**Search for Eurasian water-milfoil on Black Oak Lake 2021**

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Walt Bates, Dirk Meyer, Mary Jo Zane, Cindy Miller and I boarded Walt’s pontoon boat on 24 September 2021 to search for aquatic invasive species, and especially Eurasian water milfoil (EWM) on Black Oak Lake. The weather was chilly, but good until the forecast clouds and rain moved in around 3. Walt was called away for much of the day, but the rest of us carried on, with Dirk’s excellent piloting. We found no EWM or any other invasive species.

The lake was sometimes calm enough so that I could stand on the edge of the pontoon boat and look into the water and see the plants. But most of the day I used the Aqua Scope attached to the boom my facilities manager had created to support the Scope. We crisscrossed the west bay and Barber’s Bay and did one pass along the north and south shores. We were able to cover all the visible parts of the lake in just one day. As in other years, we found some EWM look-alikes, including northern water-milfoil, water marigold and alternate-flowered water-milfoil. I pulled up northern water-milfoil and water marigold a few times to convince myself it was not EWM, as the northern water-milfoil in Black Oak Lake (and the water marigold in other lakes) often has a reddish tinge to the uppermost leaves and stems, as is also common with EWM. We found plenty of other native plants, including fern-leaf pondweed, wild celery and large-leaf pondweed (“cabbage”) indicating a healthy plant community.

I continue to see a healthy population of large purple bladderwort (LPB) in the far west end of the lake. Like common bladderwort, LPB is a carnivorous plant, and ingests small aquatic animals, especially zooplankton, to augment its nutrient supply. In some lakes, LPB forms floating rafts that interfere with recreation and can become a nuisance. LPB is abundant in much of the shallow west bay as well as in some parts of the north bay (northwest of the Annin property) but does not appear to cause any trouble. This plant does not have any roots, and it is unlikely to persist in any other part of the lake where it would be likely be windrowed onto shore.

I understand the lake level has dropped about 8” this summer, and changes in lake level may lead to changes in the plant community. The increase in LPB over the years may have been associated with increased water levels; I reported a large increase in LPB in 2017 after a sizeable increase in lake level from 2016.

Barber’s Bay is the part of the lake most vulnerable to invasive plants for several reasons. Winds are often out of the west, so winds could potentially carry invasive plants from the landing (where they are most likely to originate) toward Barber’s Bay. This bay has a rich diversity of native plants, which is good and bad. With such a density of natives, there is perhaps less “room” for an invasive plant to find space to root. However, the high density and diversity also means that aquatic plants are successful there, and likely EWM would be successful too, given a chance to get started. We should all be especially appreciative of the monitors’ (including Dirk and Cindy) diligence in combing Barber’s Bay many times each summer. Cindy reported that she assigned more monitors to Barber’s Bay because of its higher vulnerability. I understand it is hard to pick out EWM among all those other plants, and I appreciate everyone’s efforts. On our survey every year, we traverse this bay more than other areas to be as sure as possible it is free of any invasive plants.

It is critically important that everyone involved in the Clean Boats Clean Waters and the Vigilante program remain alert to invasive species throughout the open-water season. While we crisscross the lake and look hard for invasive species, the area I am directly observing is tiny compared to the entire lake. Everyone remembers the 2015 event when the dock removal team tried to get onto the lake laden with EWM. Your vigilance is paramount! You are famous in the Northwoods for being the lake most seriously guarding against the entry of invasive species.

Your lake-wide attention has obviously paid off. Remember to watch for EWM along the shoreline as well as in the water, since EWM, should it ever occur, will likely fragment and some fragments will wash up on shore. Thanks, everyone, and see you next year.