

Field Conditions Report

Lake: Meadow Lake, Oakland County, MI
Date of Observation: 25 June 2015
Activity: Section 8, LakeScan™ Lake Condition Survey Update

Key Points of Observation

- ~ A comprehensive Section 8, LakeScan™ survey was performed on Meadow Lake on 25 June 2015. The lake was treated with Clipper and copper sulphate on 28 May. This June survey will help serve as baseline data and to help make future best management practices decisions.
- ~ The clarity of the water was fair to good making it possible to observe plant growth at 8' to 10' water depth. Meadow Lake has very little plant biodiversity due to the significant nuisance level growth of starry stonewort. Starry stonewort dominated plant production and is so significant that only two other plant species were observed in the lake. Basically the entire lake is covered with starry stonewort.
- ~ Fortunately there were no other invasive plants observed in the lake at the time of this survey. Small scattered floating mates of green algae were observed along shorelines.
- ~ The starry stonewort and other plants showed signs of herbicide stress.
- ~ Starry stonewort is the primary determinant of overall lake conditions and water clarity.

Narrative

Skies were cloudy, wind was light, and the air temperatures were near 70° F. Water levels were near normal. Surface water temperatures ranged from 72° to 74° F during the course of the Section 8 survey.

Starry stonewort has totally dominated the Meadow Lake ecosystem.

For this reason, starry stonewort must be targeted using more algae specific treatments to help stabilize the lake ecosystem.

Proximal Management Objectives and Prescriptives

The Meadow Lake ecosystem has obviously become destabilized by the complete domination of the submersed aquatic plant community by the highly invasive and opportunistic exotic weed known as starry stonewort. Current technology dictates that the only sustainable or reasonable goal for the Meadow Lake management plan is that the ecosystem be stabilized by promoting the diversity of the biological communities that inhabit the lake. Starry stonewort will destabilize the lake since it is capable of extirpating other more beneficial aquatic plant species and limit the biological diversity of the submersed plant community which increases ecosystem resilience and stability. Since starry stonewort is ecologically opportunistic and thrives where ecosystem disturbance is high, proximal management objectives are only supported by methods and strategies that are precisely targeted at starry stonewort and cause as little collateral ecosystem

disturbance as possible. Fortunately, starry stonewort is an algae and can be precisely targeted resulting in very little impact on desirable plants in Meadow Lake. The use of a herbicide, Clipper, is contraindicated in this lake because it can have negative impacts on desirable plant species. The proximal objectives of the current management plan demand that interventions encourage the growth of desirable plant species and suppress the production of starry stonewort. Conditions in the lake may decline initially, because other opportunistic species may capitalize on the disturbance that has been created by the dominance of starry stonewort. However, prudent management with constant consideration of the overall lake management plan objective should help to establish a more desirable submersed aquatic plant community where greater biological diversity will stabilize critical ecosystem functions. This may take five to seven years. For now, the use of herbicides must be minimized in Meadow Lake to meet the demands of a sustainable management goal. A combination of algaecides must be applied to the lake to precisely target starry stonewort and prevent collateral damage to higher plants. The suppression of weedy higher plants may once again require the use of selective aquatic herbicides to improve the submersed aquatic plant community, but it is important that area be created for some form of higher plant growth before herbicides are used in the lake.

Survey Map – Meadow Lake

