regional Office, 525 Lake Avenue South, Suite 400. The main focus of this meeting will be discussions relating to “water used for production of wild rice.”

Wild Rice Standards Study Advisory Committee
September 27, 2012 Meeting
MPCA Board Room Central
12:30-3:30 p.m.

Agenda

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| 1. Welcome/Introductions | 12:30 p.m. |
| 2. Current Overall Study Approach and Hydroponics Update | 12:40 p.m. |
| 3. Wild Rice Standards Study Field Survey—Dr. Amy Myrbo | 1 p.m. |
| Break | 2 p.m. |
| 4. “Water Used for Production of Wild Rice” Update/Discussion | 2:15 p.m. |
| 5. Mid-Project Review Meeting | 3 p.m. |
| 6. Next Steps | 3:15 p.m. |

Wild Rice Standards Study Advisory Committee 9/27/12 Meeting Summary and Follow-up Items

Attendance (in person): Kurt Anderson, Len Anderson, Sara Barsel, David Biesboer, Jennifer Engstrom, Paula Maccabee, Anne Nelson, John Dockter, Bob Pillsbury, Robin Richards, Mike Robertson, Nancy Schuldt, Tom Howes, David Skolasinski, Rachel Walker, Peder Larson, Andrew Chelseth, Pat Engelking, Ed Swain, Gerald Blaha, Phil Monson, Mark Tomasek, Shannon Lotthammer, Amy Myrbo

(on phone): Darren Vogt, Tracy Ekola, Peter Lee, Joe Mayasich, Jeff Hanson, Christine Wagener, Ann Geisen, Lori Andresen, David Hatchett, Robert Shimek, David Smiga

Agenda Item 1: Welcome and Introductions

Agenda Item 2: Current Overall Study Approach and Hydroponics Update

Note: Discussion of the overall study approach was moved to later on the agenda.

Ed Swain gave an update on the method development for the hydroponics research that Dr. John Pastor is conducting at the University of Minnesota-Duluth (UMD). He noted that the seedling plants are sensitive and need to have a 5mm diameter stem (about 5-6 weeks post germination) to be robust enough for transfer into hydroponic containers. Ed mentioned the possibility that washing off of the sediment may be hard on the seedlings. Current plans are to look at other life stages of the wild rice plant as earlier life stages might be more sensitive to sulfate or sulfide. These will include germination, post germination and seedling life stages.

An advisory committee member questioned whether transfer of the plants was necessary and if different substrates could be used. MPCA staff agrees that pure hydroponic culture or hydroponic culture with an inorganic substrate such as sand would have advantages. Staff has therefore asked Dr. Pastor to run trials using alternative substrates that would either eliminate transfer of plants or minimize negative impacts of transfer.

Ed Swain also briefly mentioned some additional work that will be completed by Dr. Nathan Johnson at UMD that will look at sulfate and sulfide penetration in to sediment cores that have been incubated at different temperatures. The purpose of this work is to mimic the effects of wintertime discharge. Some advisory committee members were concerned that discharges with sulfate in the winter would just be a problem in the spring.

Follow-up item: A member of the Wild Rice Standards Study Advisory Committee asked to see the draft work plan for Nate Johnson. Ed Swain will circulate the work plan when it is completed.

Agenda Item 3: Wild Rice Standards Study Field Survey Presentation

Dr. Amy Myrbo from the University of Minnesota gave a presentation on the 2011 preliminary field survey and the 2012 Wild Rice Standards Study field survey. She also provided a demonstration of the methods for obtaining pore water samples from sediment cores at the meeting.

A question by an advisory committee member about when the analyses will be completed and data would be available from the 2012 study. Ed Swain said that it will take some time to get all the analyses completed but he expects we will have preliminary data by the February mid-project review.

Follow-up item: There was a question about some missing data in the final report for the 2012. An Excel file with the data is attached to this report.

Agenda Item 4: “Water used for Production of Wild Rice” discussion

Mark Tomasek gave a brief introduction to the “Water used for Production of Wild Rice” discussion and noted that the original 1973 rulemaking was proposed for all waters but the scope of the standard was narrowed to “water used for production of wild rice” after a challenge in the rule hearings.

Gerald Blaha outlined the MPCA’s proposed approach at this time. He said that the MPCA has a legislative mandate to provide a list of wild rice production waters in the rule. The MPCA is thinking this listing may include two or more categories. The first category might include waters which the MPCA is very certain about (waters for which the DNR or others have estimates of stand density or first-hand knowledge of significant wild rice stands.) A second category of waters could be a “watch” category, where additional investigation might be needed to determine whether the waters would be considered wild rice production waters.

The MPCA is also anticipating including criteria that will take into account three things: history of wild rice harvest, minimum acreage and stand density.

Members of the Advisory Committee had many comments and questions about this topic. One member asked who would have the burden to determine which waters are wild rice production water for waters not on the current list. Others wanted more clarification about how determinations of wild rice production waters would be done, e.g., what data would be used, who would do it, etc. Committee members had questions about whether the list of wild rice production waters would apply to both the numeric and narrative parts of the standard. Another part of the discussion focused on whether small stands of wild rice should be considered wild rice production waters as they may be important for genetic diversity or whether this would be impractical. One advisory committee member commented that criteria for consideration should be developed before waters any waters are listed. Another member commented that the current rulemaking timeline seemed ambitious as there is much yet to be resolved on this issue.

Follow-up item: Members of the Advisory Committee asked for a separate meeting to further discuss this topic, and requested that the MPCA have a more specific draft proposal at the time of the meeting. Mark Tomasek said that the MPCA would be holding a conference call with Tribes in October and that the

MPCA would send around a Doodle poll after that to the advisory committee to schedule a longer discussion on this topic. The MPCA will provide a proposal for comment at that time.

Agenda Item 5 & 6: Mid-Project Review Meeting, Current Overall Study Approach and Next Steps

Pat Engelking led a brief discussion about the larger mid-project review meeting that would be planned in the mid-to-late February timeframe. The MPCA asked the advisory group's opinions on who should be invited to this meeting. Specifically, MPCA asked committee members if it should be a working meeting for advisory group members and technical experts or if there should be a broader audience. The MPCA also asked for feedback about dates that should be avoided during that timeframe.

Advisory group members commented that there are many people who are very interested in the Wild Rice Standards Study and that especially during the legislative session there would be much interest in this topic. Possible ways the MPCA could address this was having part of the meeting tailored to a more general interest audience or having a separate meeting for other interested people.

Shannon Lotthammer talked very briefly about the current study approach and said that the MPCA had converted the study plan diagram to a one-page document and made a few changes to reflect timing that has changed for some of the study elements. She said that the MPCA is still on track to finish the studies by the end of 2013 and invited any of the advisory committee members with further questions to call the MPCA wild rice team.

Follow-up Item: Advisory committee members are encouraged to let Pat Engelking know of any conflicting meetings or dates during the mid-to-late February timeframe.

Wild Rice Standards Study Advisory Committee Meeting
Wednesday, June 6, 2012, 10 a.m.-3:30 p.m.
University of Minnesota-Duluth Campus, Griggs Center

Agenda

1. Welcome (Shannon Lotthammer)
2. Introductions/Charge (Pat Engelking)
3. Wild Rice Standards Study Research (year 1 research overview, field survey approach and progress, site selection) (Ed Swain)
4. Hydroponics research (experimental design, methods) (Ed Swain and Dr. John Pastor)

Break

12:15 Lunch (Soup and sandwich buffet with chicken wild rice soup)

5. What we will see (hydroponics and mesocosms) (Dr. John Pastor)

Travel to farm for mesocosm tour

6. Mesocosm tour (Dr. John Pastor)

7. Adjourn

Wild Rice Standards Study Advisory Committee Meeting June 6, 2012

Meeting Summary and Follow-up

Meeting attendees (in Duluth): David Smiga, Tracy Ekola, Rachel Walker, Len Anderson, Joe Mayasich, Sara Barsel, David Schimpf, Paula Maccabee, David Skolansinski, Ann Geisen, Tom Howes, Robin Richards, Mike Robertson, Peter Lee, Bob Shimek, Darren Vogt, Rod Ustipak, Frank Ongaro, Raymie Porter, Kathryn Hoffman, Kurt Anderson, Mike Appelwick, Anne Nelson, David Hatchett, Shannon Lotthammer, Pat Engelking, Ed Swain, Gery Blaha, Phil Monson, John Pastor, Brad Dewey, Peder Larson, Pat Tammen, Bob Tammen, Bill Brice, Mike Hansel, Emily Migliaccio, Bill Scruton, John Myers, Grant Anderson, Bethel Anderson, Deborah Gibbons, Wayne DuPuis, Terry McCarthy

Meeting attendees (on the phone): Alex Kahler (for David Biesboer), Tim Peterkoski, Christine Wagener, Jon Dockter, Bob Pillsbury, Lori Andresen, Jennifer Engstrom, Joel Rohde

1. **Welcome and Introductions:** Shannon Lotthammer opened the meeting with a welcome and review of the agenda items. This was followed by introductions of people in the room and on the phone, recognition of new advisory committee members and a review of the advisory committee principles and goals by Pat Engelking.
2. **Research Update:** Ed Swain presented a research update on 2011 preliminary field survey work to characterize wild rice habitat in surface water, sediment and porewater. His presentation also included a discussion of planned 2012 field survey work (up to 100 sites) and analyses that will be run on the samples. Sites for the field survey will include repeats of some sites sampled in 2011, paddy rice sites, additional sites recommended by advisory group members and some sites identified during the reconnaissance work that took place from May-June 2012. He also described a potential future experiment to add sulfate to mesocosms to observe the time-course of sulfate penetration, sulfide concentrations and the production of metal sulfides. This type of experiment may allow the MPCA to compare the effects of sulfate additions at different temperature.

Dr. John Pastor talked about the hydroponics experiments that will be taking place in his lab at the University of Minnesota-Duluth. He showed an example of the containers he would be using for conducting the hydroponic experiments and discussed the experimental approach. Several advisory committee members had questions about experimental design and methods for these experiments.

Follow-up item: Advisory Committee members have requested a list of the sites that will be sampled for the 2012 field survey. The MPCA will be meeting with the contractor in July to select

sites for the field survey now that all the data from the reconnaissance work has been received. The MPCA expects it will have a list of sites and map of locations by the end of July.

Follow-up item: Advisory committee members expressed interest in getting additional specific detail about the hydroponic experiments. The MPCA said that they would provide this when it is available and also that we would be willing to hold a conference call with interested members of the advisory committee to further discuss the details of the hydroponic experiments. Additional detail about the hydroponics experiments should be available soon and MPCA will plan a conference call to discuss in the next couple of weeks. If you would like to participate in this call and we have not heard from you already, please reply to this e-mail or call Pat Engelking at 651-757-2340.

3. **Sandy lakes water level management:** After lunch, Advisory Committee member Rod Ustipak from the Minnesota Wild Rice Company described some of the work he is jointly conducting with the 1854 Treaty Authority on the Little Sandy and Sandy Lake in St. Louis County (also known as the Twin Lakes) near Virginia. Beaver activity has blocked the natural outflow drainage of water from these lakes and the resulting high-water conditions are impeding the growth of wild rice. As part of this study, the beavers and beaver dams will be removed from these lakes in hopes of establishing a lower and more stable water level to enable the production of wild rice. It is also hoped that the resulting lower water level will also allow field survey crews to sample these lakes in 2012.
4. **Tour of Mesocosms at UMD Farm--**Following Rod Ustipak's presentation, the group traveled to the University of Minnesota-Duluth Research and Field Studies Center (UMD farm) to tour the 100 gallon stock tank mesocosms that John Pastor will be using for the Wild Rice Standards Study. Dr. Pastor and Brad Dewey provided a brief discussion about how the mesocosms are set up and described previous and ongoing research that has been conducted in the mesocosms.
5. **Next Meeting:** At the end of the tour, there was a brief discussion of timing for the next meeting. The MPCA will plan to hold the next meeting of the Wild Rice Standards Study Advisory Committee meeting in mid-to-late September in St. Paul.

Wild Rice Standards Study Citizen Advisory Committee
March 27, 2012 Meeting, 1-3:30 p.m.
MPCA St. Paul Offices, Training Room 2
Agenda

1. Welcome

2. **Updates** (Contracting status, preliminary field survey, literature and data review, EPA conversations, Tribal consultation, adding wild rice researchers to the Advisory Committee, other?)

Break

3. **Wild Rice Standards Study Plan** (Discussion draft e-mailed on 3/16/12)

4. Water Used for Production of Wild Rice

List of waters for potential inclusion in Minnesota Rules Chapter 7050

- Considerations for those wild rice waters added to Minn R. ch. 7050 in 1997 – review of rulemaking rationale and sources of information
- Sources of information for state-wide inventoried wild rice waters
- Review field information (monitoring)
- Other
- Oral history

Water Used for Production of Wild Rice Considerations

- Hearing information (1973) – Dr. John Moyle’s wild rice survey work and observations
- Human harvesting of wild rice
- Wildlife uses
- Annual variability considerations

5. Next Steps

Wild Rice Standards Study Advisory Committee March 27, 2012 Meeting Summary and Follow-up

The third Wild Rice Standards Study Advisory Committee was held at the MPCA's St. Paul Office on Tuesday, March 27, 2012 from 1-3:30 p.m. See below for a list of attendees and a brief summary of agenda items covered in the meeting along with follow-up responses to questions raised at the meeting.

Attendees:

Advisory Committee Members attending in person—Nancy Schuldt, Mike Robertson, David Smiga, Rod Ustipak, Sara Barsel, Kathryn Hoffman, Kurt Anderson, Jon Dockter (for Beth Nelson), Jennifer Engstrom, David Skolasinski, Leonard Anderson, Steve Nyhus (for Tracy Ekola), Anne Nelson, Paula, Maccabee, Frank Ongaro, Mike Appelwick

Advisory Committee members on phone—Joe Mayasich, Tim Peterkoski, Robert Shimek, Darren Vogt, David Hatchett, Ann Geisen (new member from DNR)

Others in St. Paul: Shannon Lotthammer, Mark Tomasek, Gerald Blaha, Patricia Engelking, Edward Swain, Summer Streets, Cori Rude-Young, (all from MPCA), Brian Hiti, Iron Range Resources and Rehabilitation Board (IRRRB), Mike Hansel, Barr Engineering, Peder Larson, representing U.S. Steel, Bill Brice

Others on telephone: Christine Wagener, U.S. EPA, Scott Hall

Agenda Item 1: Introductions/Welcome

Shannon Lotthammer opened the meeting with a welcome for participants and an introduction of Ann Geisen, who is a new addition to the committee from the Department of Natural Resources. Ann is a wildlife lakes specialist in the Brainerd Regional Office working in the DNR Shallow Lakes Program out of the Brainerd Regional Office.

Agenda Item 2: Updates

Contracting Status: Pat Engelking provided this update that the MPCA master contract with the University of Minnesota was signed with an effective date of March 23, 2012. The MPCA is currently working with principal investigators, Dr. John Pastor, U of M-Duluth, and Dr. Amy Myrbo U of M-Twin Cities, on development of work plans. Dr. Pastor will begin work on the hydroponics experiments and Dr. Myrbo will work on the field survey, which will build on the preliminary field survey work conducted in 2011 under separate funding.

Follow-up item: An advisory committee member asked if he could get copies of the submitted proposals. PDF copies of the three proposals received were sent to advisory committee members on Friday, March 30.

Preliminary field survey: Ed Swain reported that this effort, funded separately and begun last year, included 44 sites and eight duplicates. The purpose of the survey was to characterize the environment that wild rice grows well in. The MPCA has received a draft report, which does not include all of the completed analyses. The Science Museum of Minnesota's St. Croix Research Laboratory has been working on a method to analyze sulfide in the porewater samples. Once completed, the Science Museum will train the Minnesota Department of Health Laboratory on this analysis as MDH will be

doing this analysis for the Wild Rice Standards Study work.

A committee member commented that lakes with elevated sulfate levels were not included in the 2011 survey. MPCA responded that for the 2012 work the agency will be looking for sites with elevated sulfate and healthy stands of rice as well as sites that used to support wild rice and no longer do. The MPCA will be asking the advisory committee for suggestions for additional sites.

Follow-up items: Ed will share any additional drafts of the preliminary field study reports with the committee and also share the final report once the MPCA has received it.

Literature review: Summer Streets from the MPCA reported that she is developing a detailed outline for a literature review she is working on for this project. She will also be evaluating data sources once the literature review is completed.

EPA conversations: Mark Tomasek reported that he and Gerald Blaha have held phone conversations with EPA about the anticipated rule revision to further clarify the definition of "water used for production of wild rice," which will likely include inserting into Minn. R. Ch 7050 a list of waters used for production of wild rice. The MPCA has also met with DNR staff to discuss this issue.

Tribal Consultation: The MPCA and Minnesota Tribes held a Tribal Consultation on "Water Used for Production of Wild Rice" on March 12, 2012. MPCA is developing a summary of the meeting, with input from the Tribal participants.

Adding Wild Rice Researchers to Advisory Committee: The MPCA will be adding wild rice researchers to the advisory committee now that the master contract has been signed. The MPCA expects to use a similar process to that used to solicit the original advisory committee members, and plans to add no more than five additional members to the committee. The MPCA's web site and GovDelivery system will be used to get the word out.

Follow-up item: MPCA will solicit wild rice research representatives for the Advisory Committee and will send the current advisory committee members a copy of this request when it goes out.

Agenda Item 3: Wild Rice Standards Study Plan

Shannon Lotthammer discussed the MPCA's process for prioritizing the work in the study protocol and presented a plan and timeline for the first year of the Wild Rice Standards Study. The details of second year tasks will be decided after the results from the first year's work are reviewed. The first year's work will focus on hydroponics experiments, field survey and preparation of container mesocosms for work in 2013. There also might be some analyses/method development done on Dr. Pastor's existing mesocom work.

The MPCA discussed the need to find a source of sediment for the container mesocosm studies and discussed with the committee possible sources of sediment and methods to obtain it. The MPCA said it was currently thinking of obtaining sediment from a lake for the studies.

Members of the committee discussed limitations of the different types of experiments and asked questions about experiments and methods. Shannon Lotthammer noted that a symposium will be planned in January-February 2013 as a key check-in point before the year two activities begin.

The potential timing of the Wild Rice Citizen Advisory Committee Meetings was also discussed with the MPCA suggesting meeting on a quarterly basis. Since research studies and data analyses will not be completed for some time, the MPCA also suggested that the agency could set up site visits for the committee and have researchers visit the advisory committee meeting to provide updates about their work.

Agenda Item 4: Water Used for Production of Wild Rice

Mark Tomasek provided background on the current rulemaking on the topic of “water used for production of wild rice.” He outlined the reasons the MPCA is clarifying this definition, which include wild rice protection for both human consumption and wildlife and the need to reduce uncertainty for regulated parties. He also outlined the timing for the rulemaking associated with clarifying this definition. Discussion with stakeholders is expected to continue through this summer with rulemaking expected to begin in the Fall of 2012.

The MPCA noted it is considering using the list in a 2008 DNR wild rice report to the Legislature (Natural Wild Rice in Minnesota-February 15, 2008) as a starting point for a list of waters that would be included in the rule. This inventory currently includes more than 1,200 waters. The DNR and tribal technical staff expressed an interest in reviewing the 2008 list. Ann Geisen said that DNR staff could use additional clarification and guidance on how to evaluate the list to suit MPCA’s needs. Other sources of information that will be reviewed for the list include citizen lake monitoring observations, tribal input including the 1854 Treaty Authority and county biological survey.

Advisory committee members had a brief discussion about list of waters that included the topics of how rivers would be listed (river as a whole or specific reaches), should there be a minimum size for a patch of wild rice to be included, should paddy rice fields be included in the list, and the importance of preserving wild rice for genetic diversity and wildlife. MPCA staff noted that river reaches would be listed. There was inadequate time left in the meeting to discuss considerations for criteria for adding waters that would not be included in the list.

Mark Tomasek noted that the MPCA will continue to meet with other groups about this issue and this topic will be included for discussion during the next advisory committee meeting.

Follow-up item: MPCA will provide the link for the 2008 DNR report on wild rice. The list can be found in Appendix B in the report, which is at the following link:

http://files.dnr.state.mn.us/fish_wildlife/wildlife/shallowlakes/natural-wild-rice-in-minnesota.pdf

Agenda Item 5: Next Steps

Shannon Lotthammer suggested and the committee agreed to the need for more time and further discussion on the “water used for production of wild rice” topic. Shannon Lotthammer suggested that the next Wild Rice Standards Study Advisory Committee meeting be set in the next eight weeks or so with “water used for the production of wild rice” as a primary topic. In addition to further discussion of a list of waters, discussion would also include consideration of criteria that could be used to determine “water used for production of wild rice” and to add additional waters to the list.