



MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

Water Resources Division

Aquatic Nuisance Control Program

LAKE MANAGEMENT PLAN FORM

Pursuant to Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), and Part 33, Aquatic Nuisance Control, of the NREPA, and the administrative Rules promulgated thereunder, a lake management plan is required as part of the permit application for a whole-lake chemical treatment to the waters described below for the control of nuisance aquatic vegetation.

Waterbody Name _____ County(ies) _____

Town(s) _____ Range(s) _____

Latitude _____ Longitude _____ Section(s) _____

Title of Management Activity _____

I. Physical Characteristics of the Waterbody

Lake Size (Acres) _____

Maximum Depth (Feet) _____ Mean Depth (Feet) _____

Lake Volume (Acre-Feet) – Include volume calculations as an attachment

Whole Lake = _____ Based On 0-10 Feet Depth = _____

Size Of Littoral Zone (Acres) _____ Shoreline Length (Feet) _____

Shoreline Development Factor _____ Retention Time (Days) _____

Outlet Flow Rate (CFS) Source _____

- ☐ Location Map – include a map showing the location of the waterbody within the county(ies).
- ☐ Bathymetric Map – include a map of the waterbody indicating the depth contours at 5-foot intervals. The following attributes must be identified on the map tributaries, outlets, inlets, public and private access sites, public land, critical fish spawning areas, wetlands, special habitats, parks, and water control structures. See guidance for instructions.
- ☐ Land Use Map – include a map of the waterbody indicating the land use of the surrounding area. The following categories shall be used to describe the land use on the map high density residential, low density residential, commercial/industry, agricultural, parks, and undeveloped areas.

II. Water Quality Information

Provide the water quality parameter measurements on the data sheet provided (Appendix). These parameters are required, at a minimum. If there are additional data available or additional space is required, please attach additional pages. See guidance for specific collection requirements.

- ☐ Water Quality Sampling Map – include a map of the waterbody indicating the sampling sites used to collect the water quality parameters.

III. Biological Characteristics Of The Waterbody

Total higher aquatic plant surface coverage (%) = _____

- ☐ Aquatic Vegetation Map(s) and Data Analysis – include the results of an aquatic vegetation survey of the waterbody performed in August or September of the year prior to the proposed treatment. The survey and data analysis shall be performed according to EGLE’s “Procedures for Aquatic Vegetation Surveys.”
- ☐ Description of the Fish Community – include the source of the information and copies of any correspondence with fisheries biologists, anglers, natural resource groups, etc. Please attach the original comments as a separate sheet of paper.
- ☐ Description of the Wildlife Community – include the source of the information and copies of any correspondence with wildlife or habitat biologists. Please attach the original comments as a separate sheet of paper.
- ☐ Description of the Plant Community – include copies of any correspondence with the appropriate agencies. Please attach the original comments as a separate sheet of paper.
- ☐ Description of Special Concern, Threatened, or Endangered Species – include copies of any correspondence with the appropriate agencies. Please attach as a separate sheet of paper.

IV. Nuisance Conditions

List the current aquatic nuisance condition(s) occurring in the waterbody:

Indicate the activities that are being impaired by the nuisance condition(s):

- | | |
|-----------------------------------|----------------------------------|
| <input type="checkbox"/> Swimming | <input type="checkbox"/> Hunting |
| <input type="checkbox"/> Boating | <input type="checkbox"/> Other: |
| <input type="checkbox"/> Fishing | |
- ☐ Target Species Map – include a map of the waterbody indicating the current location(s) of each targeted nuisance species.

V. Vegetation Management Goals

Indicate the appropriate management goals that are the desired outcome(s) of this program.

- ☐ Create/Maintain Swimming Areas
- ☐ Create/Protect Fish/Wildlife Habitat
- ☐ Improve Native Plant Diversity
- ☐ Protect Endangered/Threatened Species
- ☐ Create Areas for Recreational Use (boating, water skiing, fishing, etc.)
- ☐ Remove Non-Native Plant Species
- ☐ Other: _____
- ☐ Management Goal Maps – include map(s) indicating locations where each of the goals may be achieved through the proposed management activities.

VI. History of Vegetation Management for this Waterbody

- ☐ Provide a written description of the management activities performed on the waterbody within the past 10 years. Include mechanical, chemical, or biological control efforts, lake level manipulation, dredging, and fish stocking activities (including species stocked and stocking schedule).

VII. Vegetation Management Options

List all management options considered to achieve the management goals established for this waterbody. Briefly explain why each proposed management option was chosen or not chosen.

VIII. Vegetation Management Plan

Propose a 3-year aquatic vegetation management plan that will be used to attain the management goals for this project by checking the appropriate box(es) below.

Year 1: _____

Vegetation	Systemic herbicides	Contact herbicides	Algaecides	Harvesting	Biological Controls	Fluridone or Other
Non-Native Submerged Species	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Native Submerged Species	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Non-Native Emergent Species	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Native Emergent Species	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Algae	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Non-Native Macroalgae	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Native Macroalgae	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Year 2: _____

Vegetation	Systemic herbicides	Contact herbicides	Algaecides	Harvesting	Biological Controls	Fluridone or Other
Non-Native Submerged Species	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Native Submerged Species	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Non-Native Emergent Species	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Native Emergent Species	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Algae	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Non-Native Macroalgae	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Native Macroalgae	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Year 3: _____

Vegetation	Systemic herbicides	Contact herbicides	Algaecides	Harvesting	Biological Controls	Fluridone or Other
Non-Native Submerged Species	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Native Submerged Species	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Non-Native Emergent Species	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Native Emergent Species	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Algae	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Non-Native Macroalgae	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Native Macroalgae	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Provide any additional information to clarify the proposed treatment strategy for each year of the management plan.

- ☐ Annual Vegetation Management Maps – include maps showing areas of management for each year. Be sure to compare the Management Goal Maps with the Annual Vegetation Management Maps to ensure that the proposed treatments are consistent with the management goals.
- ☐ Fluridone (or other product) Distribution Map – include a map of the waterbody indicating the proposed path of fluridone (or other product) distribution in the lake.
- ☐ Fluridone (or other product) Calculations – include any calculations used to determine the amount of fluridone (or other product) requested for use.

IX. Monitoring and Evaluation

List the proposed monitoring activities to be performed on the waterbody during the 3 years of the management plan, include proposed date(s) of each activity. Be as specific as possible.

Proposed Activity	Proposed Date(s) and Responsible Party
<input type="checkbox"/> Aquatic vegetation survey	
<input type="checkbox"/> Fluridone concentration sampling	
<input type="checkbox"/> EffecTEST™	
<input type="checkbox"/> PlanTEST™	
<input type="checkbox"/> Water quality sampling	
<input type="checkbox"/> Fish surveys	
<input type="checkbox"/> Other:	

Describe how the monitoring results will be used to evaluate the success of this program in achieving the stated management goals:

Management Goals (from Section V)

How will you evaluate your success of this goal using the monitoring results?

- ☐ Fluridone (or other product) Concentration Sampling Map – include a map of the waterbody showing locations where product concentration samples will be collected. Number each sample site.

X. Lake Management Plan Development

Who has participated in developing the lake management plan for this project?

- | | |
|--|--|
| <input type="checkbox"/> Commercial Applicator | <input type="checkbox"/> State Agency(ies) (specify) _____ |
| <input type="checkbox"/> Lake Consultant | <input type="checkbox"/> Park Administrator/Board |
| <input type="checkbox"/> Lake Board | <input type="checkbox"/> Group of Individual Riparians |
| <input type="checkbox"/> Lake Association | <input type="checkbox"/> Back Lot Owner(s) |
| <input type="checkbox"/> Township(s)/County(ies) | <input type="checkbox"/> Other (specify) _____ |

- ☐ Documentation of Lake Management Plan Development – provide documentation of participation in development of this Lake Management Plan by stakeholders and agencies responsible for managing public trust resources. Attach meeting minutes and other correspondence separately.

Lake Management Plan prepared by:

Signature

Printed name

Title

Affiliation/Organization

Date: _____

On behalf of the stakeholders or public agencies at _____,
I have reviewed this Lake Management Plan.

Signature

Printed name

Title

Affiliation/Organization

Date: _____

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This form and its contents are subject to the Freedom of Information Act and may be released to the public.

LAKE MANAGEMENT PLAN APPENDIX WATER QUALITY DATA

Waterbody Name: _____ County: _____

Temperature and Dissolved Oxygen

Date measured: _____

Depth measured (feet)	Temperature (°C)	Dissolved Oxygen (mg/L)

Transparency

Date measured:	Secchi Disk Transparency (feet)

Total Phosphorus and Total Alkalinity

Sample Type	Date measured	Total phosphorus (µg/L)	Total alkalinity (mg CaCO3/L)
Surface sample at spring turnover			
Deep Sample			