INDIAN LAKE
FREQUENTLY ASKED QUESTIONS

How did Indian Lake get to this state? Why do we have this problem and how did we get here?

Excessive aquatic vegetation is not unique to bodies of water in Ohio and across the country. Typically, only certain shallow sections of ponds and lakes experience excessive plant growth. However, Indian Lake is unique for several reasons: the shallow nature of the entire lake and the impressive clarity of the water has allowed for aquatic vegetation to grow to nuisance levels in most, if not all the lake.

Groups in the Indian Lake Watershed have worked for years to improve and protect the water quality of Indian Lake. This work is one of the most impressive success stories of watershed management in Ohio. The clear water allows for sunlight to penetrate the lake to the bottom of the shallow lakebed (less than 8 feet in most areas) fueling growth of the nuisance plants.

What types of plants are in Indian Lake?

Sections of the lake contain native, stable populations of aquatic vegetation such as American Pondweed, common waterweed, sago pondweed, bladderwort, spatterdock, and water lilies. The excessive vegetation includes the invasive plants Eurasian watermilfoil and Curly-leaf pondweed. Coontail, a noted native plant, has also reached nuisance levels in the lake. In July, Aqua Doc completed sonar mapping and sampling at more than 600 locations in Indian Lake in order to understand the abundance of each type of invasive plant in specific locations. Please reference the table below for species currently present in the lake. Those in red are considered invasive:

Common Name	**Species Name**	***ANCEDOTAL ABUNDANCE (ESTIMATE)***
Eurasian watermilfoil	*Myriophyllum spicatum*	High abundance
Coontail	*Ceratophyllum dermersum*	High abundance
Common waterweed	*Elodea canadensis*	Moderate-low abundance
Curly-leaf pondweed	*Potamogeton crispus*	Moderate abundance
Sago pondweed	*Stuckenia pectinata*	Moderate-low abundance
Brittle naiad	*Najas minor*	Low abundance
Water stargrass	*Heteranthera dubia*	Moderate-low abundance
narrow-leaf pondweed	*Potamogeton pusillus*	Low abundance
bladderwort	*Utricularia sp.*	Low abundance
American pondweed	*Potamogeton nodosus*	Low abundance

This information is critical to understand which plant is the problem in different areas of the lake. Treatment for each plant is different; some are resistant to herbicide application and can only be harvested; others can be managed by herbicides.

Why did ODNR hire Aqua Doc? Were universities consulted to help ODNR develop a long-term plan?

While ODNR is staffed with capable public servants with a wide range of knowledge and educational background, no one on staff has dealt with levels of aquatic vegetation like this. Therefore, ODNR decided to hire a professional consultant to collaborate with our team to develop the comprehensive lake management plan, something all parties recognized was necessary for Indian Lake. ODNR reached out

to several Ohio professors asking if experts would be interested in helping the Department develop a plan; they offered to help in any way but did not bid on the state's request for proposal. Following state purchasing procedures, ODNR put out a bid requesting a company gather the necessary data about Indian Lake and then develop a comprehensive lake management plan. Aqua Doc was the only company to submit a bid that met all requirements and per procedure was awarded the work.

Aqua Doc has other contracts with ODNR and with private individuals to treat and manage shoreline areas of the lake. There are a limited number of companies or individuals who can develop a comprehensive lake management plan; ODNR is confident Aqua Doc will complete the required work by January 2023, as required by the contract.

Why did ODNR focus on harvesting this summer as the short-term plan? Is the cost sustainable for the long-term?

ODNR has and will continue to be committed to exploring all avenues to eliminate nuisance vegetation and improve boating conditions at Indian Lake. Increasing the number of harvesters throughout the summer was the most efficient and effective way to immediately improve boating conditions, and many residents, visitors, and stakeholders have indicated this work has been successful. Harvesting began in April, and since June as many as seven harvesters have operated each weekday. As of August, more than 49,000 cubic yards of vegetation has been removed. ODNR, with the support of the General Assembly, has spent more than $1.25 million to operate state-owned harvesters or in contracts with private companies. These funds were necessary to immediately improve the boating conditions at Indian Lake.

ODNR contracted with Aqua Doc to develop a comprehensive lake management plan recognizing that harvesting of this scale may not be the most efficient use of resources. However, both Aqua Doc and other lake professionals have indicated that harvesting must be part of any long-term plan as some situations are best managed through harvesting.

Why are park areas being negatively impacted in order to collect and drop off vegetation?

Most of the areas we are impacting were historic dredge disposal areas (including Pew Island) and the immediate need of removing the vegetation and improving boating conditions on Indian Lake required the use of certain strategic areas. The Department intends to restore these areas to their original state.

Has ODNR sprayed herbicides on Indian Lake before? Are residents allowed to spray areas near their docks? How would a guest or resident know if herbicides are being applied?

ODNR staff sprays a few select herbicides to control vegetation at Indian Lake. These herbicides are applied by a licensed, trained DNR staff member with a DNR owned spray boat. DNR sprays public access areas such as boat ramps, beaches, campgrounds, courtesy docking areas, etc.

Private residents can hire Pond Management and AquaDoc to treat areas around private docks. Both companies are licensed professionals that utilize approved chemicals with approved method dosages. The companies are required to keep records and provide to ODNR as part of their special activity permit.

Herbicides are applied according to their label which may include posting warning signs before spraying. Private companies hired by residents inform those homeowners when they are performing the treatments.

What is ProcellaCOR? Was it sprayed at Indian Lake?

Florpyrauxifen-benzyl (ProcellaCOR) is registered with the EPA for aquatic use to treat Eurasian watermilfoil. The herbicide has a short contact exposure time and is broken down quickly in the water by light. ProcellaCOR is manufactured by SePRO and the herbicide is approved for use in Ohio. The proposal submitted by Aqua Doc in March in response to ODNR's bid offer included information about ProcellaCOR as a potential herbicide to be used to treat Eurasian watermilfoil.

July 12 and 13, Aqua Doc used ProcellaCOR in a 200-acre test area along the south/west bank near Lakeview Harbor at Indian Lake. This is in the open zone

area, which is not a designated swimming zone and was an unusable area for tubing/skiing due to the thick vegetation. The test was done to determine the effectiveness of using this specific herbicide and to monitor the lake conditions including reestablishment of vegetation, water quality, and potential harmful algal blooms.

Assessing the impact of the herbicide in a unique ecosystem such as Indian Lake is critical. If the plant dies too quickly, oxygen levels could decrease rapidly, causing a fish kill. If the plants decompose rapidly nutrient levels could increase, potentially creating a large harmful algal bloom (HAB). Indian Lake has worked for decades to prevent HABs and ODNR will take all efforts necessary to prevent one from occurring. HABs are a risk to public health, safety, and the environment and ODNR needs to use sound scientific data and best management practices to minimalize the conditions that cause HABs.

What is a Harmful Algal Bloom (HAB)? If it has never been a concern at Indian Lake, why is it a concern now?

Information about HABs can be found here. Information about toxicity levels and ways in which HABs can be harmful are available at this site.

Cyanobacteria, often called blue-green algae, are bacteria that are naturally found in Ohio lakes, ponds, and slow-moving streams. Although many species of algae do not produce toxins, some species of blue-green algae can cause Harmful Algal Blooms (HABs). HABs can produce neurotoxins (which affect the nervous system), hepatotoxins (which affect the liver), and dermatoxins (skin). These toxins can potentially impact the health of people who come into contact with water where HABs are present in elevated numbers.

Under the right water conditions, usually in the warmer months, the number of these blue-green algae can dramatically increase or "bloom." Some blooms can be visible as thick mats or scum on the surface of the water, while others can be present without visible surface scum. The mats or scum can vary in color and could be bluish-green to red in color. Nutrients levels at Indian Lake have historically been low enough that algae present in the lake do not produce a bloom.

The decomposition of plant material releases nutrients back into the water. If too

many plants are decomposing at the same time, the increased nutrients could fuel a HAB. A methodical approach of applying herbicides on smaller chunks over time will hopefully reduce the risk of HAB as opposed to applying to a large area at one time.

What are the effects of spraying ProcellaCOR? What effect does the application of any herbicide have on aquatic animal life in Indian Lake? Should people and dogs stay out of the lake for a certain length of time? Are fish/waterfowl safe to eat? Is the water safe for swimming?

The EPA concluded that Florpyrauxifen-benzyl has no risk concerns for non-target wildlife and is considered non-toxic to fish, mammals, birds, and amphibians. The EPA also has identified no risks or concern to human health.

Swimming is permitted 24 hours after DNR spray treatments. Posted signs indicate when spraying occurred and when it is appropriate to swim again. Beaches are monitored and any water quality advisories are posted on the beach as well as the beach guard website.

Fish and waterfowl are safe to eat.

What were the results of the test herbicide application?

Data collected in the test area showed no significant negative changes in both oxygen and nutrient levels. Aqua Doc indicates this is positive data that supports the use of ProcellaCOR as a tool as part of a comprehensive lake management plan.

August 16, the Department announced it will direct Aqua Doc to conduct an additional herbicide application in an area of Indian Lake with high concentrations of Eurasian watermilfoil. Data gathered from the initial treatment of ProcellaCOR showed acceptable results and the Department has determined another application of similar size and under similar conditions is appropriate.

Why are there only two options for homeowners to hire spraying?

The two options for homeowners to hire for private spraying, Aqua Doc and Pond Management, are the only two companies who applied for the necessary special activity permit from Indian Lake Park Office. Another company withdrew its application.

When will the comprehensive lake management plan be completed?

ODNR's contract with Aqua Doc requires the company to complete a comprehensive lake management plan by the end of January 2023, however we expect to have it much sooner. Data collection throughout the entire season was essential to developing a thorough management plan.

ODNR's stated goal was to implement short-term actions to increase boating conditions in the summer of 2022 and utilize the comprehensive long-term management plan to govern actions for 2023 and beyond. Once Aqua Doc fulfills its contract and submits a comprehensive lake management plan, ODNR will review and determine appropriate next steps, and implement those steps as soon as possible.

The Department will share its next steps and action items as soon as the comprehensive lake management plan is completed, reviewed, and a way forward is determined.

Will dredging be part of the comprehensive lake management plan?

ODNR currently has two dredges dedicated to Indian Lake and is examining all ways to increase dredging activity moving forward. Increased dredging requires securing additional areas to place dredged material and additional equipment and operators. The Department is already working to answer the necessary questions so if additional funds are secured, increased dredging can begin.

Analysis provided by Aqua Doc supports strategic dredging as part of a comprehensive lake management plan. Dredging would reduce components of various plants seed based in the lake, as well as reducing nutrient rich sediment

that aides in the excessive plant growth. Dredging alone will not solve the vegetation issue but is one of many tools we look to utilize as we move forward.

What can the residents to do help?

Cooperation between DNR efforts, residents, and those with a personal stake at Indian Lake will help combat the weed issue. Any weeds removed by homeowners from around their docks is appreciated, and there are drop off locations for this. The nutrient rich vegetation can be picked up for compost by any interested party. Homeowners can reduce phosphorus in the lake by not applying lawn treatments and fertilizers or choosing a zero-phosphorus fertilizer. Lake residents should not dump aquariums into the lake which may introduce invasive species.

Practice “Clean, Drain, Dry” techniques when moving vessels from one body of water to another.

Aqua Doc has indicated a citizen’s data collection initiative will be part of their proposed comprehensive lake management plan. Once introduced, ODNR will work to explain how residents can be part of this important effort.

Where can harvesting requests be made?

Requests for ODNR or private harvesters to focus on a specific area can be made by emailing Indian Lake State Park at Indian.Lake.Parks@dnr.ohio.gov.