

# DNR Lake Vegetation Management Plan

Lake Sarah, Hennepin County (DOW# 27019100)

<input checked="" type="checkbox"/> Final LVMP with Signatures	
<b>Date Signed:</b>	<b>3/27/2018</b>
<b>Expiration Date:</b>	<b>3/27/2023</b>
<b>Management Targets(s):</b>	Curly-leaf pondweed (CLP)
<b>Summary:</b>	<i>This Lake Vegetation Management Plan (LVMP) authorizes a 5-year variance from time of signing to treat greater than 15% of the littoral area of Lake Sarah (DOW# 27019100) to control curly-leaf pondweed using herbicides. Individual (near-shore) APM permits for submerged plants will be subject to a 2,500 square foot maximum standard and a 15 foot channel to open water. Justification for this variance include the potential for this project to further research on the control of invasive aquatic plants in conjunction with an alum treatment. Annual monitoring and submission of data to the MnDNR is required in this LVMP.</i>
<b>Cooperator(s):</b>	1) Pioneer Sarah Creek Watershed Commission (PSCWMC) 2) Three Rivers Park District (TRPD) 3) Lake Sarah Improvement Association (LSIA)

## **SECTION 1: PROBLEM IDENTIFICATION**

**TARGET SPECIES:** Curly-leaf pondweed (CLP)

1. CLP displaces native aquatic plants and reduces native plant diversity
2. CLP interferes with recreational use of lake
3. CLP contributes to reductions in water quality through early plant senescence and early algal blooms

## **SECTION 2: PLANT MANAGEMENT GOALS & MEASURABLE OBJECTIVES**

- 1. Increase native plant abundance and diversity**
  - a. Native plant frequency and species richness shall be maintained or increase (*\*July point-intercept survey*)
  - b. Native plant Subsequent treatment of native plants for access shall be limited
- 2. Control CLP to reduce interference with recreational lake use**
  - a. Reduction in frequency of occurrence of CLP (*\*spring delineation survey*)
- 3. Maintain or increase water clarity**
  - a. Secchi depth shall be maintained or increase (*\*May-September Secchi depth average*)

*(\* - indicates a measurable outcomes)*

## **SECTION 3: PROPOSED MANAGEMENT ACTIONS**

*Note: The treatment protocols detailed below may change as new information becomes available but must be approved by the MnDNR. Any changes will be added to the LVMP as an amendment and may affect future APM permits.*

**Proposed Actions:** Selective herbicide treatments targeting CLP at or beyond the 15% littoral limit. The CLP treatment shall occur in the early spring (water temperatures; 50-60 °F) when the plant is actively growing and native plants are still dormant so as to minimize non-target effects. Water temperatures will be monitored by LSIA volunteers to ensure applications are made in the recommended temperature range. Treatment applications will be performed by LSIA trained volunteers. The CLP treatment areas will be delineated using MNDNR guidelines for delineations by a third party surveyor. The effect of the treatment on the native plant community will be assessed by a third party surveyor with a point intercept survey in mid-summer.

## **SECTION 4: VARIANCE & PERMIT CONDITIONS (*check all that apply*)**

*The commissioner may issue APM permits (and IAPM permits) with a variance from one or more of the provisions of parts 6280.0250, subpart 4, and 6280.0350. Variances may be issued to control invasive aquatic plants, protect or improve aquatic resources, provide riparian access, or enhance recreational use on public waters (6280.1000, subpart 1).*

- Applications of pesticides to control curly-leaf pondweed in more than 15 percent of the littoral area (M.R. 6280.0350, Subp. 4, A).**

Selective chemical control of CLP with applications of DNR approved herbicide to delineated areas.

**Variance Justification:**

A variance would serve as a continuation of the 2013-2018 LVMP and may provide recreational and ecological benefits by (1) minimizing recreational impairment by CLP and (2) promoting the survival, growth, and spread of native submersed aquatic plants. Whole lake treatments have occurred over the last five years with good success as CLP abundance has decreased and the native plant community has increased in species and abundance. While whole lake treatments will continue in the near term, the goal is to reduce CLP to a level where only spot treatments are needed. Spot treatments may or may not exceed the 15% littoral area.

The Lake Sarah TMDL Implementation Plan as well as the positive results Three Rivers Park District is seeing in long-term CLP reduction (Lake Rebecca & Hyland Lake) constitutes the need for further research and evaluation of whole-lake CLP management. This LVMP facilitates this research, is expected to increase native plant abundance and diversity, as well as provide for improved recreational access for all users of Lake Sarah.

- Individual Near-Shore Permit Standards (*near-shore permit standards*)**

*Chemical Treatment of Submersed Plants: Limited to an area no greater than 2,500 square feet; such as a 50 feet wide along shore (or half of lake frontage, whichever is less) x 50 feet lakeward of individual properties and a 15 foot channel to open water.* No removal of sparse native vegetation will be permitted. All native plant restoration activities requires an APM permit. Permit requests are subject to inspection and the aforementioned limits are maximums allowed for native species control.

- Variance approved with monitoring conditions (*refer to Section 5 below*).**

**SECTION 5: REQUIRED ANNUAL MONITORING (*refer to Table 1 below*)**

- Pre-treatment plant monitoring**

Pre-treatment CLP delineations will be provided annually to the DNR with permit application to track CLP reductions.

**Post-treatment plant monitoring**

Post-treatment point-intercept plant survey conducted during peak growth of native vegetation (mid-summer) will be provided annually to the DNR.

**Water quality monitoring**

Water quality data must also be collected from May-Sept and provided annually to the DNR.

**DNR data report**

Post treatment report will be provided annually by 31 December of each year to the DNR Invasive Species Specialist. Data will be provided to DNR using their data reporting template. Failure to report results may results in no variance or permit the next year.

**Annual evaluation meeting**

The DNR, in conjunction with other interested parties, will review the plant survey(s) and water quality results annually. If results are not meeting goals or producing negative results, then the approach to control may be revised at the discretion of the DNR.

<b>Table 1. Required monitoring activities for Lake Sarah Vegetation Management Plan</b>		
<b>Monitoring Activity *</b>	<b>Timing</b>	<b>Monitored/Submitted By</b>
Pre-treatment Delineation (CLP)	Early Spring (April or May)	LSIA, TRPD or approved contractor
Pesticide Application Report (PAR)	Immediately following herbicide application	Herbicide applicator
Post-treatment Point-Intercept	Mid-Summer (July-September)	TRPD or approved contractor
Water Quality Monitoring ( <i>Secchi, TP, Chl-a</i> )	Twice Monthly (May-September)	LSIA, TRPD or approved contractor
DNR Data Report	December 31 <sup>st</sup> annually	LSIA or approved contractor

## **SECTION 6: ALTERNATIVE METHODS CONSIDERED (NPDES)**

*This section is needed to meet the requirements of MNG87D000 Vegetative Pests and Algae Control Pesticide General Permit; issued by the Minnesota Pollution Control Agency to meet requirements of the National Pollution Discharge Elimination System.*

**Target Pest:** Curly-leaf pondweed (CLP)

**No Action:** “No action” would likely allow the current widespread, dense CLP to persist or increase in the lake. Consequently, recreational impairment would not be reduced and CLP may continue to displace native plants.

**Prevention:** The MN DNR has an AIS Prevention program to stop the spread of invasive species. This includes designating infested waters, posting signage, enforcing AIS laws, inspecting and educating boaters at water accesses, and decontaminating water equipment as needed.

**Mechanical/Physical Methods:** Hand pulling of submersed vegetation is a control option which is labor intensive and typically done in shallow water. Mechanical harvesting is another control option although the cost is significant. These methods are considered to be infeasible due to high cost and considerable investment of time.

**Cultural Methods:** These are manipulations of the habitat to increase pest mortality by making the habitat less suitable to the pest (e.g. dredging to make a lake too deep for invasive aquatic plants to survive). Generally, such approaches are infeasible due to high cost.

**Biological Control Agents:** At present, there are no proven and acceptable biocontrol agents for CLP.

**SECTION 7: SIGNATURES**

*This Lake Vegetation Management Plan is in effect for 5 years from date of Regional Fisheries approval. If the plan is not renewed, then permits will be issued according to the standards listed in MR6280.*

DNR Approval:

Submitted By: Keegan Lund

Title: Invasive Species Specialist

Date: 3/27/2018



Regional Fisheries Manager

3-30-18

Date



Regional Ecological & Water Resources Manager

4-6-18

Date

I affirm that I am a representative of **Lake Sarah, Hennepin County** and acknowledge participation in the development or implementation of this lake vegetation management plan.

\_\_\_\_\_  
Cooperator's Signature and Title

\_\_\_\_\_  
Date

\_\_\_\_\_  
Cooperator's Signature and Title

\_\_\_\_\_  
Date

*Either party may terminate participation in this plan at any time, with or without cause, upon 30 days' written notice to the other party. If participation is terminated, permits will be issued according to standards listed MR6280.*

No language following this page supersedes the conditions in permits described above.