

**LONG RANGE MANAGEMENT PLAN FOR TEN MILE LAKE  
Cass County, Minnesota**

**A Guide for Protecting and Enhancing Ten Mile Lake's Environment**

**Ten Mile Lake Association, Inc. (TMLA, Inc)**

**Years 2003 to 2050**

**with**

**Objectives for the Three-year Period, 2003-2005**

**(Revised Draft approved by Board of Directors July 13, 2002)**

**Background:** The Ten Mile Lake (TML) Watershed is comprised of 22,908 acres of uplands, wetlands, and water resources. Within this area are approximately 3,200 acres of the Chippewa National Forest. Owners of watershed lands include the United States Forest Service, the State of Minnesota, Cass County, the Ten Mile Lake Association, Inc. and private citizens. Ten Mile Lake is the source of the Boy River.

**Purpose of the Year 2003-2005 Management Plan:** This plan updates the goals and objectives originally designed by the TMLA in 1994, and encourages the use of new technologies, methods, planning, and evaluation instruments in support of these enhanced goals and objectives.

This 2003-2005 Plan supports goals and objectives of sustainable watershed management by identifying best management practices for TMLA, Inc. as well as for other landowners within the TML watershed.

**Goal 1: The highest possible TML water quality, purity, and clarity.**

Objective A. Continuation of the program for upgrading non-conforming sewage treatment systems at the lakeshore and throughout the watershed.

Strategy 1. Provide criteria for evaluating the effectiveness of waste water treatment systems and encourage compliance with County and State ordinances and regulations.

Strategy 2. Provide informational materials and suggest cost-effective systems and regular maintenance to sustain fully functional and effective wastewater treatment systems on all properties within the Ten Mile Lake watershed. Where appropriate encourage the creation of cluster systems and/or Subordinate Service Districts to assist property owners with installation and maintenance of waste management systems.

Strategy 3. Monitor and evaluate new technologies as they emerge and convey promising information to the TMLA membership.

Objective B. Continued monitoring of TML water to track invertebrates, water quality and clarity.

Strategy 1. Take Secchi disk readings at specified locations at least weekly and compare data monthly and annually.

Strategy 2. Do periodic laboratory analyses of the lake's water at historical sites, preferably in spring, summer and fall.

Strategy 3. In the spring analyze the chemical content of selected tributary wetlands flowing into the lake and, where necessary, mitigate undesirable quality and/or flow.

Strategy 4. Do periodic laboratory analysis of groundwater probably once every other year. Sample and analyze water from selected, representative wells tributary to Ten Mile Lake so as to determine inflow and outflow groundwater quality and establish a baseline for tracking.

Objective C. Investigation, in coordination with County and State officials, of a "best procedure" approach to identify and reduce or neutralize pollution sources within the watershed.

Objective D. Provision of informational materials encouraging residents to use, manage, and dispose of household wastes and hazardous wastes in a safe and responsible manner.

Objective E. A continuing contributing wetland study to determine if it is possible in tributary wetland sediments to fix phosphorus and thereby prevent it from entering Ten Mile Lake through rainfall runoff.

Objective F. A continuing zooplankton study to monitor water quality and species diversity of fisheries food sources.

Objective G. Continued cooperation with the Department of Natural Resources (DNR), to monitor, record and track the water level in Ten Mile Lake by means of biweekly water level readings.

Objective H. Continued support of the current Boy River Hydraulic Study to analyze water levels, flow rates and the groundwater hydrodynamics in the Upper Boy River watershed from Ten Mile Lake to Big Deep Lake.

Objective I. Continued cooperation with DNR in its current study of the dynamics of the Upper Boy River's water levels and flow rates, the water levels in Ten Mile, Birch and Pleasant Lakes and the operation of the Birch Lake outlet structure.

Objective. J. Cooperation, as appropriate, with DNR and the Cass County Engineer in the design and construction of a new outlet structure on Birch Lake.

**Goal 2: Sustained and improved environmental and aesthetic watershed characteristics.**

Objective A. An inventory taken in coordination with State, County and local officials, of the flora and fauna typical of Ten Mile Lake and its surrounding watershed to establish a baseline.

Objective B. Cooperation with DNR, the U.S. Forest Service, the Cass County Land Department, the Environmental Services Department, and the Minnesota Pollution Control Agency (MCPA) to develop a plan for protecting and preserving the habitat needed by these species.

Strategy 1. Include flora, fauna and plan data in Objectives A and B above in both the Geographic Information System (GIS) that has been developed for Ten Mile and the Upland Functional Model.

1. Strategy 2. Utilize GIS to track changes, identify and visualize problems, and lay out recommend actions.

Objective C. Eradication of exotic and other undesirable species of flora and fauna.

Strategy 1. Assign a committee to survey the lake at least three times in each open water season for the presence of exotic flora and fauna species (e.g., Eurasian Water Milfoil, Zebra Mussels).

Strategy 2. Provide informational materials to encourage residents and guests to watch for and report exotics that they discover when using the lake.

Strategy 3. Work with state and local DNR officials to develop and implement plans for eradication.

Objective D. Property owner involvement in the study and recommendation of procedures for sustaining and improving TML shorelines.

Strategy 1. Provide informational materials that encourage property owners to comply with County and State shoreline management regulations and with the TMLA effort to maintain or improve the high quality of the existing shoreline by using best management practices.

Objective D. Cooperation with DNR to study, protect and, where appropriate, create aquatic habitat.

Objective E. Continued placement of buoys to mark and maintain "No Wake Zones" to protect shorelines, desirable habitat, and to enhance boating safety.

Objective F. Bird populations tracked in coordination with local birding clubs, the National Audubon Society and State, County and local representatives.

Objective G. Evaluation of the threat to loons of contamination from lead shot and lead sinkers used by local hunters and fishermen.

Objective H. Provision of educational materials and programs with a focus on Jet Ski regulation and wake reduction in sensitive areas to encourage responsible boating.

Objective I. Mapping of emerging and sunken vegetation into GIS.

Objective J. Continued TMLA, Inc. support of and participation in the County's Adopt a Highway program.

Objective K. Monitor and inform Association membership on the County Highway Department plan for the relocation and reconstruction of Highway 50 (Upper Ten Mile Lake Road).

Objective L. Monitor and inform Association membership on the County Highway Department plan for the widening and resurfacing of Highway 71.

Objective M. Monitor and inform Association membership on the County Highway Department plan for the resurfacing and/or widening of CSAH#6 (Lower Ten Mile Lake Road) and in the design and construction of a new CSAH #6 bridge over the Boy River.

**Goal 3: Maintained and improved TML fishery.**

Objective A. A Fishery Information Data Base

- Strategy 1. Compare and analyze all available fish census data from Ten Mile and identify problem areas.
- Strategy 2. Compare the TML Fisheries data with data from similar lakes and coordinate with the DNR as to how to improve the TML fishery.
- Strategy 3. Create and periodically publish a database of TML data.

Objective B. Protected and improved fish populations.

- Strategy 1. Protect spawning areas by identifying and communicating with residents and guests as to their importance to viable lake habitat and to the overall fishery.
- Strategy 2. Provide residents and guests with informational materials to encourage the establishment and maintenance of desirable aquatic vegetation beds for the fishery.
- Strategy 3. Collaborate with the DNR to carry out periodic fish stocking.

**Goal 4: Sustainable land development within the TML watershed.**

Objective A. Property surrounding TML categorized into three groups:

- 1. Suitable for development;
- 2. Marginally suitable for development (with strict safeguards);
- 3. Not suitable for development due to wetlands, insufficient lot area, environmentally sensitive areas.

Objective B. Provision of educational materials to encourage landowners and developers to:

- 1. Maintain appropriate set-backs and vegetative buffers;
- 2. Provide for adequate storm water retention and treatment;
- 3. Maintain an appropriate density of buildings and other impervious surfaces.
- 4. Abide by legal and best management practices restrictions on the development of sensitive lands.
- 5. West of Ten Mile Lake, limit development which would add more soluble ions to the lake.
- 6. Abide by existing legal prohibitions or conditions to be established on higher risk activities such as storage of fuel and other hazardous materials and extractions of gravel and other minerals.
- 7. Retain shoreline ice ridges or berms to prevent pollutant inflow.
- 8. Maintain and protect trees along the TML shoreline.

Objective C. The TMLA informed and active regarding watershed land development proposals.

- Strategy 1. Maintain a committee whose charge will be to become thoroughly informed on County and State lakeshore and watershed zoning requirements.
- Strategy 2. In cooperation with the TMLA, Inc. Board, the Committee develops and documents environmentally sound positions on specific developmental proposals and advises developers and governmental agencies of those positions.
- Strategy 3. Committee and/or other TMLA, Inc. representatives attend and be prepared to provide appropriate information and advice at all meetings of Cass County zoning and planning boards where these bodies are considering proposals for development and/or zoning variances on properties in the TML watershed.
- Strategy 3. Encourage Committee members to attend meetings of other organizations<sup>1</sup> especially where business affects the TML watershed.

**Goal 5: An environmentally informed and responsible TML watershed citizenry.**

Objective A. A continuing education program to inform the membership, residents and guests about watershed issues and problems and the responsibilities they have for sustaining or improving the lake and its environment.

- Strategy 1. Use the Association's *Newsletter*, Handbook, and web site as the principal information media, emphasizing "best management practices" and rallying support where such influence is needed.
- Strategy 2. Circulate as necessary special advisories to the membership.
- Strategy 3. Schedule special meetings and/or workshops as needed.
- Strategy 4. Establish in a central location a Ten Mile Lake Repository in which to maintain a collection of pertinent information, records and reports for historical and reference purposes and for the membership to use and enjoy.
- Strategy 5. Continue the volunteer well testing program to inform residents regarding the quality of their drinking water.
- Strategy 6. Provide educational materials on the use of groundwater as a potable water supply and the protection of human health.

Objective B. Increased property owner involvement in the ongoing lake management process.

Strategy 1. Maintain and enhance the existing TMLA, Inc. committee structure to achieve the objectives in this TML Long Range Management Plan (LRMP).

Strategy 2. Give each committee a specific charge (or charges) and clearly define committee responsibilities.

Strategy 3. Emphasize committee chairs' responsibility for committee activity and regular reports.

**Goal 6: A Utilized Geographic Information System (GIS)**

Objective A. Optimal utilization of Cass County's State of the art ArcInfo and Arcview GIS systems in continuation of TMLA's past support of the development of County management strategies for protection of Wetland and Shoreland areas.

Objective B. GIS tracking to identify and visualize information and problems that may affect the TML watershed environment and TML water quality.

**Goal 7: Sustainable forestry practices within the watershed to maintain and protect the high quality watershed runoff and groundwater.**

Objective A. Encouragement of the State, County and U.S. Forest Service to adopt sustainable management practices as they revise their Forest Management Plans for the watershed forest areas.

**Goal 8: A visible and active TMLA presence with County and State organizations whose programs and/or policies affect watershed air quality (precipitation), lakes, streams, and wetlands.**

Objective A. A friendly, cohesive and effective TMLA.

Strategy 1. Encourage membership in the TMLA, Inc. on the part of property owners, their families and other TML watershed residents.

Strategy 2. Maintain an accurate membership roster and mailing list.

Strategy 3. Publish an informative newsletter three times a year.

Strategy 4. Encourage TMLA-related social events and activities.

Strategy 5. Review and update the TMLA Mission Statement.

Strategy 6. Review and update the Bylaws.

Strategy 7. Review and update Articles of Incorporation.

Objective B. Effective relationships with and State, County, Township and other community organizations whose programs and policies affect watershed air quality, forests, lakes, streams and wetlands.

Strategy 1. Where appropriate, appoint representatives to participate in township, County and State directed programs and policy-making activities that will affect Ten Mile water quality and its environment.<sup>1</sup>

Strategy 2. Where appropriate, appoint representatives to attend, participate in and report on the meetings and purposes of other community organizations that share the concerns and goals of TMLA, Inc.<sup>1</sup>

**Goal 9: A regularly evaluated and updated Long-Range Management Plan.**

Objective A. Regular evaluation of the TMLA, Inc. LRMP during 2003-2005.

Strategy 1. Collect and analyze all data annually.

Strategy 2. Examine this management plan's structure annually to determine what is missing, what is unnecessary and where and how it should be revised.

Strategy 3. At three-year intervals compare data with historical norms, determine trends, if any, and modify the management plan as needed.

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<sup>1</sup> County, State and other community organizations of importance to TMLA, Inc.

The Minnesota Lakes Association  
The Association of Cass County Lakes  
The University of Minnesota Extension Service  
The Cass County Zoning Board  
Cass County Environmental Services  
The Upper Boy River Hydraulic Assessment Project  
The Heartland Coalition of Lakes Association  
The Mississippi Headwaters Board  
The Healthy Lakes Partnership  
Township Boards and Programs  
The Minnesota Rivers Council  
The University of Minnesota Water Resources Center  
The Minnesota Pollution Control Agency  
The Department of Natural Resources  
Tri-county Leech Lake Watershed Project  
Tri-county Leech Lake Watershed Foundation