Black Lake Association Invasive Species Inventory Report

Created by Huron Pines October, 2020

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Black Lake Overview

Black Lake is situated along the Cheboygan–Presque Isle county line in northeast lower Michigan, approximately 6 miles north of the town of Onaway. The lake is the tenth largest inland lake in Michigan by surface acreage at 10,113 acres, and has nearly 18 miles of shoreline. The Black Lake watershed encompasses more than 350,000 acres, representing 38% of the greater Cheboygan River Watershed.

Black Lake is fed by a variety of small creeks and rivers. The largest tributary is the Upper Black River, which enters the lake on the west shore. This river provides suitable spawning habitat for various species of fish that live in Black Lake, including lake sturgeon, walleye, and redhorse sucker. Other tributaries, such as Stony, Stewart, and Fisher creeks, enter the lake at the south end, and Mud Creek enters the lake on the northwest shore. Many of these tributaries are used seasonally by game fish for spawning, and spring fishing closures are in place on both the Upper Black and Rainy rivers to protect spawning fish. Little Mud Creek, Stony Creek, and parts of the Rainy and Upper Black rivers are also considered Michigan designated trout streams.

There is public access from several sites around the lake, including Onaway State Park and the Black Lake State Forest Campground. The shoreline of Black Lake is largely developed with private residences, and there is little public riparian land except at the state park, near the Upper Black River mouth, and along the northeast shore where the state forest campground is.

A late 1930s bathymetric study determined the lake to be a mesotrophic (moderately biologically productive) lake with a maximum depth of 50 ft. The lake has large areas of shallow shoals, consisting primarily of sand, that drop off sharply into deeper waters. Shoal width ranges from 330 ft wide to a quarter-mile wide based on 1939 estimates. Approximately 29% of Black Lake is less than 10 ft deep, nearly 9% is 10–20 ft deep, 17% is 20–30 ft deep, and 45% of Black Lake is water greater than 30 ft deep. Maximum depth is around 50 ft and mean depth around 23 ft. **(Black Lake bathymetric data provided by: State of Michigan Department of Natural Resources SPECIAL REPORT 56, The Fish Community and Fishery of Black Lake, Cheboygan and Presque Isle Counties, Michigan with Emphasis on Walleye, Northern Pike, and Smallmouth Bass, May 2011)*

Abstract

Due to the vigilance of the Black Lake Association (BLA) and poor weather conditions in 2019, the BLA and Huron Pines partnered together to conduct an additional survey for emergent invasve species on Black Lake.

The information below compiles what we gathered from the 2019 invasive species survey with newly found sites from the 2020 invasive species survey.

The main invasive species of concern for Black Lake and the surrounding area include: *Phragmites australis*, Eurasian watermilfoil, European frog-bit, and purple loosestrife. New invasive species infestations identified in Black Lake during the 2020 survey include purple loosestrife, invasive phragmites, and spotted knapweed.

Methods

In preparation for the inventory, the data from the 2019 inventory with all previously known sites of invasive species, was used for reference. Every previously marked location of native phragmites was also re-checked to make sure they could still be classified as native and not as a hybrid or invasive. For purposes of this inventory, a 16 foot Jon-boat with an outboard motor was used to navigate the lake. The boat was launched from Onaway State Park.

The inventory took place over two different days, the first day was June 29th, the second day was July 18th. The inventory was done by navigating in shallow, nearshore waters, searching for both emergent and submerged invasive weeds, as well as along the shoreline and the nearshore environment. When a cove or bay was encountered it would be explored, wading the nearshore lands as needed. River and stream inlets and outlets near the shoreline were also searched to a distance of approximately 100 feet when possible. When a submerged plant was identified, it would be hauled in for closer inspection and identification. When any invasive species was positively identified, it was recorded on a data sheet that captured its location via GPS. To help guide identification, “A Field Identification Guide to Invasive Plants in Michigan’s Natural Communities” was used.

Results

Overall, there was not a significant change from 2019 to 2020 and only two new sites of concern were located. The most concerning new infestation is a patch of invasive phragmites located at the Northern end of the lake. This site is particularly worrisome as it is already spreading across a good distance of shoreline. It is also growing near a native patch of phragmites and the possibility of these two species hybridizing and being more difficult to properly identify in the future, is also concerning.

The other new site is not as alarming as it covers a very small area, approximately 5ft by 5ft, and that is a purple loosestrife recording on the Eastern shore. The most unique factor of this location is that there were no recordings of purple loosestrife in this area of the lake last year.

Due to few significant changes between the yearly inventories, Huron Pines proposes conducting the inventory every other year, every three years, or every five years, whichever the two partners decide will be the best course of action.

Inventoried Invasive Species Reference

Native Phragmites - Occurs in wetland areas such as streams, ponds, ditches, lakes etc. Native phragmites typically only reaches a height of 6.5 feet and doesn't grow nearly as dense as invasive phragmites does. There are several ways to distinguish these two species. Native phragmites will begin growing later in the spring and it will die back sooner in the fall than invasive phragmites. You can also distinguish between them by looking at their stems, leaf color, and seed head. Native phragmites has bright red to magenta stems, a lighter greenish-yellow leaf, and smaller, browner, seed heads.
Huron Pines Recommendation - Native phragmites is not a plant you have to worry about but it is always a good idea to keep an eye on stands to see if they are growing larger. Many invasive species managers and scientists now believe that invasive and native phragmites can hybridize.

Huron Pines can not treat native phragmites.

Purple loosestrife - A perennial herbaceous wetland plant that can tolerate a wide range of soil types. Its most prominent feature is its four-sided square stem and spike of purple flowers that bloom from late July through October. It can also be identified by its lance-shaped leaves, which are larger toward the base. It can reproduce by seed or vegetatively from cut pieces of its stem. This plant spreads vigorously and crowds out native plant species. Plants can be hand pulled as long as the entire plant is removed. The recommended treatment, if already gone to seed, is to remove the flower and seed heads (dispose of in trash bags) and then chemically treat the remaining plant. This type of treatment is best conducted after peak bloom in late August. ***Huron Pines recommendation for purple loosestrife:***

Purple Loosestrife should be removed by handpulling or digging when it is small enough to effectively do so. Continuing education of Black Lake landowners about purple loosestrife will also be helpful as landowners could remove any plants they find on their own property themselves. When removed, plants should be disposed of properly or a new infestation may begin. Place removed plants in a black garbage bag and allow them to dry out in the sun for a few days before disposing in a landfill. When it becomes too large, chemical treatment may be necessary which may require a permit.

Morrow's honeysuckle - A deciduous shrub with shallow roots that grows up to 6 feet tall. It can grow in a variety of soil and moisture conditions. It is most easily identified from other shrubs by its hollow stem. Other features include oblong leaves that are slightly hairy underneath, small tubular white flowers that bloom May-June, and paired red berries. This plant is considered invasive because it forms dense thickets and decreases plant diversity. Its seeds are easily dispersed long distances by birds and can resprout from root fragments. It can also be harmful to nesting wildlife because of its hollow stems, which can collapse under the weight of growing nests, increasing juvenile bird mortality. Chemical treatment would be recommended and can be done by cutting and treating the exposed stump with a herbicide.

Huron Pines recommendation for Morrow's honeysuckle:

This plant was brought into the country for erosion control and wildlife habitat. If this plant is found to be developing a monoculture, i.e., outcompeting native plant regeneration, mechanical or chemical removal is recommended.

Reed Canarygrass - This plant is considered invasive because of its thick, fibrous root system that is very difficult to eradicate and causes it to grow in dense monocultures. This is a cool-season perennial grass that grows in wet areas. It reproduces by rhizomes and by seed. It can be difficult to identify but it does have a couple of unique characteristics. The first feature is that it has a very prominent transparent 'paper-like' ligule and the second is that it has an area on the leaf blade that looks like it has been scrunched together, appearing as a 'W'. This grass has also been described as a smaller version of invasive phragmites based on its appearance. Chemical treatment in the late summer or fall would be the most effective control method.

Huron Pines recommendation for reed canarygrass: Unfortunately, this plant is naturalized across most of the United States. However, in areas where rare or endangered species are identified, areas of historic value, or where a landowner is trying to establish a native greenbelt, chemical treatment is recommended which may require a permit.

Phragmites australis or Invasive Phragmites - Occurs in wetland areas such as streams, ponds, ditches, lakes etc. The plants range from 6-13 feet tall and grow in dense, often impenetrable stands. They reproduce extensively by seed as well as by rhizomes which can live for 3-6 years after cutting or covering, making them difficult to eradicate. They can be identified by their hairy ligules (the area where the leaf attaches to the stem), hollow ridgid stems, feathery seed heads, and by their height and density. Chemical treatment in late summer or fall is the best treatment for invasive phragmites. Attempting to *remove by mowing or digging will only stimulate growth.* ***Huron Pines recommendation for invasive phragmites: chemical treatment of this plant species as soon as you are able is highly recommended. It can spread very quickly and hybridize with native phragmites. This type of control would require a permit. The BLA has already requested Huron Pines assistance in the removal of this plant and Huron Pines has placed this location on their list for treatment in 2021 and will contact the BLA in the spring to work out treatment details.***

Further Invasive Species Reference

Beyond those invasives species identified and inventoried in Black Lake, there are many others already found in Michigan and the midwest that should be closely monitored for. If you find any of the following species, please notify Huron Pines immediately. Each of these species pose a different and unique threat, and preventing them from entering Black Lake is a top priority. Other aquatic plant species not pictured below include flowering rush, water lettuce, water hyacinth, and water soldier.

European Frog-bit - A free-floating aquatic plant that prefers slow moving waters, generally along the edges of lakes, rivers, and streams often mixed in with other vegetation. It is also often found in wetlands, ditches, and swales. It is considered invasive because of its ability to spread very quickly and create large dense mats. It most closely resembles a miniature lily pad, with its leaves growing to a maximum of 2.25 inches in adulthood. It produces a small white flower, about ½ inch in diameter, that flowers in late summer. This plant has a tendril-like hanging root system that easily entangles with neighboring plants to create the difficult to remove mats. Frog-bit reproduces vegetatively and by overwintering buds called turions. **New sighting in 2020 in Cheboygan near Duncan Bay**

Photo Courtesy of Michigan.gov

Yellow Floating Heart - Is a prohibited floating plant with a unique 5 petaled flower with rippled edges. The leaves, also rippled, can grow up to 4 inches long. This plant can form into dense mats and it reproduces quickly both from its large seed production and vegetatively. It has currently only been found in southern parts of Michigan. The information provided here was gathered from the Global Invasive Species Database, Michigan Natural Features Inventory, and MISIN.

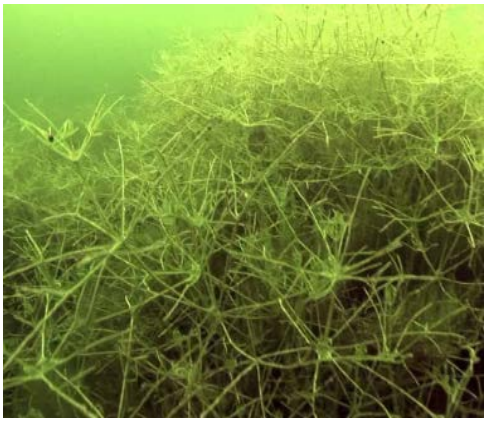

Photo courtesy of Tip of the Mitt Watershed Council

Starry Stonewort - Usually appearing in July, this aquatic plant quickly grows to cover the bottom of water bodies. It has many irregular branches and it gets its name from the very small cream colored, star shaped bulbs that form at the branch nodes. This plant is considered invasive because it grows very densely pushing out native species as well as blocking the movement and spawning of native fish and impeding recreational activities. This plant is spread easily by fragments attaching to boats, the fur of mammals, and birds. The information provided here was gathered from MISIN and Tip of the Mitt Watershed Council.

For further information, including interactive maps, please go to the Midwest Invasive Species Information Network (MISIN) http://www.misin.msu.edu/. MISIN is a regional effort to develop and provide an early detection and rapid response resource for invasive species in the Midwest region of the United States. The effort is led by researchers at the Michigan State University Department of Entomology Laboratory for Applied Spatial Ecology and Technical Services. The goal is to assist both experts and citizen scientists in the detection and

identification of invasive species. Data collection allows for the development and implementation of effective control strategies in the region.

MISIN Midwest Invasive Species Information Network

For more information on invasive species control efforts in the state of Michigan through the Michigan Invasive Species Coalition, visit www.michiganinvasives.org. This website lists contacts for local partnerships that often have resources to assist with invasive species education and management. The site also provides links to maps and reporting as well as updates on ongoing research and a forum to discuss invasive species issues with other landowners and experts.

MInvasives
Michigan Invasive Species Coalition

This inventory was completed by Huron Pines, the fiduciary organization for the Huron Coastal Invasive Species Network and Huron Heartland Invasive Species Network. We encourage participation in invasive species management as well other Huron Pines programs by sharing your invasive species and other natural resource priorities at annual meetings. To learn more about Huron Pines programs, staff, events, or to make a donation to ensure healthy water, protected places, and vibrant communities, visit www.huronpines.org or follow us on social media.

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Additional Notes from the 2020 Black Lake Survey

Through this project, Huron Pines was able to additionally partner with Onaway State Park to conduct a more thorough inventory of the park's shoreline on foot as well as hand remove several invasive species sightings. The 2020 survey map below showcases the findings at Onaway State Park which include purple loosestrife and spotted knapweed. All of the Purple loosestrife sightings on the park's grounds were hand removed in 2020.

When reviewing the maps below, please keep in mind that the 2020 map only shows the new locations found in 2020, the 2019 map shows the original locations identified. These maps may be combined to show the overall status of invasive species on Black Lake as of 2020.

Maps

Figure 1a. 2019 Invasive Species On Black Lake

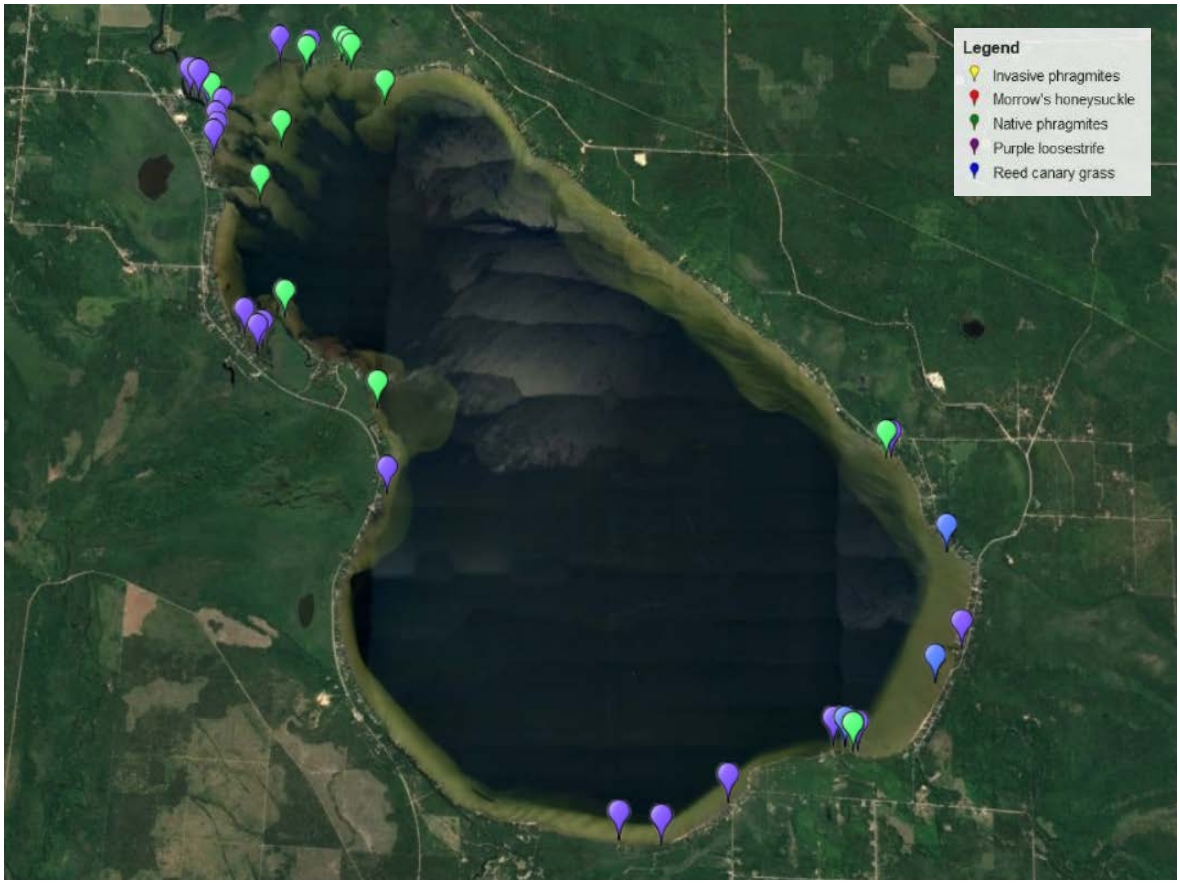

Figure 1b. 2020 New Invasive Species On Black Lake with State Park Focus