Aquatic Invasive Species (AIS) Survey/Analysis

Silver Lake

Barron County, WI
WBIC: 1881100
June/August, 2018

Survey and analysis conducted by Ecological Integrity Service, LLC
Amery, WI

AIS Survey-2018
Silver Lake, Barron County WI

An aquatic invasive species (AIS) survey was conducted on Silver Lake, Barron County WI in June and August, 2018 to evaluate the presence of aquatic invasive species present in Silver Lake. The survey included a meander survey in June and August, as well has installing sampling plates and using plankton tows for zebra mussel monitoring. Silver Lake is a 331 acre seepage lake with a maximum depth of 91 feet. The lake is classified with a trophic status of mesotrophic.

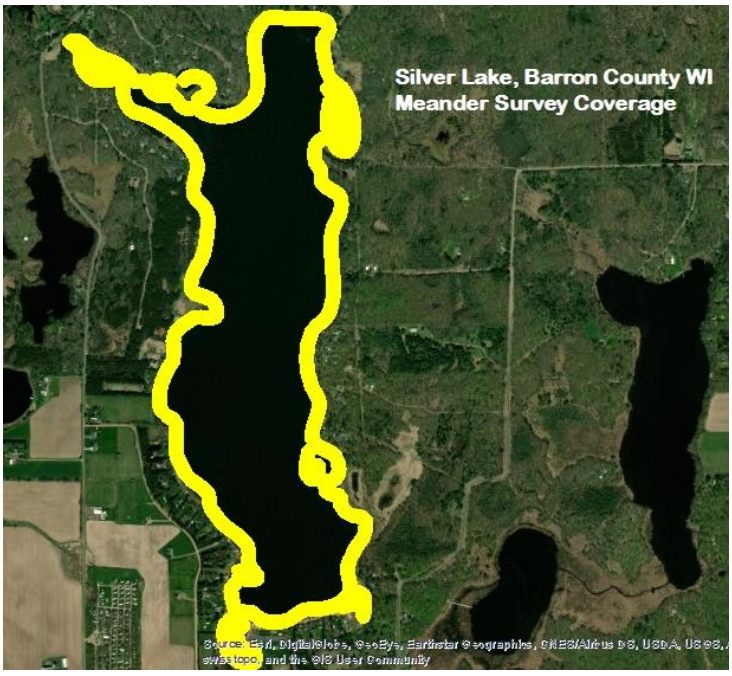
Methods

A June survey was conducted to focus on presence/absence of *Potamogeton crispus*-curly leaf pondweed, which grows in early spring and typically senesces by July. The survey was done in June so as to catch potential curly pondweed around peak growth. Other AIS species were surveyed as well.

The early season survey entailed meandering around the littoral zone of Silver Lake and sampling any suspect plants with a rake to verify. In addition, a surface viewing scope as well as a HD underwater camera was utilized to help check areas of concern. Special attention was paid to bays with high nutrient sediments, piers with boats, and boat landings. In addition, 4 substrate plates were installed around the lake for zebra mussel monitoring.

The August (late season) survey included surveying for invasive plant species as well as zebra mussels (*Dreissena polymorpha*). The same methods were used for the meander survey in June. For zebra mussel monitoring, the four plate samplers were retrieved and evaluated.

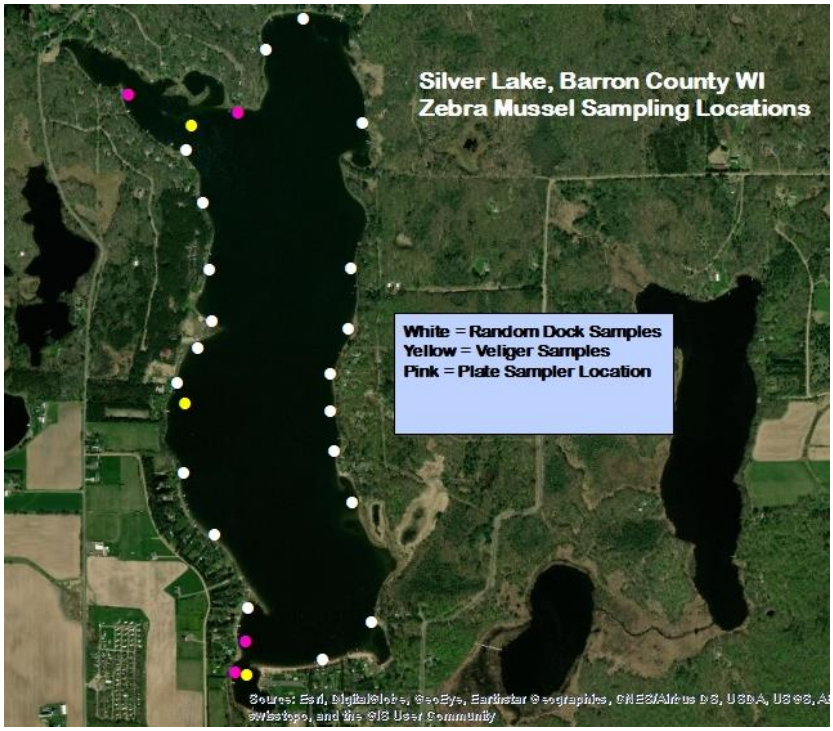
The Map below shows the areas monitored in the meander survey:



Three locations were sampled for veliger mussels (larvae mussels) using a 30 cm diameter, 60 micron mesh plankton net. Since Silver Lake has high water clarity, five plankton tows were completed at each location, with the samples combined into a concentrated sample for each of the three locations. Each sample was preserved with 4 parts 95% ethanol to 1 part sample solution.

Twenty random piers were evaluated for evidence of adult zebra mussels attached to posts, ladders and/or motors on boats. A surface viewing scope and a HD underwater camera were used to evaluate the piers/boats.

The map below shows the locations of the various mussel monitoring methods/devices.



Results

The early season survey resulted in the detection of a few areas with limited reed canary grass (*Phalaris arundinacea*). There is a cultivar of this grass from Europe that is not native. It is very common in wetland areas, especially in disturbed areas of the lake, such as areas developed. Most of the suspected reed canary was located adjacent from the shore out of the lake bed. A couple of locations were within the lake bed or wetland connected to lake bed. Reed canary grass is not often managed unless an area is restored and this non-native grass encroaches on the restored site. This is likely due to the common, widespread presence of reed canary.

The map below shows three reed canary sites. The red areas were vouchered and verified as reed canary grass. There were some other suspected sites viewed from a boat and suspected as reed canary but was not sampled and verified in these other areas. If Silver Lake has a major concern, all reed canary sites can be verified if needed. No areas were high in coverage or density, with most being very small clumps near docks and other small disturbed areas. The presence is noted but coverage is of low concern at this time.

No other plant species that are non-native/invasive were sampled, observed or suspected. This does not mean there is no chance for AIS, but the coverage is not extensive enough that they were observed and if present growth would be very limited.

The zebra mussel monitoring resulted in no evidence of zebra mussels. The plate samplers had no adult mussels and not mussels were observed on the 20 random piers. Plankton tow veliger samples sent to the Wisconsin DNR were reported as negative; no veliger mussels present in any of samples submitted**.**

It is recommended that the Silver Lake Board suggest pier owners inspect their posts, ladders and boats for adult zebra mussels when these are removed in the fall. Any suspected sampled could be collected and verified. It is also recommended that some education be conducted on AIS so more lake users can be observant for AIS species. Lastly, AIS surveying efforts should continue along with a robust Clean Boats/Clean Waters monitoring program in future years. The best way to mitigate AIS is to not have them introduced, and if they are introduced, respond as quickly as possible. Therefore, early detection is paramount.