



GOLDEN SANDS

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Conservation That Works!

Weyauwega Lake, Waupaca County CLP Point Intercept Survey June 6th and 7th, 2019

Mr. Van Epps,

A Point Intercept Survey (PI Survey) for curly-leaf pondweed (CLP) was completed on Weyauwega Lake on June 6-7, 2019. The survey was completed by Golden Sands Resource Conservation & Development Council, Inc (RC&D) staff Anna Cisar and Chris Hamerla. The purpose of the survey was to better understand the population of CLP in Weyauwega Lake. CLP has been abundant in the lake and a PI survey is needed to develop a potential management plan.

Benefits of Aquatic Plants

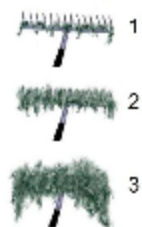
Aquatic plants are an important part of the state's wet ecosystems. They produce oxygen and help protect water quality. They help clarify water in wetlands, lakes and rivers by using nutrients like phosphorus and nitrogen that might otherwise be used to produce algal blooms. Aquatic plants help reduce wave action and current flow which reduces shoreland erosion and helps stabilize sediments in the waterbody. Perhaps most apparent, plants provide food, shelter and habitat for fish, invertebrates and all sorts of wildlife. Finally, diverse, healthy plant communities can help prevent invasive species from establishing. Invasive species are more likely to become established in disturbed areas.

Aquatic Invasive Species

Aquatic invasive species (AIS) are plants or animals that are not native to a particular area and dominate an area where they are introduced. They can be very successful because they fill a niche that isn't occupied, are able to tolerate a wider range of living conditions, they don't have any natural predators or diseases or perhaps they begin growing earlier. Eurasian watermilfoil, CLP and purple loosestrife are common examples of AIS. AIS can threaten an area both ecologically and economically. They can disrupt food chains and degrade habitat which negatively impacts fish, invertebrates and wildlife. Nuisance levels of AIS can reduce or even prevent recreational opportunities like fishing, boating, wildlife watching, etc... These reduced recreational opportunities have negative impacts to the local and statewide economy. AIS such as zebra mussels can negatively impact water quality, food chains, aquatic habitat, recreation and industry. Unfortunately the effects of AIS are difficult to foresee since the degree of impact can vary greatly from one place to another. One system may be completely taken over by AIS while AIS in another nearby system may become a part of the community and have little to no negative effects.

Point Intercept Aquatic Plant Surveys

Illustration of
Rake Fullness
Rating



Typically Point intercept (PI) surveys are done in July or August to capture the lakes aquatic plants at the peak of their growing season. However, CLP is unique in that it prefers cooler waters and dies off when waters warm, usually around July 4th; therefore a PI survey to capture the true population of CLP needs to be done earlier in the growing season. This is also why the only plant recorded during this survey is CLP.

PI surveys are completed by traveling to predetermined GPS points across the lake. Each PI lake map is based on the area and depth specific to that lake. The maps with GPS coordinates are obtained through the WDNR. Using a GPS, staff traveled by kayak to each of the GPS points. At each point a two-sided rake was used to sample roughly a one foot area of the lake bottom. Sediment type (sand, rock or muck), water depth in half foot increments and the aquatic plant community was recorded. Once the rake is brought to the surface the amount of plant material on the rake is assessed and recorded. The overall fullness of plants on the rake is rated a one, two or three (see illustration to the left). CLP is then ranked using a one, two or three. All data is recorded on the PI worksheet. Plants seen within six feet of the sample point are recorded as a “visual”. To learn more about PI sampling methods and how data is collected please visit:

<http://www.uwsp.edu/cnr-ap/UWEXLakes/Documents/ecology/Aquatic%20Plants/PL-Protocol-2010.pdf>

Frequency of occurrence is the percentage of time a species is found out of the total number of points sampled. Not all sample points are capable of supporting plant growth. *Littoral frequency of occurrence* is how often a species is found out of the total number of points that support plant growth. (Shown in Table 1) The deepest depth where plant growth is found is called *maximum depth of plant growth*.

It should be noted that plant species and locations may differ from year to year. GPS coordinates are accurate only within twenty feet and plant communities can shift. Table 1 represents only those species which were detected on the rake during the survey.

Table 1. Lake Survey Summary

Common Name	Scientific Name	% Littoral Frequency of Occurrence	Maximum Depth of Plant Growth
*Curly-leaf Pondweed	<i>Potamogeton crispus</i>	19.2	9

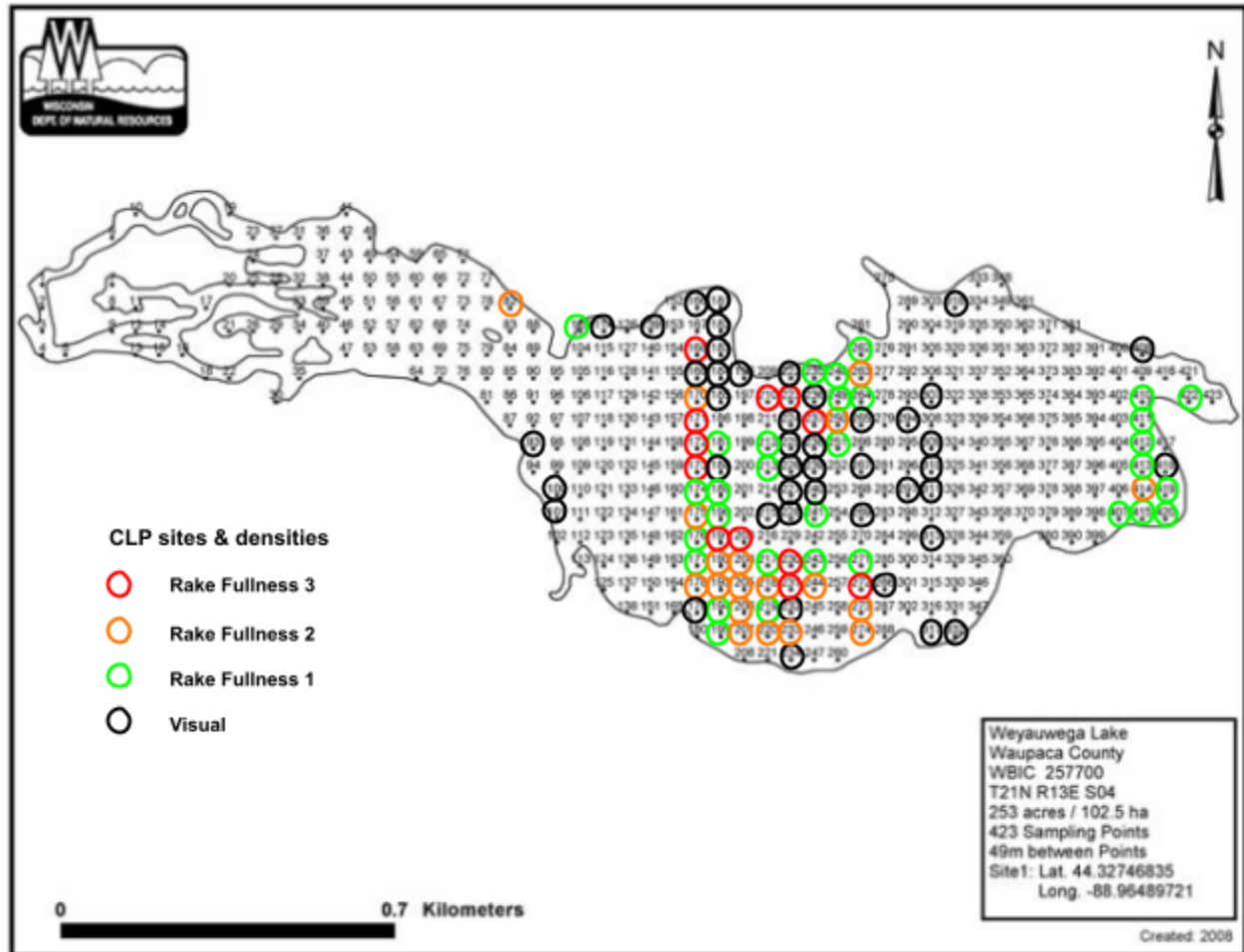
% Littoral frequency of occurrence: This is calculated by taking the total number of times a species is recorded divided by the total number of points in the lake where plant growth is possible.

* means a non-native species, potentially invasive.

Curly-leaf Pondweed in Weyauwega Lake

Figure 1 illustrates the locations and densities of CLP within Weyauwega Lake. Weyauwega Lake contains 423 sample points, of those 62 had CLP on the rake and another 44 points had visuals of CLP. While it does not appear to be like the majority of the Lake has CLP it should be noted that while 328 sites were surveyed there were another 95 sites that were non-navigable (not accessible).

Figure 1: CLP Sites and Densities



If there are any questions regarding the PI survey or results please contact Golden Sands RC&D, Anna Cisar, anna.cisar@goldensandsrccd.org (715) 343-6215