

## DNR Lake Vegetation Management Plan

The treatment protocols or management goals may change as new information becomes available and will be approved by the MnDNR. This variance does not preclude the requirements of applying for, and obtaining aquatic vegetation control permits (IAPM permits) as per Minnesota Rule chapter 6280. Refer to Lake Cooperator Data Summary for historic lake plant data, management history and water quality data.

<b>Medicine Lake, Hennepin County (DOW# 27010400)</b>	
<b>Date Signed: 4/10/2022</b>	<b>Expiration Date: 12/31/2027</b>
<b>Management Targets(s):</b>	Curly-leaf pondweed (CLP)
<b>Variance Conditions:</b>	<i>This Lake Vegetation Management Plan (LVMP) requests a <b>5-year variance</b> to perform herbicide treatments greater than 15% of the littoral area with herbicides to control CLP.</i>
<b>Problem Identification:</b>	1. CLP currently exists at 70% Frequency of Occurrence (hereafter FOO)
<b>Management Goals:</b>	<ol style="list-style-type: none"> <li>1. Maintain CLP below 25% FOO annually</li> <li>2. Maintain native submersed species richness to <math>\geq 12</math> species</li> <li>3. Reduce turion density based off 2022 sampling</li> </ol>
<b>Proposed Actions:</b>	1. Treat CLP at lakewide levels greater than the 15% allowable littoral area with a selective herbicide when pre-treatment FOO $\geq 40\%$ . 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.
<b>Required Monitoring</b> (see table below for survey timing)	<ol style="list-style-type: none"> <li>1. Spring delineation and point-intercept survey(s) to measure reductions in CLP FOO (pre and post) and native plant community FOO</li> <li>2. Late season point-intercept survey to track native plant community</li> <li>3. Turion sampling to show CLP reductions over time</li> </ol>

<p><b>Justification &amp; History</b></p>	<p>Historically, nuisance curly-leaf pondweed has been observed in Medicine Lake with frequencies of occurrence as high as 90% in the early 2000’s. Medicine Lake was a part of the original DNR pilot project program and was one of the first lakes in Minnesota to receive a variance to control curly-leaf pondweed on a lakewide level. The lake received whole lake herbicide treatments from 2004-2006 and has since been treated periodically thru spot treatments from 2007-2021.</p> <p>In the last few years, CLP growth has increased substantially (~70% frequency of occurrence) and spot treatments appear to be insufficient at maintaining the CLP population at reasonable levels. CLP point-intercept surveys indicate that for years with pre-treatment Frequency of Occurrence &gt; 40% that it is difficult to control CLP within the allowed 15% of the littoral acreage. There is concern that CLP growth will return to pre-whole lake management conditions.</p> <p>This variance is justified due to the growing lakewide problem of CLP and provides maximum flexibility to treat at &gt; 15% during years when there is excessive early season growth of CLP (&gt; 40% FOO). These efforts also serve as part of a larger water quality improvement to meet MPCA state standards. This project has sufficient partners and monitoring capacity to successfully achieve these goals.</p>
<p><b>Cooperator(s):</b></p>	<ol style="list-style-type: none"> <li>1. Bassett Creek Watershed Management Commission</li> <li>2. Three Rivers Park District</li> <li>3. City of Plymouth</li> <li>4. Association of Medicine Lake Area Citizens - AMLAC</li> </ol>

**REQUIRED ANNUAL MONITORING & REPORTING**

*Failure to complete all required monitoring and reporting may result in no variance or permit the following year. Data will be provided to DNR Invasive Species Specialist using their data reporting template.*

Required Monitoring	Timing	Monitored/Submitted By
Pre-treatment Delineation	Spring (April-May)	TRPD

Point-Intercept Survey(s)	Early and Late Summer (June & September)	TRPD
Turion Density Sampling	Annually	TRPD
Final Data Report (PI Data)	Annually	TRPD

**DNR Evaluation:**

*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. Notes to be filled out by the DNR annually are documented below.*

<b>YEAR</b>	<b>CLP % FOO</b>	<b>Turion # /meter<sup>2</sup></b>	<b>Native % FOO</b>	<b>Comments</b>
2016	<b>22</b>		<b>37</b>	<b>No Herbicide Treatment in 2016</b>
2017	<b>45</b>		<b>59</b>	<b>No Herbicide Treatment in 2017</b>
2018	<b>14</b>		<b>76</b>	<b>63 Acres Treated in 2018</b>
2019	<b>49</b>		<b>77</b>	<b>50 Acres Treated in 2019</b>
2020	<b>65</b>		<b>72</b>	<b>49 Acres Treated in 2020</b>
2021	<b>69</b>		<b>78</b>	<b>63 Acres Treated in 2021</b>
2022				
2023				
2024				

2025				
2026				
2027				

