# Lake Vegetation Management Plan

☐ **Variance Requested by Cooperator**
☐ **Variance Approved (see Section VI)**

**Section I: Lake Information**
Name Nichols Lake DOW Number 69062700 County St. Louis
Fisheries Area Duluth Surface Acres 417 Littoral Acres 362
Classification: ☐ Natural Environment ☒ Recreational Development ☐ General Development
Cooperator(s): Nichols Lake Association and MN DNR

**Section II: Water Quality and Plant Community**

A. Water Quality

☒ Total Phosphorus 0.017 ppm, 1 obs. (data from DNR Fisheries) Date 7/25/1990
☒ Secchi Disc 7.5 ft, 1 obs. (data from DNR Fisheries) Date 7/25/1990
☒ chlorophyll 'a' 10.4 ppb, 1 obs. (data from DNR Fisheries) Date 7/25/1990

Narrative (describe water quality concerns, quantify TSI) Carlson trophic state index values calculated from the collected data ranged from 45.0 - 53.6 with a mean of 48.9. This value classifies Nichols Lake as mesotrophic. The Carlson trophic state index was developed for use with lakes that have few rooted aquatic plants and little non-algal turbidity. Use of the index with lakes that have these characteristics should be done cautiously. This data is also based on one observation per category taken over 15 years ago.

The lake association will seek speakers to inform lakeshore owners on riparian importance and maintaining a good sewer system. They will also encourage residents to have their septic systems tested.

B. Plant Community

Narrative (describe plant community, list common, rare, or other important aquatic plant species, list plant surveys) Nichols Lake is a 417 acre lake, with 87% littoral area, and located approximately 18 miles northwest of Duluth, MN off of Highway 53. It has a maximum depth of 31 feet. Nichols Lake has abundant aquatic vegetation, moderate development, and one public access. Lake residents consider the abundance of aquatic vegetation a current problem although the 1951 investigation also noted abundant aquatic plants. Even with lush vegetation, the lake has not yet had a winter fish kill. The following is a list of plants found during the last full survey conducted by MN DNR Duluth Area Fisheries Office in 1999.

Emergent: Water Arum, Sedges, Spikerush Group, Swamp Horsetail, Blue Flag Iris, Swamp Fivefinger, Bulrush, Arrowhead, St. John's wort, Water Horehound, Burreed, Stiff Wapato, Common Cattai, Pickerelweed

Floating Leaf: Common White Waterlily, Common Yellow Waterlily

Submergent: Bladderwort Group, Muskgrass Group, Coontail, Canada Waterweed, Water Marigold, Water Milfoil, Stonewort Group, Bushy Pondweed, Large-Leaf Pondweed, Clasping-Leaf Pondweed, Narrow-Leaf Pondweed Group, Robbins' Pondweed, Flat-Stem Pondweed, Water Celery

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**<u>Section III</u>: Public Input Process** (narrative)

This plan was reviewed at a Caribou Lake Association meeting, Insert Date. It was made available to both association members and non-members for comment. In addition, the Duluth Area Fisheries office solicitated comments from the general public through a news release and website posting. The comment period lasted 14 days. Comments were reviewed and taken into consideration for the final draft that was sent out for approval by lake residents. Endorsement of this plan required 50% plus one signatures from lakeshore property owners (non-voters count as a no vote). This plan received Insert Approval %. The Lake Association has an internal process that allows for a review of this document.

**<u>Section IV</u>: Problems to be Addressed in this Plan** (narrative)

The Nichols Lake Association has been cutting aquatic vegetation in the commons area since 1983 (earliest APM application on file) to enhance recreational value. The lake receives a high volume of recreational users. The high amount of aquatic plants inhibits some of these activities. The dense aquatic vegetation makes it difficult to run outboard motors because of plant material getting tangled in the prop.

**<u>Section V</u>: Goals for Management of Aquatic Plants** (narrative, include a description of efforts to protect rare features)

1. Short Term – Temporary reduction of aquatic vegetation in high use commons areas will be achieved through mechanical harvest. This plan will establish aquatic plant cut zones and can be referenced when applying for the annual APM permit. Acceptance of this plan would allow the lake association to forgo annual collection of signatures for the permit until this plan expires or is terminated.
2. Long Term – Reduction of nutrient inputs from lakeshore owners.

**<u>Section VI</u>: Operational Treatment Plan** (map marked with areas where control of plants is anticipated)

A. Commons Area (>150' from shore)

☒ Mechanical Control: to be determined acres to be treated, % of littoral area

Narrative: Aquatic vegetation cutting zones were determined through a joint effort between the area APM specialist and lake association representatives, and approved by a majority of shoreline owners. This zone abides by all APM rules.

1. Use of chemicals is NOT permitted.
2. No cutting of emergent vegetation or floating leaf vegetation (even if it occurs in the cut zone)
3. No cutting permitted within 25 ft of emergent or floating leaf vegetation (even if it occurs in the cut zone)
4. The zone is located at least 150' from the shoreline.
5. All cut vegetation must be removed and disposed of above the ordinary high water mark.

Mechanical harvest of aquatic vegetation will only be done with the harvester owned by the Caribou Lake Association. If a different harvester is going to be used, prior inspection and approval by Duluth Area Fisheries must be obtained.

☐ Herbicide Control: acres to be treated, % of littoral area

Product(s)

Rate of Application

Timing of Application
Narrative:

☐ Other: acres to be treated, % of littoral area
Narrative:

B. Individual Permit Standards (new permits)
Chemical Treatment of Submerged Vegetation: 50 feet along shore 50 feet lakeward
Narrative: An individual APM permit IS required for any chemical treatment of aquatic plants. Residents applying for a permit for the first time or modifying treatment areas are required to have a site inspection by the area APM specialist. The maximum amount allowed is 50 feet or 1/2 the total length of the owners shoreline, whichever is less, and the treatment area does not exceed 2,500 square feet in area. An APM permit is NOT required if cutting or pulling submerged vegetation does not exceed 50 feet or 1/2 the total length of the owners shorelined, whichever is less, and that does not exceed 2,500 square feet in area.
Mechanical Treatment of Emergent Vegetation: feet along shore to open water
Narrative: An APM permit IS required for any treatment of emergent vegetation. Treatment of emergent vegeation is limited to a 15 foot wide channel to open water and must be located in the same spot from year to year. An APM permit is NOT required for mechanical treatment of floating leaf or submerged vegetation in the 15 foot wide channel as long as it does not move in location from year to year. The following conditions apply:
1. Harvesting can be done by hand, rakes, or similar equipment that does not significantly alter the lake bottom. Draglines, bulldozers, hydraulic jets, suction dredges, automated untended aquatic plant control devices, or bedsprings may not be used.

2. Cutting or pulling takes place in the same location each year unless an APM permit has been obtained authorizing a change in location.
3. Plants that have been cut or pull must be disposed of above the high water mark.
Other Treatment - : feet along shore feet lakeward
Narrative: Contact your local APM specialist to determine if the method is allowed and if an APM permit is required

**Section VII**: **Funding** [check all that apply]
☒ Lake Association
☐ DNR Grant
☐ Lake Improvement District (LID)
☐ Conservation District
Narrative: The Nichols Lake Association owns an aquatic plant harvester. They also provide the funding to operate it during the summer. If a different harvester is going to be used, prior inspection and approval by Duluth Area Fisheries must be obtained.

**Section VIII: Variance(s) and Justification(s)** [check all that apply]

☐ Application of pesticides to control submerged vegetation along more than 100 feet of shoreline per site belonging to an individual riparian property owner (M.R. 6280.0350, Subpart

4, A), (list justification below) [Example justification: To maximize the control of curly-leaf pondweed by treating as large a contiguous area as possible to minimize dilution of herbicide.]

☐ Application of pesticides to control dense growths of aquatic macrophytes that do not interfere with watercraft use, swimming, or other traditional recreational uses (M.R. 6280.0250, Subpart 2, A, (2)) [Includes the prohibition on application of pesticides to improve the appearance of undeveloped shoreline (M.R. 6280.0250, Subp. 4, B)].

☐ Application of pesticides to control submerged vegetation in more than 15 percent of the littoral area (M.R. 6280.0350, Subp. 4, A). (list justification below)

☐ Application of pesticides to control aquatic macrophytes in natural environment lakes established pursuant to part 6120.3000 (M.R. 6280.0250, Subp. 4, E.). (list justification below)

☐ Mechanical control of aquatic macrophytes in more than 50 percent of the littoral area (M.R. 6280.0350, Subp. 3, B). (list justification below)

Justifications (identify which variance and provide the rational for all items checked above):
No variances are requested.

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☐ **Variance approved without condition(s)**

☐ **Variance approved with following conditions(s):**

☐ **Pretreatment data collection**

**Narrative:**

☐ **Post treatment data collection**
**Narrative:**

☐ **Evaluation**
**Narrative:**

☐ **Other:**
**Narrative:**

# Lake Vegetation Management Plan

**<u>Section IX</u>: Signatures**

This Lake Vegetation Management Plan is in effect for 5 years from date of Regional Fisheries approval.

DNR Approval

Submitted By: _____

Title:_____

Date:_____

| | |
|---|---|
| _____ | _____ |
| Area Fisheries Supervisor | Date |
| _____ | _____ |
| Regional Fisheries Approval | Date |
| _____ | _____ |
| Regional Ecological Services Approval | Date |

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I affirm that I am an authorized representative of Nichols Lake Association and acknowledge our participation in the development and implementation of this lake vegetation management plan.

| | |
|---|---|
| _____ | _____ |
| 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.