

## Lake Care Management History And Approach

With the continuation of house construction and home sales around the lake, the L.T.P.O.A. Board felt it was important to inform the new comers, and remind the old timers of the journey our lake has taken. We also want everyone to understand the controlling factors guiding the lake care management activity.

**Lake Characteristics:** The lake is shallow with a nutrient rich bottomland, which means it is an ideal environment for aquatic plant growth. The key ingredients for plant growth are nutrients and sun light.

**Un-invited Guest:**

1. Early in the lakes existence a non-native plant, Eurasian Milfoil, showed up in the lake.
2. Around 2000 the next significant uninvited guests, Zebra Mussels, arrived.
3. In 2009 the latest threat, Starry Stonewort, arrived.

**Un-invited Guest Impact On The Lake:**

1. Eurasian Milfoil is an aggressive plant that will engulf the entire lake and choke out the native plants. By 1989 Eurasian Milfoil had become so thick that the lake was becoming un-navigable. Eurasian Milfoil is very difficult to eradicate, but can be controlled with appropriate chemicals.
2. From the first detection of the Zebra Mussels until 2010 the water clarity went from 5 feet to 13 feet. This clarity increase permitted significantly more sunlight to reach the aquatic plants in the lake.
3. In 2 years Starry Stonewort was engulfing a significant amount of the near shore bottom land. It can get so thick that it will impede boats from getting through its mounded structure. It can also totally engulf the bottomland where Bass and pan fish spawn.

**Activities to understand the problems and develop a Lake Care Management Plan:**

1. In 1999 the LTPOA Board commissioned a lake study by Progressive AE, a highly respected Michigan Company that specializes in lake care management. The output from that study showed the lake had a high level of nutrients in the water column. It also concluded that Lake Templene was progressing faster than normal in the aging process. It recommended that Eurasian Milfoil should be controlled with chemicals as harvesting would fragment the plant and cause it to spread.
2. In 2006 Progressive AE was requested to make another assessment of the lake. That assessment substantiated the 1999 conclusions. This assessment was review by Michigan State University and acknowledged to be valid.
3. In 2007 The Spicer Group an engineering company that specializes in water engineering conducted a bathometric survey of the lake which mapped the bottom contour and sediment build up.

4. After the lake mapping, a team was formed to develop a Lake Preservation Plan. The team was made up of personnel from The Spicer Group, personnel from Wetland And Coastal, a company made up of ex-MDEQ employees (who specialize in lake care management) and LTPOA Board members.

5. A water well study was completed in 2009, which showed that more aggressive herbicides could be used near shore in almost every area of the lake.

The Lake Preservation Plan:

1. Dredge the areas of the lake with the greatest sediment build up.

2. Dredge the larger shallow areas of the lake with heavy boat traffic.

3. After completing the above dredging, reassess the lake to determine the next areas for dredging. (The tax special assessment petitions are in the hands of the townships).

4. The benefits from dredging are the removal of plants in the areas that are dredged, deepen the water and remove nutrient rich bottom land.

5. Aquatic plant control with herbicide should use systemic wherever possible.

6. Harvest aquatic plants when appropriate. Example Wild Celery in July of 2008 and 2009. Wild Celery harvesting is plan again this year.

7. Implement water shed management programs to stop nutrient input to the water in Lake Templene.

A. Only use organic fertilizer on the property around the lake.

B. Establish vegetative barriers between the lake and the lawns

C. The LTPOA has partnered with the Branch County Conservation District to create the Prairie River Water Shed Management District.

8. Have lake drawdowns as frequently as will be permitted by DNRE to control near shore aquatic plant growth. The DNRE agreed to the 2010 all winter drawdown because of the LTPOA partnering with Glen Oaks College for a lake study.

Controlling Factors On Lake Care Management:

1. Aquatic native plants more than 300 feet from shore can only be treated before June 15th.

2. Aquatic native plants can not be treated in front of undeveloped lots.

3. Only 100 feet of shoreline can be treated in front of developed lots.

4. Everything that happens in or under the water requires a permit from DNRE.

5. The LTPOA is only empowered by the covenants to establish fees for maintenance of the streets and common property along with annual membership dues. The special

assessment for aquatic plant management was enacted in 1989 for the purpose of keeping the main body of the lake navigable and keeping channels open in and out of property owners' docks.

6. Increased recreational boat traffic is cutting off more plants than in the past, which results in more floating plant material.

7. The property owners' survey conducted in the fall of 2010 was in part to determine if there was enough support from the membership to enact a new special assessment with expanded cost and scope from the original aquatic plant management assessment. The survey did not indicate sufficient support for an expanded scope. The Board then worked with a group to provide a more cost effective shoreline clean up on a weekly basis for property owners who so desired.

The Board is looking for a means to reduce the amount of floating plants as indicated by the newly formed committee.