

Environment and Natural Resources Trust Fund 2009 Phase 2 Request for Proposals (RFP)

LCCMR ID: 078-C1

Project Title: Improved Management of Eurasian Watermilfoil and Curly-leaf Pondweed

Total Project Budget: \$ \$200,000

Proposed Project Time Period for the Funding Requested: Three years - July 2009 to July 2012

Other Non-State Funds: \$ \$0.00

Priority: C1. Aquatic and Terrestrial Invasive Species

First Name: Chip

Last Name: Welling

Sponsoring Organization: DNR

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Saint Paul MN 55155-4025

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Email: chip.welling@dnr.state.mn.us

Fax: 651-296-1811

Web Address: <http://www.dnr.state.mn.us/eco/invasives/index.html>

Region:

County Name:

City / Township:

Statewide

Summary: The proposed project will produce a framework to guide investments of time and resources on lakes with the greatest potential to manage Eurasian watermilfoil and curly-leaf pondweed.

Main Proposal: 1008-2-011-proposal-2009_main_proposal_ewmclp 01 Oct.doc

Project Budget: 1008-2-011-budget-RFP_2009_Project Budget ewmclp.xls

Qualifications: 1008-2-011-qualifications-Proj Mngr Qualif 2008 Sep 14 cw.doc

Map: 1008-2-011-maps-clpewmmap.doc

Letter of Resolution:

MAIN PROPOSAL

PROJECT TITLE: Improved management of Eurasian watermilfoil and curly-leaf pondweed

I. PROJECT STATEMENT

Eurasian watermilfoil and curly-leaf pondweed are invasive species that can become abundant and interfere with use of lakes and rivers. These plants also can displace native aquatic plants and alter environmental conditions. Nevertheless, invasion by milfoil or curly-leaf may have different effects in different lakes or during different years in the same lake. Also, the potential to contain or suppress Eurasian watermilfoil and curly-leaf pondweed may vary from lake to lake.

In the case of curly-leaf pondweed, it appears that the invasive plant may exacerbate water quality problems in some lakes. Consequently, there is much interest in the potential to improve water quality by suppression of curly-leaf pondweed.

The results of the project will improve the ability of managers to predict impacts to lakes by Eurasian watermilfoil and curly-leaf pondweed. This improved understanding of these two invasive plants will then be used to guide investments of time and resources on lakes with the greatest potential to suppress Eurasian watermilfoil or curly-leaf pondweed or both.

II. DESCRIPTION OF PROJECT RESULTS

Result 1: Predicting impacts to lakes by Eurasian watermilfoil and curly-leaf pondweed

Budget: \$ 125,000

Carefully planned sampling of Eurasian watermilfoil, curly-leaf pondweed, and environmental conditions in lakes across a gradient from high to low abundance of invasive species will help refine and improve our current understanding of where and when these plants cause problems for users of Minnesota's lakes. This work may include key experiments to refine our understanding of relationships between the abundance of the invasive plants and environmental conditions.

Deliverable

Completion Date

1. Analysis of the relationships between the abundance of Eurasian watermilfoil and environmental conditions.

1 March 2012

2. Analysis of the relationships between the abundance of curly-leaf pondweed and environmental conditions.

1 March 2012

Result 2: Guiding investments to improve management of Eurasian watermilfoil and curly-leaf pondweed

Budget: \$ 75,000

The information produced for Result 1 and other available information will be used to develop frameworks or models to support decisions regarding management of these invasive species. Specifically, the new frameworks will help: 1.) the DNR and others to screen or prioritize lakes, 2.) to guide investments of time and resources by lake associations and local units of government, and 3.) optimize grants from the DNR to lake associations, local units of government, and other grantees.

PROJECT TITLE: Improved management of Eurasian watermilfoil and curly-leaf pondweed

Deliverable	Completion Date
1. Framework to guide investments on lakes with the greatest potential to manage Eurasian watermilfoil.	30 June 2012
2. Framework to guide investments on lakes with the greatest potential to manage curly-leaf pondweed.	30 June 2012

III. PROJECT STRATEGY AND TIMELINE

A. Project Partners

Researchers at one or both of the institutions listed below may perform the research describe above under contract to the Minnesota Department of Natural Resources.

Fisheries, Wildlife and Conservation Biology
Raymond Newman
University of Minnesota
St. Paul, MN 55108

US Army Engineer Research and
Development Center
Aquatic Plant Control Research Program
Waterways Experiment Station
Vicksburg, MS 39180

B. Project Impact

The proposed project will produce frameworks or models to guide investments of time and resources on lakes where the problems are most severe and the potential to manage them is greatest. If Eurasian watermilfoil can be suppressed or contained in certain lakes, then appropriate efforts can be focused on those lakes. If aquatic habitats, especially water quality, can be restored by control of curly-leaf pondweed in certain lakes, then the results of this project would help focus and plan management on such lakes. With respect to both invasive species proposed for study, effective control will benefit lakes by restoration of valuable native aquatic plants.

C. Time

The proposed project will begin in July, 2009 and run through June 2012. From July 2009 until fieldwork begins in the spring of 2010, literature will be reviewed, available information will be inventoried, fieldwork planned, and staff hired. Fieldwork will be conducted during the open water seasons of 2010 and 2011. Analysis of data will be done during winter. Development of frameworks will be the focus of work from the 2011-2012 winter through the end of the project on 30 June 2012.

D. Long-term strategy

The proposed project will build on previous efforts of the DNR's Invasive Species Program to manage Eurasian watermilfoil and curly-leaf pondweed.

Project Budget

IV. TOTAL PROJECT REQUEST BUDGET

BUDGET ITEM (See list of Eligible & Non-Eligible Costs, p. 17)	AMOUNT	% FTE
Personnel: Who is getting paid to do what and what is the % of full-time employment for each position? List out by position.	\$ -	%
	\$ -	%
Contracts: With whom and for what? List out by item.	\$ -	
With the University of Minnesota or US Army Engineer Research and Development Center for predicting impacts to lakes by Eurasian watermilfoil and curly-leaf pondweed	\$ 125,000	
With the University of Minnesota or US Army Engineer Research and Development Center for development of frameworks to guide investments to improve management of Eurasian watermilfoil and curly-leaf pondweed	\$ 75,000	
Equipment/Tools: What? List general description of needs.	\$ -	
Acquisition (Including Easements): List # of acres and who will hold title (e.g., DNR, Non-profit)	\$ -	
Restoration: List # of acres.	\$ -	
Other: List by item and explain.	\$ -	
	\$ -	
TOTAL PROJECT BUDGET REQUEST TO LCCMR	\$ 200,000	

V. OTHER FUNDS

SOURCE OF FUNDS	AMOUNT	Status
Remaining \$ From Previous Trust Fund Appropriation (if applicable): How much Trust Fund money remains not spent or legally obligated from any previous Trust Fund appropriation for any directly related project of the proposing project, project manager, or project organization? Specify the appropriation.	\$ -	Unspent or Not Legally Obligated
Other Non-State \$ Being Leveraged During Project Period: What additional non-state cash \$ will be spent on the project during the funding period? For each individual sum, list out the source of the funds, the amount, and indicate whether the funds are secured or pending approval.	\$ -	Secured or Pending
Other State \$ Being Spent During Project Period: What additional state cash \$ (e.g. bonding, other grants) will be spent on the project during the funding period? For each individual sum, list out the source of the funds, the amount, and indicate whether the funds are secured or pending approval.	\$ -	Secured or Pending
In-kind Services During Project Period: What in-kind services will be provided during the funding period? List type of service(s) and estimated value. In-kind services listed should be specific to the project.	\$ -	
Past Spending: List money spent or to be spent on this specific project, cash and/or in-kind, for 2-year timeframe prior to July 1, 2009	\$ -	

PROJECT TITLE: Improved management of Eurasian watermilfoil and curly-leaf pondweed
Qualifications of the Project Manager: Charles (Chip) Welling

EDUCATION

- M.S. 1987** Iowa State University, Ames
Major: Botany (Ecology)
Thesis: Reestablishment of perennial emergent macrophytes during a drawdown in a lacustrine marsh.
- B.S. 1980** University of Alaska, Fairbanks
Major: Biology

PROFESSIONAL EXPERIENCE

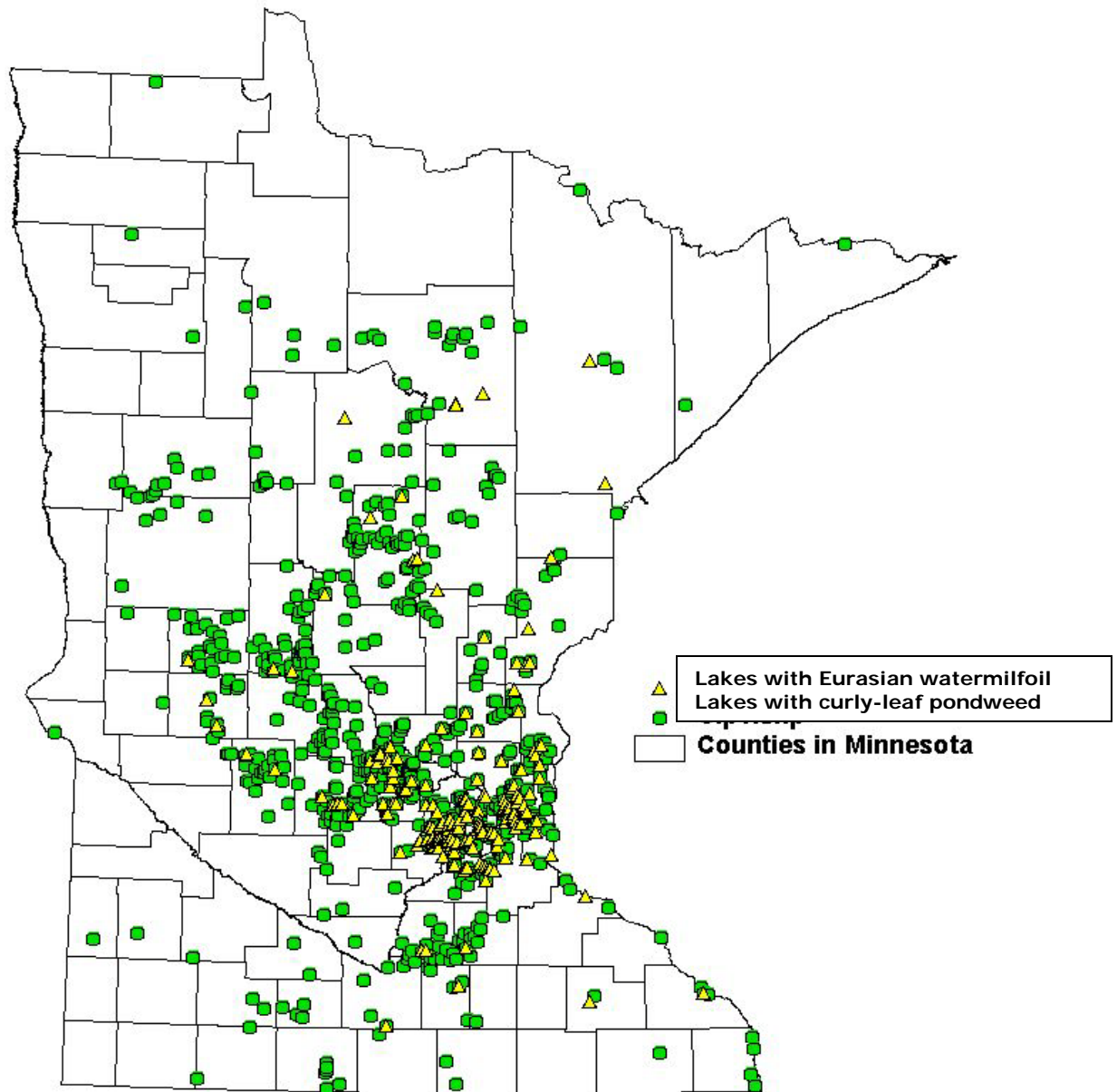
- Nov. 2000 - Present** **Coordinator - Eurasian Watermilfoil Program**, Minnesota Department of Natural Resources (DNR). Development and management of statewide program to control this exotic plant.
- Nov. 1998 - Nov. 2000** **Environmental Assessment Ecologist**, DNR: Evaluation of potential to improve management of Cumulative Effects of Development on Lakes.
- June 1993-Nov. 1998** **Coordinator - Eurasian Watermilfoil Program**, DNR
- Dec. 1992-May 1993** **Exotic Species Biologist**, DNR.

EXPERIENCE WITH MANAGEMENT OF LCMR PROJECTS – BICONTROL OF MILFOIL

Biennia (Citation of session law for projects)	
2002-2004	(M.L. 2001 - 1 st Special Session, Ch. 2, Sec. 14, subd. 04(d))
2000-2001	(M.L. 1999, Ch. 231, Sec. 16, Subd. 16(a))
1998-1999	(M.L. 1997, Ch. 216, Sec. 15, Subd. 20(b))
1996-1997	(M.L. 1995, Ch. 220, Sec. 19, Subd. 13 (a))
1994-1995	(M.L. 1993, Ch. 172, Sec. 14, Subd. 12 (1))
1992-1993	(M.L. 1992, Ch. 513, Art. 2, Sec. 9)

PUBLICATIONS

- Valley, R.D., W. Crowell, C. H. Welling, and N. Proulx. 2006. Effects of a low dose fluridone treatment on submersed aquatic vegetation in a eutrophic Minnesota lake dominated by Eurasian watermilfoil and coontail. *Journal of Aquatic Plant Management* 44:19-25.
- Crowell, W.J., N.A. Proulx, and C.H. Welling. 2006. Effects of repeated fluridone treatments over nine years to control Eurasian watermilfoil in a mesotrophic lake. *Journal of Aquatic Plant Management* 44:133-136.
- Madsen, J.D., H.A. Crosson, K.S. Hamel, M.A. Hilovsky, and C.H. Welling. 2000. Panel discussion. Management of Eurasian watermilfoil in the United States using native insects: State regulatory and management issues. *Journal of Aquatic Plant Management* 38:121-124.
- van der Valk, A.G., L. Squires, and C.H. Welling. 1994. Assessing the impacts of an increase in water level on wetland vegetation. *Ecological Applications* 4:525-534.
- Welling, C.H., and R.L. Becker. 1993. Reduction of purple loosestrife establishment in Minnesota wetlands. *Wildlife Society Bulletin* 21:56-64.
- Welling, C.H., and R.L. Becker. 1990. Seed bank dynamics of *Lythrum salicaria* L.: Implications for control of this species in North America. *Aquatic Botany* 38:303-309.
- Welling, C.H., R.L. Pederson, and A.G. van der Valk. 1988. Temporal patterns in recruitment from the seed bank during drawdowns in a prairie wetland. *Journal of Applied Ecology* 25:999-1007.
- Welling, C.H., R.L. Pederson, and A.G. van der Valk. 1988. Recruitment from the seed bank and the development of zonation of emergent vegetation during a drawdown in a prairie wetland. *Journal of Ecology* 76:483-496.
- Welling, C.H., and W.J.L. Sladen. 1979. Canvasback sex ratios on Rhode and West rivers, Chesapeake Bay, 1972-1978. *Journal of Wildlife Management* 43:811-813.



LCCMR 2009 Funding Priority: C.1. d. Containing or suppressing invasive species already present in Minnesota, including curly-leaf pondweed and Eurasian watermilfoil

Sponsoring Organization: Department of Natural Resources, Division of Ecological Resources