

BEAR LAKE IMPROVEMENT BOARD NEWSLETTER

Summer 2019

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2019 AGENDA FOR BEAR LAKE

Restorative Lake Sciences (RLS) has been retained by the Bear Lake Improvement Board to conduct aquatic plant surveys, scientific research, water quality sampling, and other lake management activities on Bear Lake. RLS will also be involved in the oversight of all weed treatments to assure the best outcome.

RLS issues an annual report each fall on the current condition of the lake. The report also compares lake trends and makes scientific recommendations for moving forward with further improvements. Scientists from RLS have been on the lake this summer a few times so far to sample for water quality and scan the whole lake for aquatic vegetation and create updated maps.



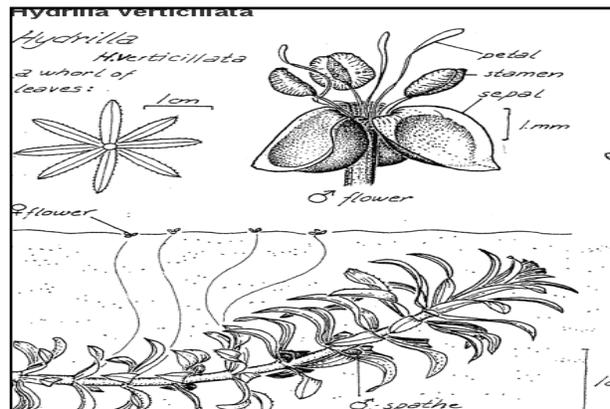
BEWARE OF INVADERS!:

A species that is not from a local area and grows out of control is an invasive exotic species. Once they enter an aquatic ecosystem, it is nearly impossible to get rid of them completely, but control is possible. There are several that have been managed in inland lakes but lately the macro alga, Starry Stonewort has become prevalent and in shallow waters can reduce recreation to a halt. The alga grows in dense tufts and thrives in clear hard waters such as those found in the lower peninsula of Michigan. There is no magic potion to reduce Starry Stonewort but copper algacides and mechanical removal have been successful. Hydrilla is another invasive that closely resembles the native Elodea but it has more leaves and feels brittle to the touch. Hydrilla has become common in the southern states

and is especially problematic in Florida. The plant grows from tubers that may be as numerous as 10,000 tubers per square meter of bottom!! Luckily, both species have not been found in Bear Lake. RLS is always looking for invaders during their detailed surveys.

If you spot something that you have never seen before, please contact your local lake improvement board Chair, Bob Yates, and he will consult with RLS on the plant. Everyone together is needed to keep an eye on Bear Lake. After all, we want the lake there for future generations!

Shown to the right: (upper photo of Starry Stonewort) and (lower diagram of Hydrilla).



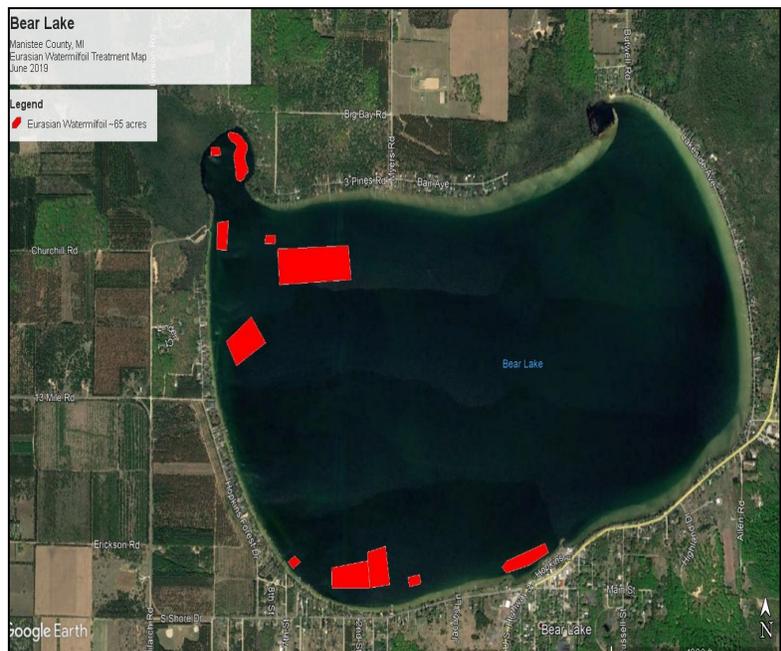
HOW TREATMENT AREAS ARE SELECTED

Each year in our inland lakes, aquatic plants grow in different locations and at different growth rates. Factors such as the length of winter and ice cover, arrival and temperature of spring, and the progression of warm summer months and sunlight all determine the overall aquatic plant communities in inland lakes. Most aquatic plants assimilate nutrients from the lake sediments and some from the water column. The more nutrients and sunlight available, the better they thrive.

Each spring, RLS scientists survey the lake to determine if any treatments are needed. The first priority is given to invasive species such as Eurasian Watermilfoil and Curly-Leaf Pondweed. Areas that contain nuisance native aquatic plants are secondary but usually treated as well. There are two classes of herbicides—contact and systemic. Contact herbicides

kill the plant on contact but not the roots and so the plant may return. Systemic herbicides kill roots and are used for large infestations. Over the past decade, RLS has been managing the lake and reducing the presence of invasive species in the lake.

RLS is present to oversee all treatments to assure that the proper herbicides and doses are applied to the lake. All of this has led to a very successful weed reduction program for the lake.



HOW TO CARE FOR BEAR LAKE:

1. Avoid the use of lawn fertilizers that contain phosphorus (P). P is the main nutrient required for aquatic plant and algae growth, and plants grow in excess when P is abundant. When possible, water lawns with lake water which usually contains adequate P for successful lawn growth. If you must fertilize your lawn, assure that the middle number on the bag of fertilizer reads "0" to denote the absence of P.
2. Preserve riparian vegetation buffers around the lake (such as those that consist of Cattails, Bulrushes, or other emergent plants), since they act as a filter to catch nutrients and pollutants that occur on land and may run off into the lake. As an additional bonus, Canada geese (*Branta canadensis*) usually do not prefer lakefront lawns with dense riparian vegetation because they are concerned about the potential of hidden predators within the vegetation. Encourage a natural shoreline in areas next to beaches and swim zones.
3. Do not burn leaves near the lake shoreline since the ash is a high source of P. The ash is lightweight and may become airborne and land in the water, eventually becoming dissolved and utilized by aquatic vegetation and algae.
4. Assure that all areas that drain into the lake from the surrounding land are vegetated and that no fertilizers are used in areas with saturated soils (see soil table above).
5. NEVER dump any solvents, chemicals, or debris into the lake. These can all harm fish, wildlife, and humans!
6. Never dump leaves or chemicals into storm drains as these often lead to waterways.
7. At a minimum, have annual or bi-annual septic tank and drain field inspections. Septic systems and drain fields can contribute high nutrient and bacteria loads to the lake which then are costly to mitigate.
8. Allow trees to grow near the shoreline for erosion control but be sure to rake away leaves in the fall. Do not rake leaves into the lake and dispose of leaves as yard waste.
9. Do not feed any waterfowl. Although this is enjoyable, they have plenty of food in the lake and their feces are all high in nutrients and bacteria.
10. Do not allow any rubber from water balloons, firework debris, plastic, Styrofoam, or food containers to enter the lake. Most of this will require hundreds of years to break down and is harmful to the lake.
11. Be a responsible lake steward! Attend lake association and lake board meetings and learn about other lake issues.

AQUATIC HERBICIDE TREATMENT POSTINGS...

You may have seen bright yellow or pale yellow postings places on trees, docks, or posts during the days of aquatic herbicide treatments. These postings are required by the MDEQ during the time of posting. They must list what herbicides are used on the lake that day and the associated restrictions.

All notices are placed on 8.5 x 11.5 paper that is usually durable in case it rains. There is a 24 hour swimming restriction after the use of ALL aquatic herbicides so please pay attention to the posting

Estimated time of application: ~8:00 AM - 5:00 PM
The following water use restrictions apply through the time of application.

Chemical product/active ingredient	Chemical trade name	Do Not Use this water for swimming or bathing until
2,4-D amine Sculpin	■ Sculpin G	6/19/2019
Triclopyr granular	■ Renovate OTF	6/19/2019
Diquat Dibromide	■ Tribune	6/19/2019
Endothal	■ Aquathol K	6/19/2019
Flumioxazin	■ Schooner	6/19/2019
Adjuvant	■ Cygnet Plus	N/A
Polyacrylamide & Sinking Adjuvant	■ Polyan	N/A

Company Conducting Treatment:
 PLM Lake & Land Management Corp.
 PO Box 132, Caledonia, MI 49316
 800-352-4434 www.plmcorp.net

NOTE: Site
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 ProcellaC
 treated water
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PLM Lake & Land Management Corp. Certified Applicator(s) Con
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date and be aware of posting time. Most aquatic herbicides dissipate within a few days so they are not toxic to the aquatic life. All herbicides must be approved by the USDA and also allowed by the MDEQ for use on all waters.

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www.restorative
 lakesciences.com