MPCA "Straw" Proposal for 2013

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Mid-Project Review

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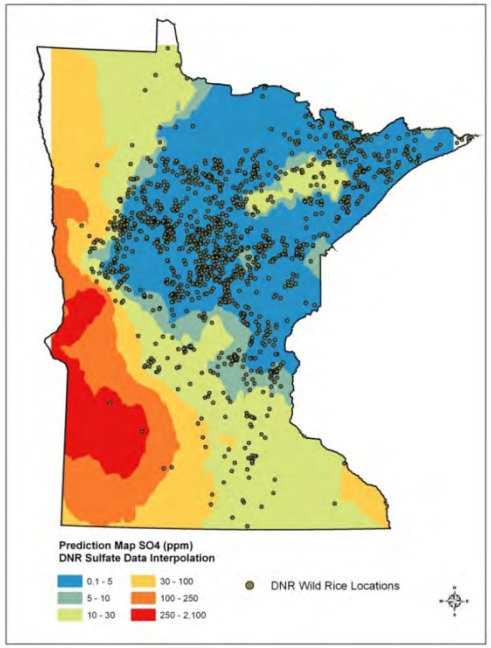

Minnesota Pollution Control Agency

CLEAN WATER LAND & LEGACY AMENDMENT

Note that this slide contains preliminary information, which the MPCA is using to guide the collection of additional study data. It is not appropriate to draw conclusions from the information prior to study completion.

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MPCA Straw Proposal for 2013

1) Complete the hydroponics experiments (John Pastor)

2) Additional field survey (Amy Myrbo)

3) Complete sediment incubation experiment (Nate Johnson)

4) Container mesocosms at the UMD research station (John Pastor)

5) Data compilation and review (MPCA staff)

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1. Complete the hydroponics experiments (John Pastor)

Priority order:

a. Sulfate: germination and post-germination tests.

Finalize methods, conduct dose-response experiments.

b. Sulfide: germination and post-germination tests.

Finalize methods, conduct dose-response experiments.

c. Sulfide: Seedling test.

Finalize method, conduct dose-response experiments.

Measure sulfide to study oxidation (Nate Johnson).

d. Sulfate: Seedling test.

Finalize method, conduct dose-response experiments.

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2. Additional field surveys (Amy Myrbo)

- Revisit some of the sites previously sampled in 2011 and/or 2012.
- Sample 5-10% of 2012 sites monthly from April through September.
- Option: Monitor subset with peepers (Nate Johnson)
- Add a few more high-sulfate sites as funding allows.

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3. Complete sediment incubation experiment (Nate Johnson)

- Complete the sediment incubation experiments conducted at two temperatures.
- Periodically measure sulfate, sulfide, oxygen, iron, total mercury, and methylmercury.
- Construct a simple model of sulfate diffusion and sulfide production.

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4. Container mesocosms at the UMD research station (John Pastor)

- Maintain the existing wild rice mesocosm experiment at the UMD research station.
- Continue the sulfate dosing of those mesocosms.
- Quantify wild rice response to treatments.
- Measure profiles of sulfate, sulfide, and iron in the sediment with peepers (Nate Johnson).

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5. Data compilation and review (MPCA staff)

- Add to, and finalize, study database.
- Continue to compile existing data available from other sources on sulfate and wild rice production waters in Minnesota.
- Analyze for key relationships between wild rice and water quality parameters (focusing on sulfate and related parameters, but including other parameters as time allows).

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