Comments to Twin Lakes Comprehensive Management Plan (3/31/2022)

WDNR Official Comments: Ted Johnson (Water Resources Management Specialist)

Comment Key:
Responses in blue by Todd Hanke (Onterra)

The department has review your draft lake management plan for Twin Lakes in Marquette County. The plan is well written and provides a lot of good information about the current state of the lakes.

Please consider the following comments:

1. You may be underestimating the potential for nitrogen inputs from septic systems. Please see *Data from Tri-State Water Quality Council, 2005 and EPA 625/R-00/008.* The studies completed as part of this project would not specifically answer this. We suspect high nitrogen is likely coming from ground water as is often the case for lakes in this region of Wisconsin. If septic systems were contributing to nutrients, we might expect higher phosphorus levels as well, which were not measured. Regardless, we added some text regarding the uncertainty of septic inputs on page 20.
2. Data being compared between growing season versus summer. What is the relevance of comparing the average of summer water quality values versus that of the growing season. If seasonality is of interest wouldn't it be better to compare Fall or Spring data to the summer months? Chl a sampling, is designed under WisCALM to take place between July 15 – Sept 15 or the worst period for elevated levels. For this analysis, the reason that growing season and summer are both displayed is so that the summer values can be compared to ecoregion and state median values that are determined solely on summer values. We did not find a large difference in parameters between the two timeframes, so we do not expect large inputs of nutrients during spring and fall turnover. No edits made.
3. Figure 3.1-11: add units for temp and DO. Change made, same edit to 3.1-12 also.
    a. There is concern about the goals for EWM and CLP management on the system. The lake group has shown a strong interest over the last several years to conduct herbicide treatments. This Plan utilizes a progression of AIS management that starts with monitoring and small-scale hand harvesting in select sites within the footprint of individual riparian properties. If populations are found to increase to impact navigation and recreational use, then the Plan outlines a process by which the TLC would consider larger scale management.
    Also added a paragraph on page 68 that describes the results of a late-season 2022 EWM mapping survey which was added to this project.

    b. What would constitute a nuisance level of EWM and CLP? Added the following text - Ways of documenting these impacts could be through the observation of dense or surface matted plants by way of photographs or a professional mapping survey that indicates these conditions.

    c. We are unclear what conditions would need to be present to warrant herbicides or other control techniques. The Plan states that if AIS populations are too large or dense to be reasonably addressed by a hand harvesting effort, then an herbicide strategy would be considered. Further, herbicides would only be considered when documented

impacts to navigation or recreation occur. Until water quality conditions improve, we would be concerned with any proposal to undertake large scale management.

d. We would like you to discuss the risk of AIS control and how that could result in a further decrease of lake water quality. Any additional loss of native plants could cause reduced water clarity which would further impact macrophytes and favor algae. I added some text on page 90 of the IP plan stating that a risk assessment would be a part of a control and monitoring plan report if the TLC is considering AIS management.

e. I cannot speak for DNR – fisheries, but it may be wise to hold off on any further herbicide treatments until we know what if anything can be done about carp. This could involve a study, implementing control efforts or nothing. I would like to see water quality improve along with some restoration of the plant community (densities, diversity, etc) prior to adding any additional stressors to plants (i.e. herbicides, DASH, etc). If carp control turns out to be not feasible or not implementable, then the TLC will need a plan to conduct aquatic plant management if warranted in the future.

4. We'd like to see more information about efforts to restore aquatic plants. Would you consider, when the time is right, to try planting select native species to boost diversity? Can WDNR provide guidance on how to implement this? This is challenging to find native plants to use and the reality of such a project is difficult. It would seem that the right time to do this would be after the carp population is addressed and either eliminated or greatly reduced within the lakes. I think the group would be open to this sort of thing with the right guidance, but it is likely something that is on the back-burner until the carp issue is resolved. Native plant populations would be expected to increase naturally with the removal of carp from the system, which may mean seeding or transplanting natives might not be necessary. No edits made in the document.

Thanks for all of your hard work on this plan. Please let me know if you have any questions.

Ted

WDNR Official Comments: Adam Nickel (Fisheries Biologist)

. I was able to look through the plan. Its great that we have some recent water quality and vegetation survey work to reference to now. One thing that I think may be worth pursuing is a aquatic plant enclosure/carp exclosure project to further evaluate the impact of common carp on vegetation growth and turbidity. This would include staked test plots with no treatment, snow fence, and filter fabric. In some cases, test plots could include vegetative plantings, I am not sure if that would be needed in this case, but something to discuss. Ted has ran many of these projects before and could provide more input here. I think this type of project would be a good way to identify common carp impacts on water quality and vegetation growth and would be very useful for evaluating control/removal options.

The next rotational year for fish survey work on Twin Lakes is 2024. However, with the last survey work conducted in 2015 and there being questions about the current fisheries status I may try including Twin Lake in our electrofishing surveys this year so we have updated fisheries information to work from. This would include conducting a spring bass/panfish electrofishing survey to evaluate gamefish/panfish populations and also a summer carp electrofishing survey. The summer carp electrofishing survey would be aimed to get catch effort for carp that we can convert into abundance estimates based on methodology in Bajer and Sorensen (2012).

A aquatic plant enclosure project and updated fisheries survey information should give us the information needed to evaluate common carp control and removal options. Depending on the results, these options could include a rotenone treatment, conservation cooperative agreement for removal, or other potential options. These are my first thoughts on this, let me know if you would like to get a meeting on the calendar.

Thank you for taking the time to look this over. Carp exclosure studies have been done in some lakes in this region including an estuary of the Big Green Lake system. I think this has been fairly well studied and we would have a pretty good idea of what to expect in Twin Lakes. I guess I'm not sure of the utility of this type of study as a means to determine carp control options?

Were you able to get a fisheries team on the lake this spring? Any initial results of that available? Is there a carp specific survey scheduled for this summer?

Hi Todd, we were able to conduct a bass/panfish electrofishing survey this spring. Overall, we were impressed with the catch, much higher panfish and bass numbers than the last survey in 2015. We shocked along the entire shoreline and sampled over 150 bluegill with most fish ranging 4-8 inches (largest measured 9.2 inches) and 91 yellow perch mostly ranging 5-8 inches (largest measured 10.2 inches). A few black crappie and pumpkinseed were also collected. There were 182 largemouth bass sampled, mostly ranging 7-12 inches with 17 largemouth bass that were greater than 14 inches including a 20.2, 20.7, and 21.2 inch fish. We also sampled 23 common carp that were 11-18 inches. We were able to see the bottom (2-4 feet) for most of the survey. The higher water and lake refill that has occurred the last few years seems to have flooded out some new vegetation and woody habitat that is providing some great fish habitat, that may be some of the reasoning for the improved fishery. It looked like the lake has come down around a foot or so from the high water mark on the trees.

Thanks for the update Adam, glad to hear that WDNR was able to get on the lake this year. Good to hear that the fishery seems improved, I could certainly see how so much flooded woody habitat would benefit the fishery.

In our draft management plan we discussed why we believe carp have been causing negative impacts to the aquatic plant population and water quality on the lakes. Does the 2022 fisheries survey yield data that would lead you to supporting managing carp in Twin Lakes?