

2023 Data Collection Project-DNR Boat Accesses on Higgins Lake

Purpose of the project: After years of discussion with the DNR about their boat accesses, we believe that the South State Park boat access lagoon acts as a spreader of our two existing aquatic invasive species (AIS) plants and a potential incubator for new AIS plants. This is in contrast to the West Access and the access at the North State Park that both launch directly into the lake and do not involve a lagoon. However, we had no quantitative data to contrast the risk probabilities. The two existing AIS plants are Eurasian water milfoil and starry stonewort. Among the potential new AIS plants are curly leaf pondweed which was recently discovered in Houghton Lake and even more dangerous hydrilla which was discovered this year for the first time in Michigan in a small lake down state.

The DNR currently rely on signage as their primary protection against new AIS's. There is little or no supervision at the access sites for the purpose of inspecting arriving boats even in peak usage periods. Our data collection project is intended to indicate practical ways to reduce AIS risks.

Types of Data Collected: Arriving Boats: A total of 449 boat operators were interviewed as they arrived at the three DNR accesses. The interview took place on four separate weekend days at each of the three accesses. The survey included:

1. Whether the boats were used exclusively (or near exclusively) at Higgins Lake or if not, where.
2. If used elsewhere in the previous 10 days, has it been power washed?
3. Checked for visible weeds on the boat or boat trailer.
4. This data was used to determine the frequency boats and/or trailers arriving with weeds and their home base. Non-Higgins Lake boats are a potential source of new (AIS) plants for Higgins Lake.

Parked Boat Trailers: 2,166 boat trailers were inspected for the presence of visible weeds after boat launching at the three DNR Accesses. The data was collected on 13 weekend days and about the same time of day at all three accesses. The data was collected by hand held counters while walking or driving through the parking lots. The assumption is that if the boat trailer has visible weeds in the parking lot, the boat also may have carrying weed fragments into the lake. Evidence to support this assumption is the close correlation between popular sand barring sites and the HLF DASH boat harvest reports of AIS plants. The number of parked boat trailers at each site indicates the relative usage between the three DNR accesses during peak periods.

Parked trailer data was also collected at the Gerrish Township Marina, Kelly Beach, Maplehurst, and the Lyon Township Boat Access at Sam-O-Set. This data was collected to determine relative usage at these sites compared to the DNR sites and the risks for new AIS plants.

Departing Boats and Trailers: 210 boats were observed leaving the South State Park and 14 at the West Access. No data was collected at the North State Park. This data indicates the risk of Higgins Lake AIS's being spread to other lakes. More attention was paid to the South State Park because of the significantly higher percentage of parked boat trailers with visible weeds compared to either the North State Park or West Access.

What Does the Data Tell Us: In terms of the risk of a new invasive species, the three DNR accesses are far and away the most likely place for new AIS plants to enter the lake. Based on the data collected the only other likely place is the Gerrish Marina where one parked trailer out of 18 was found with visible weeds. That trailer might have arrived with weeds or picked it up while launching.

1. Of the three DNR Accesses, the South State Park has the highest usage and highest percentage of arriving boats/trailers with visible weeds. That results in the highest probability for new AIS plant entry at 75% compared to 21% for the North State Park and 4% for the West Access. The South State Park creates three times the risk of the other two accesses combined.
2. In terms of the risk that parked trailers with visible weeds indicates for spreading existing weeds within the lake, the South State Park with the lagoon has 85% of the risk compare to 15% combined for the other two with direct launch access into the lake.
3. In terms of the risk to other lakes from boats leaving Higgins Lake with visible weeds, the South State Park with the lagoon creates the most risk. A rule of thumb that holds true to the data from the South State Park and the limited data from the West Access is that the leaving average with visible weeds is at least twice the percentage of parked trailers with weeds. That would indicate 50% of boats and trailers leaving the South State Park have visible weeds, 3% for the North State Park and 14% for the West Access.

(The worst example was on September 3 when 77 of 100 boats and trailers departing the South State Park tie-down area had visible weeds.)

4. Another learning from the data is that a large majority of boats launched at the three DNR accesses are local boats, 75% at South, 74% at West and 57% at North. Many boat operators commented that they always use the same access. 9.5% of arriving boats/trailers at South had visible weeds compared to 2.5% at North and 0.7% at West. The higher percentage of boats leaving the South State Park with weeds may contribute to the high percentage of arriving boats/trailers returning with weeds.

Recommended Action Steps: The current actions steps being taken by the DNR at their access sites along with the Higgins Lake Foundation in the lake appear to be keeping Eurasian Watermilfoil and Starry Stonewort in check. It is critical that those actions continue indefinitely. The actions include the DNR usage of DASH boat harvesting and chemical spraying at the three access sites and the HLF DASH boat harvesting elsewhere in the lake.

The only current defenses for new invasives are ample signage at all access sites, available boat washing stations and the knowledge by users of the DNR “Clean, Drain and Dry” message program. The arrival surveys indicates that most access users are aware of those recommendations. However, without supervision, usage of the boat wash stations is disappointingly low as are usage of the cleaning tools at the exit tie down areas. The trailer mounted vacuum and blower cleaning station at the West Access is rarely used.

The lagoon at the South State Park was created in the early 1960’s before the threat of invasives to inland lakes was much of a consideration. From the data collected, the lagoon increases all invasive risks. It serves as a spreader of the existing invasives in the lake and a potential incubator for any new ones.

1. There are at least two options that would reduce the new AIS risks from the lagoon. The first is supervision at the arrival site. Complete coverage of every operating hour (like at Glenn Lake) would reduce 75% of the risk of new invasives entering Higgins Lake. Any visible weeds would be removed at the boat wash before entering the lagoon. Lesser periods of supervision coverage would obviously reduce the benefits. However, the cleaned boats would still enter the

lake through the lagoon and potentially spread the existing AIS plants from the lagoon into the lake.

2. The second option is to eliminate the lagoon and redesign the launch facility for direct access into the lake like the North and West Accesses. If South access matched the combined performance of the North and West accesses, the risk of new invasives would be reduced by 50% and the potential spread of existing invasives by 65%. This would also significantly reduce the risk of spreading invasives to other lakes. Eliminating the lagoon plus adding supervision in peak periods would be an even better solution.
3. The West Access was essentially unsupervised during the summer of 2023 and the trailer mounted boat cleaning station was rarely used. The control hut should be staffed at least in peak periods with a mandate to check arriving boats for visible weeds and to request weed removal before entering the lake.
4. At the North State Park, all arriving vehicles stop at the entry office and are checked for a state park pass. At that same time, staff should check for visible weeds and request weed removal before entering the lake.
5. Improvements can also be made at the other non-DNR accesses to minimize risks. Gerrish Township can implement a procedure to inspect all daily fee boats for visible weeds and remove them before launch at their onsite boat wash. HLPOA and HLF will work with the other non-DNR access to encourage steps to further reduce AIS risks.