Brant lake 1st year summary

Hello patrons of Brant Lake! We have completed our first year of water quality monitoring for the comprehensive lake management plan. If you do not know what has been going on with my project, let me provide you with a brief overview. The Brant Lake association, in conjunction with the Town of Horicon, reached out to SUNY Oneonta in order to complete a comprehensive lake management plan. What does this plan do for the lake you might ask? Well simply put, this will be the guideline for long term health and use of the lake. The plan will address current water quality, ecological and recreational issues facing Brant Lake and outline strategies to mitigate consequences associated with said issues. One of the main parts of the plan is monitoring the water quality of the lake.

Lake water quality monitoring commenced on October 18th 2014 and has continued every two weeks (as weather permitted) to the current date. On these water quality trips, we examine temperature, oxygen, conductivity (how many ions are in the water), pH, water clarity and various nutrients (phosphorus and nitrogen). Along with these parameters, we also monitor alkalinity (the measure of how easily pH can change), Calcium (this pertains to potential zebra mussel growth), chlorides (how salty the water is) and chlorophyll a (a measure of how much algae is present). Each of these parameters helps tell the story of Brant Lake and its water quality. While all of these will be discussed in great detail in the State of the Lake Report (a part of the management plan), for this update we will focus on only a few of them: phosphorus, chlorophyll a and water quality.

Phosphorus is one of the main ingredients for all life, specifically for lakes and ponds, it is what algae and plants use to grow. A lake with a lot of phosphorus (over 20µg/l) is at risk for excessive algae growth, which could lead to nasty “green paint” like scum on the surface of the lake. In some extreme cases, certain algal growth may produce toxins harmful to pet and human health. I am happy to report that we have not recorded any phosphorus readings from the surface over 20µg/l. Most of our readings range from 4-14µg/l with a couple readings being below detection (the levels were so low, our equipment couldn’t detect them!) Chlorophyll a, which is a surrogate measure for the amount of algae present in the water have been extremely low at the surface as well. Chlorophyll a levels greater than 10µg/l indicate lakes with excessive algae growth. Brant Lake’s surface chlorophyll a readings range from below 1-8.9µg/l. Water clarity, measured using a secchi disk has been excellent, ranging from 4m (12 feet) to 7m (21 feet), meaning there is little in the water stopping light from penetrating deeper. If there was a lot of algae present, the water clarity readings would in most cases be lower. Looking at these three parameters, it is safe to say at this point, algal growth in Brant Lake is minimal, which is great news for the health of the lake.

Besides water quality, we have been involved in many other aspects of the lake, dealing with ecological and recreational issues facing Brant. We have worked closely with Luc Aalmans and Tom Wynne dealing with the Eurasian watermilfoil battle, providing scientific information and real time GPS locations of milfoil in the lake. Part of the plan will be to examine current milfoil management practices and provide suggestions for future strategies based in current scientific understanding. Aiding this will be the completion of a map of the bottom of Brant Lake. This map should provide the Aquatic Invasive Management (AIM) divers with a better understanding of Brant Lake’s habitat as it relates to plant growth. We have also been involved with Harvey Leidy and the aquatic invasive species prevention program, providing suggestions and insights as to how to keep invasive out of Brant Lake. Erosion control, land use best practices and clean septic systems strategies will be discussed in the plan as well.

In the next few months, there will be two large scale projects taking place besides routine water quality. First, is a survey of the fish of Brant Lake, specifically an evaluation of the game fish of Brant Lake (bass, perch, crappie etc.). This will give us an idea on what fish are in Brant and their size. Secondly, we are going to be sending around a survey to all of the members of the Town of Horicon and anyone who resides within the Brant Lake watershed. The goal of this is to assess how you like to use Brant Lake, your observations about the lake, and any issues you may have.

In summary, Brant Lake's water quality is indicating a strong, low nutrient environment. A key part of the management plan will address how to keep Brant Lake at this state, protecting it from future negative influences. Along with this, guidance for continued invasive plant management and invasive species prevention guidelines will be included.

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