

***Invasive aquatic  
plants: Grants  
from the MnDNR  
for Management***

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**Minnesota DNR**

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**To: Representatives**

**from various lakes**

# ***Invasive aquatic plants: Grants from the MnDNR for Management***

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## **Topics to be addressed in this presentation**

- Aquatic plants and their value in lakes
- Problems caused by invasive aquatic plants
- Aggressive control soon after discovery of milfoil in Minnesota
- New developments in management of curly-leaf pondweed
- Lake-wide control of curly-leaf or milfoil or both
- E-mail and web survey of people about grant program
- Plans for 2009
- Your comments and feedback

# Mission of the MnDNR

- **Work with citizens to conserve and manage Minnesota's natural resources**
- **Provide opportunities for outdoor recreation**
- **Provide for commercial uses of natural resources to create a sustainable quality of life**

An underwater photograph showing a dense thicket of aquatic plants. The water is dark and murky, with sunlight filtering through from above, creating a dappled light effect. The plants have various leaf shapes and colors, including green, brown, and yellow. Some leaves are broad and rounded, while others are more elongated and feathery. The overall scene is a complex, tangled network of plant life.

# **Aquatic plants in public waters belong to all of us**

**(M.S. 84.091)**

**Aquatic plants provide  
habitat for fish**





**Aquatic plants provide  
habitat for wildlife**



**Aquatic plants  
prevent erosion**



**Aquatic plants  
protect water quality**

# Control of aquatic plants in Minnesota - *Balance*

- Reasonable needs of riparian owners to gain access to, and use, public water  
*[MR 6280.0250, Subp. 3]*
- Protection of aquatic plants for the benefits they provide to lake ecosystems



# Eurasian watermilfoil



# **Problems caused by invasive aquatic plants**

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- **Interfere with use of the lake**
- **Displace native plants**
- **Alter environmental conditions**

# **DNR's approach to management of invasive aquatic plants**

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- **To allow access and use**
- **More aggressive where it makes sense**
  - **Don't do more harm than good**
- **Based on science**
- **Collaborative**

# Development of the DNR's approach to management of Eurasian watermilfoil

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- *Aggressive control soon after discovery of milfoil in Minnesota*

## **Development of the DNR's approach to management of Eurasian watermilfoil**

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- **Where eradication seemed possible, aggressive control**
- **Find and treat all milfoil with 2,4-D**
- **Where eradication seemed unlikely, supported management of nuisances**

# **Development of the DNR's approach to management of Eurasian watermilfoil**

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- **Analysis of efficacy of treatments**
  - **Lakes – 31**
  - **Treatments - 56**
  - **Over four years - 1989 through 1993**

## **Development of the DNR's approach to management of Eurasian watermilfoil**

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- **Milfoil was not eradicated from any lake**
- **Milfoil was not prevented from spreading within any lake**
- **Milfoil was temporarily reduced**

# Curly-leaf pondweed

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New developments in  
management

# New developments in management of curly-leaf pondweed



Photo – Frank Koshere, Wisconsin Department of Natural Resources



- **New developments in management of curly-leaf pondweed**

- **In MN since early 1900s**

- **Present in more than 750 MN lakes**

FALL

WINTER

SPRING

SUMMER

FALL

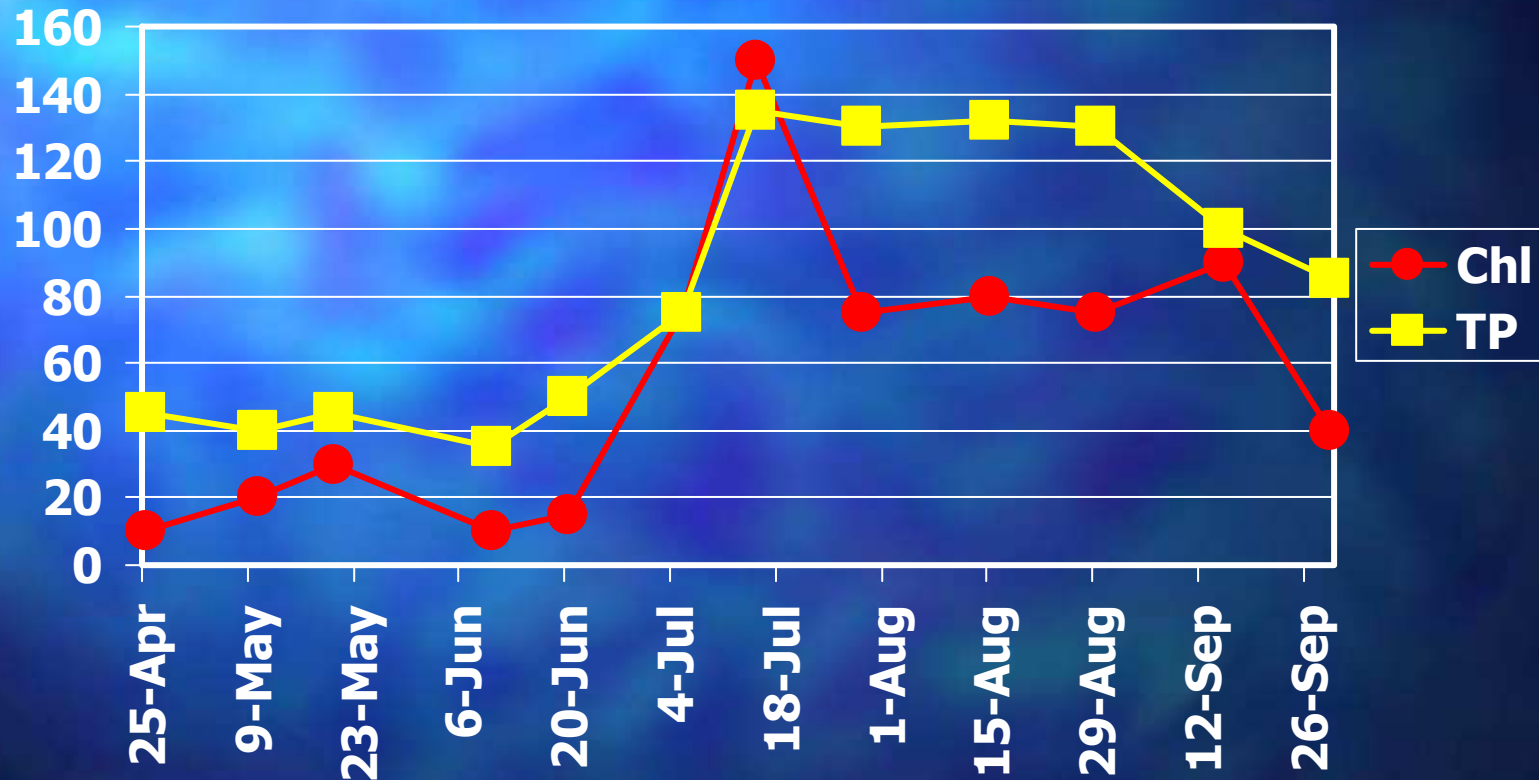
ICE



# New developments in management of curly-leaf pondweed

## Half Moon Lake, WI – 1999

Source: *James et al. 2002. Lake and Reservoir Management 18:149-163.*



# **New developments in management of curly-leaf pondweed**

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## **Goals**

- **Long-lasting control**
- **Increase natives**
- **Improve water quality**

# New developments in management of curly-leaf pondweed

Research by the: *U.S. Army Engineer Research and Development Center*

Outdoors: 7000 L tanks >>>

*Aquatic Ecosystem Research Facility*

*Lewisville, TX*



<<< Greenhouse: 50 L aquaria in  
1,200 L fiberglass tanks

*Aquatic Ecosystem Research Facility*

*Lewisville, TX*



# New developments in management of curly-leaf pondweed

Research by the: *U.S. Army Engineer Research and Development Center*



**Blackhawk Lake**  
**Schwanz Lake**

Water Temp.  $\approx 15^{\circ}\text{C}$  (55°F)

## Dates of Treatments

- 1 May 2001
- 28 April 2000
- 2 May 2002
- 24 April 2003
- 15 April 2004



## **New developments in management of curly-leaf pondweed**

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- **Can reduce amount of control necessary for at least a few years, maybe more**
- **Can increase natives**
- **May or may not improve water quality**

# **Grants from the DNR for management of invasive aquatic plants**

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# **Grants from the DNR for management of Eurasian watermilfoil**

- Focus on spot-control of matted milfoil that creates an unavoidable nuisance**
- Early Detection – Rapid Response**

# **Grants from the MnDNR – Spot-control of nuisances caused by milfoil**

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## **Requirements**

- **Lake must have Public Water Access**
- **Dense and matted at surface**
- **Developed shoreline**
- **Off-shore**

# **Grants from the MnDNR – Spot-control of nuisances caused by milfoil**

## **Requirements – new in 2008**

- **Plan to improve water quality**
- **Plan to reduce need for additional treatment**
- **No grants for likely endocrine disruptors – may use triclopyr**

## Grants from the MnDNR – Spot-control of nuisances caused by milfoil

Year	Eligible Lakes	Applic.	Apprvd Projects	Grants
2006	126	27	23	\$80,000
2007	135	30	28	\$120,000
2008	141	27	21	\$105,000

# **Early Detection and Rapid Response – Eurasian watermilfoil**

- **Newly discovered in lake**
- **Limited distribution in the lake**
- **Limited abundance in the lake**
- **Limited number of lakes**
  - **five to seven?**

# **Grants from the MnDNR**

**Pilot projects for lake-wide or bay-wide control of curly-leaf or milfoil or both**

## **Grant – Pilot projects for lake-wide control of curly-leaf or milfoil or both**

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- **Long-lasting reductions in invasive plants**
  - **Increase native plants**
  - **In lakes with abundant curly-leaf, increase water clarity**
  - **Reduce nuisances for users**

## **Grant – Pilot projects for lake-wide control of curly-leaf or milfoil or both**

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### **Requirements – for application**

- **Assessment by the lake association or other group**
- **Pre-treatment survey of the vegetation in the lake**
- **Curly-leaf pondweed or milfoil is dominant**

## **Grant – Pilot projects for lake-wide control of curly-leaf or milfoil or both**

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### **Requirements – approved projects**

- **Lake Management Plan**
  
- **Monitoring**
  - **Surveys of the vegetation in the lake**
  - **Water quality – Secchi disk**

## **Grant – Pilot projects for lake-wide control of curly-leaf or milfoil or both**

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Lake must have Public Water Access

Previously funded projects

Cannot be a “Natural Environment” lake

## **Grant – Pilot projects for lake-wide control of curly-leaf or milfoil or both**

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Cooperators must agree to:

Follow DNR guidelines for treatment

Monitor water clarity for at least two years following treatment

Minimal treatment of native vegetation for access

## **Grant – Pilot projects for lake-wide control of curly-leaf or milfoil or both**

### **Requirements – new in 2008**

- **Plan to improve water quality**
- **Plan to reduce need for additional treatment**
- **No grants for likely endocrine disruptors – may use triclopyr**

## **Grant – Pilot projects for lake-wide control of curly-leaf or milfoil or both**

<b>Year</b>	<b>Applic. rcvd</b>	<b>Apprvd Projects</b>	<b>Grants</b>
<b>2006</b>	<b>41</b>	<b>7</b>	<b>\$115,000</b>
<b>2007</b>	<b>38</b>	<b>12</b>	<b>\$200,000</b>
<b>2008</b>	<b>46</b>	<b>14</b>	<b>\$230,000</b>

# Grant – Pilot projects for lake-wide control of curly-leaf or milfoil or both in 2008

Lake	Litt. acres	Total cost	DNR grant	DNR %
Julia	135	\$4,000	\$4,000	100
Medicine	400	\$40,000	\$20,000	50
Kohlmans	74	\$38,000	\$10,000	26
Grays	127	\$56,000	\$8,000	14

# Lake-wide Treatment Results so far

## Curly-leaf pondweed frequency

- Declined in the year of treatment
- Declined in the year following two years of treatment

Turion density declined in some cases



# Lake-wide Treatment Results so far

## Native aquatic plant frequency

- Increased in three of seven lakes
- Remained the same in three lakes
- Declined in one lake



# Lake-wide Treatment

## Results so far

### Water Clarity (Secchi depth)

- Increased in two lakes
- Did not change in five lakes



# **E-mail and web survey of people about grant program**

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# E-mail survey of people about grant program

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- 53 responses
- 6 milfoil treatment grant applicants
- 23 lake-wide treatment grant applicants
- 7 applied for milfoil and curly-leaf pondweed control
- 17 did not apply for either grant program

# Lake-wide treatment grant applicants

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- 30 total, 8 offered a grant
- 25 found the grant materials easy to understand and fill out
- 23 respondents offered changes to help improve the grant process
- 28 planning to apply in 2008

# Milfoil treatment grant applicants

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- 13 total, 9 offered a grant
- 4 found the restriction on use of 2,4-d problematic
- 10 found the grant materials easy to understand and fill out
- 9 offered changes to help improve the grant process
- 12 planning to apply in 2008

# Applied to Neither

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- 17 applied to neither program
- 8 started the grant process
- 1 found the restriction on use of 2,4-d problematic
- 8 found the grant materials easy to understand and fill out
- 6 offered changes to help improve the grant process
- 6 planning to apply in 2008

# Grants from the MnDNR – control of milfoil

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## *New for 2009*

- **Increased funding for grants**
- **EDRR for a limited number of lakes**
- **More support from new Invasive Species Specialists**

# **Grant – Pilot projects for lake-wide control of curly-leaf or milfoil or both**

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## ***New for 2009***

- **Increased funding for grants**
- **Commitment to continue funding current projects ( $\leq$  5 years)**
- **More lakes will receive grants**
- **More support from new Invasive Species Specialists**

# Materials for 2009

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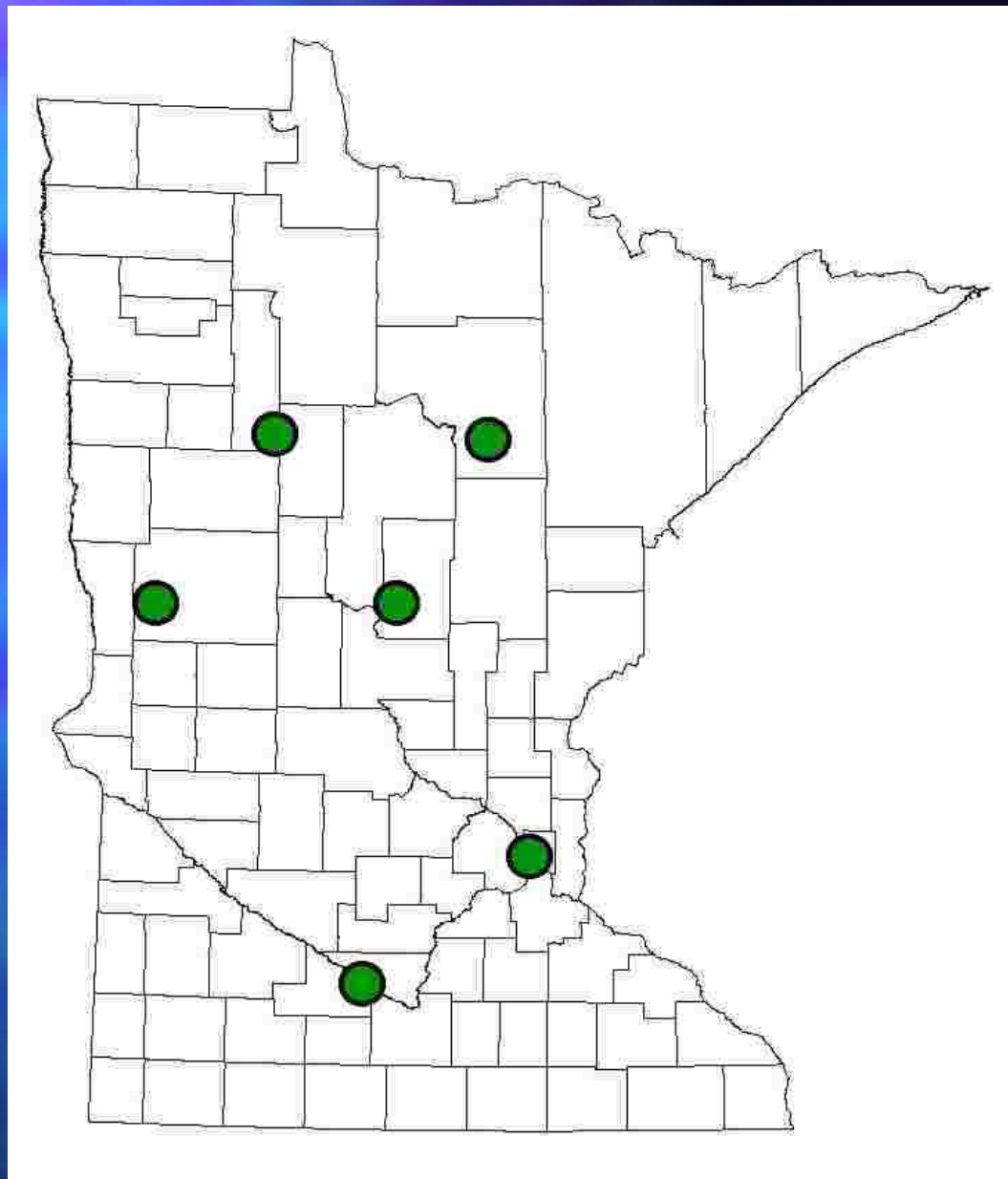
- **Lake-wide**
  - **Post – 1 December 2008**
  - **Prelim. Proposal – 12 January 2009**
  - **Full proposal – 30 January 2009**
  
- **Nuisances caused by milfoil and EDRR for milfoil**
  - **Post – 15 April 2009**
  - **First deadline – late May 2009**

# Resources available from the DNR

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- **Technical Assistance**
- **Field support**
- **Grants**

# Locations of Invasive Species Specialists





# The End

■ **Email:** [Chip.welling@dnr.state.mn.us](mailto:Chip.welling@dnr.state.mn.us)

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