

Reflections

Radisson Community Ponds

Upstate Freshwater Institute

Testing the waters

The Radisson Community Association (RCA) actively works to maintain the beauty and function of the ponds within the community. The Upstate Freshwater Institute (UFI) has been consulting with the RCA since 2014, offering professional insights to the water quality and maintenance of six ponds.

During the summer of the past six years, UFI has conducted monthly visual surveys at six ponds and collected water samples at Hidden Lake and Lake Oberon.

During the visual surveys, a UFI scientist identifies potential threats to water quality

including presence of invasive species, algal growth, and shoreline issues. The water collected at the two large ponds is brought to the laboratory at UFI and analyzed for total phosphorus and chlorophyll-*a* concentrations.

Phosphorus is a nutrient that is essential to the growth of plants (both aquatic and terrestrial) and algae. Chlorophyll-*a* is a pigment found within algae and measurements can indicate relative abundance of algae.

Read on for more information on the water quality of the Radisson Ponds, what to look out for, and tips for helping maintain the ponds!

Water Quality and Radisson Ponds

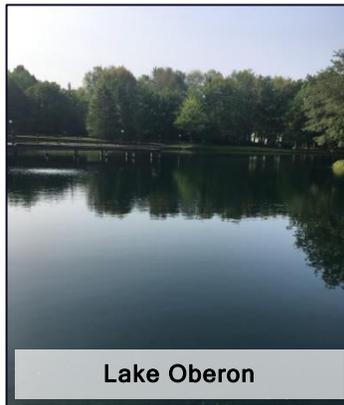
“Water quality” can be a personal perspective based on your desired use for the pond. There are, however, certain numerical thresholds that provide insight regarding the potential threats to the water’s appearance, usability by humans, and its ability to sustain

aquatic life.

Both Lake Oberon and Hidden Lake experience elevated chlorophyll-*a* levels between July and September. This indicates that algae are usually more abundant during this time. These levels also show that they can form algal blooms



Willet's Pond



Lake Oberon

The ponds and community are home to many fish, turtles, salamanders, birds, and insects!

Inside this issue:

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- HABs
- Invasive Species
- Pond History



Clare Park Pond



when it is warm and the air is still.

The ponds both receive stormwater runoff from the surrounding area, so the potential for nutrient loading is high. Concentrations show that both ponds provide plenty of nutrients for algal growth.

Phosphorus levels in Hidden Lake may be increasing over time!

This could be from a variety of factors, but we will continue monitoring it in order to fully understand it!

The Good, the Bad, and the Ugly of Algae

Filamentous algae - Mallard Pond



“Algae” is a very broad term that actually refers to many different types of plants that can convert nutrients in the water and sunlight into food, a process known as photosynthesis. Algae provide microscopic animals (zooplankton) with food and produce oxygen that allows fish and other animals to live in the water.

attached to plants and other substrates (epiphyton), and some live suspended in the water (phytoplankton). At all of these locations algae may form large accumulations or blooms.

typically harmful. These algae begin growing as benthic algae, then as oxygen is produced, bubbles cause them to float up to the surface.

Green algae come in a variety of shapes and can exist singularly or in large colonies. Many of the Radisson Ponds have visible filamentous green algae that form bubbling mats during the early summer. While unappealing to look at, these buildups are not

Blue-green algae are actually not algae at all, but bacteria known as cyanobacteria! They thrive in nutrient rich, warm, and calm waters. They often become more dominant in the later summer and can form blooms.

One way to identify algae is by where they live. Some algae are found on the bottom sediments (benthic algae), some are

Willet's Pond



Algal Blooms vs. Harmful Algal Blooms (HABs)

All different types of algae can produce blooms or form large masses along the surface of water. However, the key difference between a bloom and a HAB is the presence of cyanobacteria and cyano-toxins.

abundance of cyanobacteria, including excess nutrients, plentiful sunlight, warm temperatures, and calm water.

paint was spilled on it.

Please visit the NYSDEC's HAB page for more information and to report HABs. This page is available at <https://www.dec.ny.gov/c hemical/77118.html>.

Many cyanobacteria are capable of producing toxins that can irritate the skin and eyes or, in worst-case scenarios, cause illness or death.

Blooms can come in different sizes and colors! They also can appear and disappear within a few hours or persist for days.

It's difficult to tell a HAB from a non-toxic bloom, so it's best to avoid the water whenever the water looks like pea soup or



This may look like algae, but it is actually a mass of floating plants called watermeal! It has more defined edges than algae and may look like little sausages.

There are many factors that can influence the

Hidden Lake

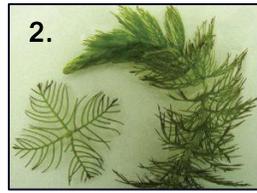


When it comes to blooms... Know it, Avoid it, Report it!

Invasive Species

Invasive species are plants and animals that are originally from a different geographical location and either unintentionally or intentionally moved to a new location.

Invasive species typically have characteristics that allow them to grow or reproduce quickly, which can alter the ecosystem they are introduced to. They



can compete with native species for resources including light, food, or space. Invasive species can become overabundant or dominate the ecosystem if left unchecked.

Invasive species can be spread naturally (by animals like waterfowl or water currents) or by humans. In order to avoid

transporting aquatic invasive species, be sure to clean plant materials from boats and gear before going to a new pond.

Detecting the presence of invasive species early (before it becomes widespread in the pond) is critical to managing it and reducing its impact on the ponds.

For more information, check out this website <http://fingerlakesinvasives.org/invasive-species/>.

Radisson's Invasive Species Profiles

We have seen these invasive species during our surveys... Have you?

1. Curly Leaf Pondweed

This submerged plant is typically identifiable by its leaves' wavy edges. It grows quickly during the spring and early summer, but usually dies back by July. Large masses of plants can affect water quality and fish.

2. Eurasian Watermilfoil

This feathery leaved, submerged plant can grow up to the pond surface and create mats along the surface. It is naturalized (very common) to many waterways in NY.

3. Common Reed Grass

Also known as *Phragmites*, it is a tall (3-15 ft) plant that has stiff leaves and large feathery flowers that are purple-brown in early summer and tan-gray by the late summer. They thrive near water, especially in disturbed soils, and can often be seen along roadsides. They reproduce quickly and can displace native plants. This plant can be mistaken for cattails.

4. Purple Loosestrife

This plant has showy purple flowers from July to September and grows well in wet areas. Although very beautiful, it can easily displace native flowering plants affecting the presence of insects, birds, and amphibians and turtles.

5. Water Chestnut

This plant has floating, glossy leaves that commonly form rosette patterns. It grows from thorny nutlets that can be found in the pond sediments. They can quickly form large surface mats that displace native aquatic plants and hurt those who step on the nutlets.



UFI is a not-for-profit 501(C)(3) research corporation dedicated to the improvement of water quality and the advancement of freshwater research. The scientists and engineers at UFI have been conducting interdisciplinary research on New York waterbodies for over 30 years.



Maintaining Function and Beauty

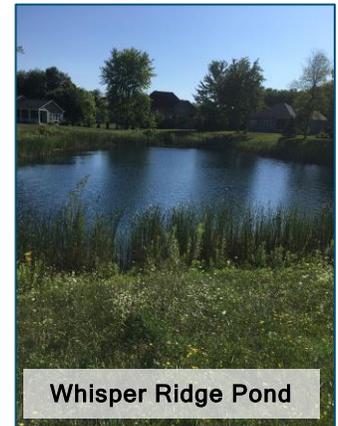
Did you know that the ponds in your backyard are serving an important function? While they provide a pleasant atmosphere and a fun fishing experience, the ponds are acting as stormwater retention ponds!

Retention ponds collect and store stormwater runoff to control the quantity and quality of water that will eventually flow into the Seneca River and Lake Ontario.

The Radisson Community Association proactively maintains the ponds by consulting with UFI and working with water quality professionals to treat the ponds.

However, you can help keep the retention ponds functional and beautiful by following these tips:

- 1) Do not feed geese, ducks, or swans. Their waste can degrade water quality and they can spread invasive species.
- 2) Dispose of yard waste properly. Grass clippings, leaves tossed into ponds or stormwater drains can increase nutrients in the ponds and promote algal growth.
- 3) Dispose of pet waste properly. Pet waste that runs off into the ponds can increase nutrients and bacteria.
- 4) Avoid fertilizing your lawn. The fertilizer is likely to run off into the ponds and promote plant and algal growth.
- 5) Appreciate the buffer between the walkways or your yard and the ponds. Long grasses and plants along the shoreline intercept runoff and can absorb nutrients before it flows into the ponds. They also help control erosion!



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