

# 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 2016 to 2066

Long Range Management Plan (LRMP) Originally Approved by the Board of Directors on July 13, 2002. Proposed Revision by the Healthy Lakes Committee in the spring of 2017 and approved by the TMLA Board of Directors on June 17, 2017.

**BACKGROUND:** The Ten Mile Lake (TML) Watershed, as of 2001, is comprised of 32 percent private land, 31 percent open water, and 37 percent public land. This includes 3 percent developed shoreline, 2.5 percent cropland, 22 percent forested upland, 0.5 percent open pasture, grass land, and shrub land, 4 percent wetlands, 31 percent open water, protected lands of 0 percent county lands, 22 percent state lands, and 15 percent Federal lands. The watershed is part of the Northern Lakes and Forest Ecoregion and part of the Leech Lake major watershed. 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 TMLA LONG RANGE MANAGEMENT PLAN (LRMP):** This plan supports the mission of the TMLA:

“The Ten Mile Lake Association is made up of residents and visitors who are dedicated to the preservation and improvement of Ten Mile Lake and its environment.”

This plan updates the goals, objectives and strategies originally designed by the TMLA in 1994 and revised July 13, 2002 and encourages the use of new technologies, methods, planning and evaluation instruments in support of these enhanced goals and objectives. It is the intention of the Board of Directors, from 2002 on, to support this plan with a shorter range plan identifying *three-year* Goals, Objectives and specific Strategies for meeting the Objectives under each of these LRMP Goals. The Board calls this separate, three-year plan the **TMLA Lake Management Plan (LMP)**.

The Board further intends that in the third year of every three-year period beginning in 2003, the LMP with its Goals, Objectives and Strategies be reviewed and updated by Board members and Association Committees. Specifically, the TMLA Healthy Lakes Committee asks Board members and Committees to record the previous three-years' achievements, challenges and needs and to identify new or revised Goals, Objectives and Strategies as they become necessary in support of the LRMP's ten major goals. The Healthy Lakes Committee records achievements, challenges and needs in each triennial update of the LMP, which then serves as a guide to the activities of the Board and its Committees over the next three-year period. Successive LMPs are available on the TMLA Web Site at <http://www.tenmilelake.org/>

## **LONG RANGE MANAGEMENT PLAN GOALS, 2016 – 2066:**

### **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. Periodically analyze the chemical content of selected tributary wetlands flowing into the lake and, where necessary, mitigate undesirable quality and/or flow.
- Strategy 4. Pollutants. In cooperation with the DNR and the MPCA, monitor fish for mercury. Monitor emissions from septic systems for both the usual pollutants and for any waste drugs that may enter the lake from septic effluent.
- Strategy 5. 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. Continue monitoring the five test wells every ten years.
- Strategy 6. In coordination with the Fishery Committee and MDNR use Cisco's as an indicator species for tracking and monitoring of the aquatic health of the fauna of Ten Mile Lake

Objective C. Investigation, in coordination with County and State officials, of a "best procedure" approach to identify and reduce or neutralize contributing pollution sources within and outside 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. 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 F. Seek new ways to increase member involvement in Association committees and business. Seek new ways to inform membership about current issues and events and encourage all property owners to become involved in the Association.

Strategy 1 Incorporate new communication strategies to encourage involvement in the Association

**Goal 2: Sustained and improved TML 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 and track changes.
  - Strategy 1. Collect data from sonar readings to allow Contour Innovations (Bio Base) to construct vegetation maps of the lake at different time during the year.
- 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 Ten Mile's flora and fauna species.
  - Strategy 1. Include flora, fauna and plan data in Objectives A and B above in both the Cass County Geographic Information System (GIS) and Ten Mile and the Upland Functional Model.
  - Strategy 2. Utilize GIS to track changes, identify and visualize problems, and lay out recommended actions.
- Objective C. Eradication of exotic and other undesirable species of flora and fauna. Prevention of the entry of AIS and reparation of the consequences of the introduction of AIS into the lake.
  - 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, Chinese Mystery Snails, Banded Mystery Snails, Purple Loosestrife, Starry Stonewort, Spiney Waterflea).
  - 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 control and 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.
  - Strategy 2. Work with property owners to sustain sensitive shoreline and maintain shoreline stability in coordination with Cass County and Minnesota Department of Natural Resources.
  - Strategy 3. Encourage property owners to work with Cass County Environmental services on actual shoreline restoration projects.
  - Strategy 4. Inspection
  - Strategy 5. Resorts/Campgrounds
- Objective E. Cooperation with the DNR to study, protect and, where appropriate, create aquatic habitat. Plan and implement a plan to purchase or otherwise acquire sensitive shoreline properties around TML to sustain and protect its environment. (TMLA-purchased parcels with Conservation Easements placed on them and assigned to the Minnesota Land Trust are already in place.)
- Strategy 1. Periodically survey the shoreline using the DNR's "Score Your Shore" method.
- Objective F. Continue placement of buoys to mark and maintain "No Wake Zones" to protect shorelines, desirable habitat, and to enhance boating safety.
- Objective G. Track bird populations coordination with local birding clubs, the National Audubon Society and State, County and local representatives. (TMLA currently tracks Loons and Eagles but no other species.)
- Objective H. Evaluate the threat to loons of contamination from lead shot and lead sinkers used by local hunters and fishermen.
- Objective I. Provide educational materials and programs with a focus on Jet Ski regulation and wake reduction in sensitive areas to encourage responsible boating.
- Objective J. Map emerging and sunken vegetation into GIS.
- Objective K. Continue TMLA, Inc. support of and participation in the County's Adopt a Highway program.
- Objective L. Continue to track Zebra Mussel via veliger monitoring, boat landing access and egress
- Objective M. Seek new ways to eliminate effects of swimmer's itch on TML swimmers.
- Objective N. A continuing zooplankton study to monitor water quality and species diversity of fisheries food sources.

**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.
- Strategy 4. Use Cisco data to monitor the fauna health of Ten Mile Lake

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.
- Strategy 4. Improve the pan fish stock in TML

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

Objective A. Categorize property within the TML watershed into three groups:

1. Land suitable for development;
2. Land marginally suitable for development (with strict safeguards);
3. Land not suitable for development due to wetlands, insufficient lot area, environmentally sensitive areas, etc.

Objective B. Identify land suitable for Conservation Easement placement.

Objective C. Stay abreast of technological developments that might adversely affect the flora and fauna of the lake and its watershed.

Objective D. Replenish the James W. Schwartz Environmental Preservation Fund with monies to be used for the purchase of property for conservation easements. Continue governance by financially astute Association officers and a committed TMLA Board of Directors with the wisdom to utilize JWS EPF resources in ways that most effectively further the purposes of the Association.

Objective E. Provide 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;
9. Maintain Forested land areas to maintain runoff water quality;
10. Encourage cabin succession planning.

Objective C. Protection of watershed forest lands and shorelines by means of active membership participation to counter perceived threats due to inappropriate development.

- 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, giving special attention to the need appropriately to control second tier development around the lake.
- Strategy 4. Encourage Committee members and other Ten Milers to attend meetings of other organization 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*, Communication and Technology Committee 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 and safety 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: Utilized Geographic Information System (GIS)**

Objective A. Optimal utilization of Cass County's State of the art 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. Encourage 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.

Objective B. Develop an implementation plan for the preservation of forested lands within the Ten Mile Lake Watershed. The plan would use conservation easements assignments and Resource Protection Districts & other methods to sustain the existing forested lands into perpetuity. Maintain TMLA-purchased parcels under the Minnesota Land Trust-held Conservation Easement.

### **Goal 8: A visible and active TMLA presence with local, County, State and Federal 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 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 local, Township, County, State, and Federal and other community organizations whose programs and policies affect watershed air quality, forests, lakes, streams, groundwater and wetlands.

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

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.

**Goal 9: An Action Plan to minimize the effects of global-warming-related climate change on TML watershed ecology and environs, including air and water quality, flora, fauna, invasive species and land development. At a broad level recommend good practices and monitor changes in the lake over the next half century.**

Objective A: Maintain and improve the existing Ten Mile Lake watershed in forested/wetland land use status.

Strategy 1. Place Conservation Reserve easement & Resource Protection districts protection on large parcels of forested land to sustain the land in a perpetual forested status.

Strategy 2. Monitor adjacent contributing watersheds to track and keep contributing surface and groundwater in the highest possible water quality.

Strategy 3. Encourage best management practices of land use within and outside the TML watershed to reduce windblown pollution.

Objective B: Reduce our carbon foot print by encouraging/using geothermal, solar, wind technology and other technological breakthroughs.

**Goal 10: A. A 3-Year Lake Management Plan (LMP) evaluated and updated every third year by the Healthy Lakes Committee in coordination with the Board of Directors, and,**

**B. A 50-Year Long Range Management Plan (LRMP) evaluated and updated every 5 years by the Healthy Lakes Committee in coordination with the TMLA Board.**

Objective A. Regular evaluations of the TMLA, Inc. LMP and LRMP.

Strategy 1. Collect and analyze all data annually.

Strategy 2. At three-year intervals compare data with historical norms, determine trends, if any, and modify the LMP accordingly.

Strategy 3. At five-year intervals, review and update the TMLA LRMP, eliminating what is unnecessary and adding what is needed to keep the plan relevant to emerging developments and challenges.