

North Pond Restoration FAQ

Q: *Why does the North Pond need to be restored?*

A: It is a human made pond and requires ongoing stewardship and restoration to once again be vibrant and healthy. Over the past 50 to 100 years, the Pond has filled in: We believe it was originally about eight feet deep, and now it is only about two feet deep. We could wade across it, and only get our knees wet! Without restoration soon, North Pond will cease being a pond at all.

Because it is so shallow, it has a host of other problems that make it less desirable for humans, plants, and animals. It is hot, stagnant, oxygen-deprived, dirty, and has minimal and poor habitat environments for aquatic life.

Q: *Why is the North Pond green?*

A: North Pond is green because algae is the dominant plant in the Pond. It is important to have algae, but when it is the dominant, or even the only plant, it contributes to the gradual degradation of the Pond.

Q: *Why is algae bad?*

A: Algae is not bad in itself. When it is properly balanced by other plants, it is a good source of food, shelter, and oxygen in the water. In the case of North Pond, though, algae are the dominant (almost the only) plant growing in the Pond. When it overpopulates the Pond, it causes several problems.

One problem is it reduces the amount of oxygen available for fish or other aquatic animals. This seems counter intuitive because plants produce oxygen, but at night they actually use the oxygen they produce. Normally, this is not a problem, because they usually produce a lot more than they use. In a pond overpopulated with algae, however, they can use it all! Additionally, when the algae die, the microbes that eat it consume oxygen again, depleting the amount of oxygen in the pond. Finally, when the water is full of algae, it can block the sunlight from reaching plants lower in the water. These plants are shaded out, die, and consequently, they cannot produce more oxygen to sustain aquatic life, and the total amount of oxygen in the pond is depleted. This is what is happening in North Pond.

The algae also grow in long filamentous strands that disrupt the movement of water in the Pond. Moving water mixes and distributes water, nutrients, and oxygen through the Pond.

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Q: *Why are too many nutrients bad?*

A: The basic elements that are necessary for life to thrive are carbon, oxygen, nitrogen, and phosphorous. When nitrogen and phosphorous are present in large amounts, that encourages plants, especially algae, to grow very fast. When the algae grow so fast that it overwhelms all the other plants in the Pond, it can cause algal blooms. These algal blooms are not only unpleasant to look at, they can be dangerous when toxic levels of bacteria build up. The algae shade out other plants, cause water to stagnate, and kills fish and other organisms, causing the problems discussed above.

Q: *Why install bubble aerators in North Pond?*

A: Aeration is the process of adding oxygen to water. Dissolved oxygen (DO) is one of the most, if not the most, important water quality parameter, allowing aquatic life to thrive and helping to reduce the impact of excessive organic materials. Bubble aerators in ponds are like bubblers in a fish tank and help put oxygen in the Pond. You have probably seen aerators at many other ponds you have visited.

Oxygen in the water allows fish and other animals to breathe. It creates environments where microorganisms can quickly convert leaves, dead trees, and other organic material into healthy nutrients, and thus keep the bottom of the pond clear or sludge buildup. When oxygen is not present, it takes much longer (about ten times longer) to break down organic materials. Additionally, without oxygen, decaying organic material tends to turn to a silty sludge and give off unpleasant smells (the sulfur smell people notice around the Pond). With the delayed decomposition, nutrients are available longer, which can feed algae and other nuisance plants.

The bubble aerators add oxygen to the Pond and help it remain healthy. The bubblers will remain on all year so that oxygen remains distributed in the water, and available to all aquatic life, all year. Turning it off for the winter can cause oxygen levels to drop, and stress fish when it is turned on again in the spring.

Q: *How can the City afford to fix North Pond but not other areas that need improvement?*

A: The North Pond Restoration project is entirely funded by private donations, from individuals or companies who live, work, and recreate in the Park. The City of Chicago and Chicago Park District are not contributing any financial assistance to the dredging, restoration, or other work around the Pond. The Chicago Park District is providing guidance, compliance oversight, final approval for the project, and contractor selection and management but no financial support is being provided by public sources.

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Q: *Why is the Lincoln Park Conservancy dredging and restoring the North Pond?*

A: The Pond is one of only a few ponds in Lincoln Park and one of the few designated natural areas. As such it is home to many species of resident birds, reptiles, and fish, including Illinois threatened and endangered species. It is also an important rest stop/layover for over 200 migratory bird species. But over the century of its existence, sediments from eroded shorelines, fertilizers, leaf litter, grass clippings, branches, and other sources have nearly filled in North Pond. To preserve the Pond, for human use and enjoyment, and the health of its wild inhabitants, we must take steps to restore it to a healthy balance.

Q: *What will dredging North Pond do for the pond?*

A: Dredging does two things that are good for the Pond. First, it makes the pond deeper so that water currents can move oxygen and other nutrients around underwater. Deeper, moving water helps fish and other aquatic life thrive. Second, dredging removes a lot of the accumulated organic materials (wood chips, grass clippings, dead trees, and plants) that settle to the bottom and turns to unhealthy sludge. This creates more and better habitat for aquatic life and removes excess (and harmful) nutrients. The improved water quality will improve the overall pond esthetic and reduce the likelihood of future algal blooms.

Q: *How will the North Pond be dredged?*

A: The Pond will be dredged in a manner that preserves the natural habitat as much as possible by dredging in zones. A berm will be placed at the border of the dredge zone and the dredged zone will be pumped to a near dry. Then conventional excavation equipment will be used to remove the accumulated sludge and other materials. The excavated material will be hauled off to a suitable disposal site, used as fill material on another Chicago Park District property, or some of the material may be used for landscape mounds/berms in the Park.

Q: *What's the difference between a wet dredge and a dry one? Which one will the Conservancy use?*

A: In essence, a wet dredge does not require draining a pond to remove bottom sediment, while a dry dredge does require “dewatering” pond. In a wet dredge, sediment at the bottom of a pond is turned to a slurry (a milkshake type consistency), sucked up from the bottom, and deposited on the bank where water is removed from the sediment and returned to the pond. In a dry dredge, the water is removed from the pond to create a “dry” condition (there may still be some water left in the pond), and then a backhoe

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would remove sediment to the appropriate depth. In this case, the removed sediment would be removed in trucks and taken away to be used in another park or other location.

We are planning to use a wet dredge to remove the mucky sediments that have accumulated at the bottom of the Pond and deepen the Pond several feet in some areas. These deeper areas ultimately increase both pond health and the long-term sustainability of the Pond. All dredging will be done in a way that is least disruptive to both the people and plants and animals in the Pond..

Q. *What will you do with the dredged material from the Pond?*

A. Current plans call for all dredged material to be used by the Chicago Park District for use in Lincoln or other parks. A portion of materials could be used onsite north of the Pond in the open parkland that extends to Diversey and the Hamilton statue. Plans could include improved grading and drainage to alleviate intermittent flooding issues in this part of the Park, which will increase its usability by park visitors. Most of the dredged material will likely be used as fill by the Chicago Park District at Big Marsh, a park that is being developed on the former Chicago operations of U.S. Steel in the Calumet region. Reusing dredged material in Chicago's parks is another important aspect of the overall sustainability of the restoration project. Reuse is also considerably cheaper than offsite disposal.

Q. *Where does North Pond get its water?*

A. Rainfall alone is not enough to replenish North Pond. We learned this year that the Pond does not have a bottom lining, which means that a large amount of water seeps through the bottom of the Pond and travels to Lake Michigan through the ground water. To keep it full and viable we regularly turn on the tap, flooding it with municipal water (essentially drinking water)

A goal of the restoration project is to not only make the Pond healthier, but to increase its sustainability; especially related to water conservation. The Conservancy plans to utilize a natural polymer flocculant to line the Pond and decrease its loss to groundwater and the Lake. The flocculant will cause clay, soil, and other sediments in the water to clump together and settle to the bottom, creating a natural liner and a hard bottom. This will dramatically reduce or eliminate the amount of water the Pond loses each day. The Conservancy also plans to improve drainage in the parkland adjacent to North Pond while maximizing stormwater capture, directing to the Pond as another source of water. In total, it is estimated that at least 85% of municipal water (roughly 4 million gallons) will be saved annually through these techniques.

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Q: Will work on the North Pond kill wildlife?

A: The Lincoln Park Conservancy is pursuing restoration options that preserve all wildlife that use the Pond. The purpose of the restoration is to make sure that all the local and native species are healthy and have a good living environment for the next fifty to a hundred years.

Some of the steps we are taking to preserve the local wildlife include doing most of the dredging work in the cooler months when plants and animals are dormant or absent. Another example is that when we do the excavation, we will do it in stages, meaning that we will build a berm, put all the aquatic animals in the wet area and excavate the other area.

The flocculant we will add to the water is not dangerous to wildlife or plants. It is designed to remove sediment from pond water and cause it to accumulate at the bottom in an impenetrable layer. The flocculant settles to the bottom of the slowly enough that any animals can get out of the way and will not be trapped.

Q: What about the Canada Goose population around the Pond?

A: We recognize that the presence of geese in the Park is a mixed blessing. Many people enjoy seeing the geese, especially the young goslings. Canada Geese are relatively unafraid of people and, in ideal conditions, create a human interest in nature and the natural world. However, excessive goose populations, as can be seen around the Pond later in the summer, can be hazardous to both human health and the health of the pond. Geese can be very aggressive, hissing and even biting people who get too close. Their waste also contributes to the nutrient overload of the pond and can carry human diseases such as *e. coli*.

Canada Geese are a great success story for the International Migratory Bird Treaty, the same treaty that protects other migratory birds. Within the limits imposed by international law, the Chicago Park District and the State of Illinois are actively managing the goose populations in the City.

Part of the plans for the restoration include humanly managing goose populations by making the pond less inviting to them. Generally speaking, Canada Geese prefer open lawns near water, public parks, campuses, and golf courses with limited predators are their ideal environment. By planting native species, particularly tall grasses and other natives on the shore and riparian plants tolerant of moist to wet soils, we can make the pond beautiful for humans, attractive to other wild species, and less attractive to geese.

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Our plans to make the North Pond less appealing will only go so far; We need your help to manage the goose populations. One important way we can all do that is to not feed the geese. By creating a steady supply of food, we encourage the geese to stay at the Pond all year, rather than migrating in the spring and fall. This helps to create the situation where their numbers increase dramatically, and accelerates both the degradation of the pond and the need for more aggressive population control.

Q: *Will fish be stocked in the Pond?*

A: A healthy pond contains a variety of plants and animals, from the microscopic decomposers to large, top predator fish. The Lincoln Park Conservancy may stock the Pond with a variety of native fish that can make the Pond a thriving ecosystem, control nuisance insects, keep relative populations in check, and attract fishing and foraging birds. Recreational fishing is not intended at North Pond.

Q: *How will the Lincoln Park Conservancy address the issue of shoreline erosion?*

A: As part of the restoration, the Lincoln Park Conservancy (and its contractors, with the approval of the Chicago Park District), will stabilize the shoreline. This means putting in materials and plants that hold the soil in place and help prevent loose soil and sediments from falling into the Pond. Some of this will involve putting in native plants, but it may also include stone and other materials that allow access to the water. We are still working on the landscape plan, but the LPC is demonstrably committed to planting and maintaining native plants in and around the Pond.

Q: *Why would Lincoln Park Conservancy remove some trees and access to the shoreline?*

A: When you walk around the Pond, especially when you look at it from above, it is clear that almost all (if not all) of the trees on the shore are falling into the Pond. While they do provide some habitat for turtles, herons, and other animals, so many trees in this compromised position are adding to the sludge, sediment, and stagnation of the Pond. In the Fall, their leaves and soil from around their roots fall into the Pond, and branches in the water inhibit movement of the water.

There is active shoreline erosion around the Pond, and trees and shrubs that are leaning over the water contribute to pond degradation because their leaves, branches, and even the trees themselves fall into the water, increasing both nutrient and sediment loading. When leaves, twigs and branches fall into the water, the nutrients, such as phosphorus and nitrogen leach out in a matter of days, generating a huge increase in soluble nutrients in the water column. The remaining leaf matter is left behind to slowly

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decompose over a much longer period. This material immediately becomes a significant source of nutrients and can increase the amount of organic debris and sludge on the bottom, exacerbating algal blooms and eutrophication.

Q: *How will Lincoln Park Conservancy handle future sediment in the Pond?*

A: The Lincoln Park Conservancy commits to maintaining all sites we restore. The Alfred Caldwell Lily Pool, the Lincoln Gardens, and the various sculptures around the Park are examples of our continuing commitment to the Park. As part of our restoration of the North Pond we will adopt an Adaptive Management Plan. The main aim of an AMP is to monitor the site and address small issues before they turn into big issues.

Generally, we expect that consideration of planting native plants along the shore that help hold soil in place, directing human access to specific points where people can experience the Pond, and carefully monitoring and addressing issues as they arise will help limit and address future shore erosion.

Q: *What type of landscaping will be planted?*

A: Details of the landscaping are yet to be defined during the visioning process, but in general, we will incorporate native landscaping around the pond perimeter, while keeping in mind this is an urban park that has a wide variety of visitors with a myriad of interests. Woven into the native plantings will be areas/pathways of manicured lawns and landscaping to allow visitors to visit the shoreline and near-shore areas. Layout of the native/manicured interface will take into consideration how wildlife would potentially use the area.

Q: *Will the work improve flooding of the park area around the Pond?*

A: Yes. Part of the intention of the North Pond restoration is to make the Pond a sustainable ecosystem for years to come. We will examine the areas immediately around the Pond and, as much as possible, will direct water from areas that currently flood into the Pond. This improves the human use of the Park, reduces the Pond's reliance on city water, and reduces the introduction of excess nutrients by allowing that water to be naturally filtered before it enters the Pond.

Q: *What is the long-term maintenance required for these improvements?*

A: As with other projects we have taken on, the Lincoln Park Conservancy is adopting an Adaptive Management Plan (AMP) for the restored pond, shoreline, vegetation,

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aeration, and all improvements. The AMP is a long-term program executed for the life of the project. Initial work will consist of maintenance and monitoring of the improvements to ensure the design intent has been met and the vegetation has established as expected. Monitoring the improvements routinely to identify action items which, will be addressed as soon as possible. As time passes this proactive approach will result in less overall maintenance costs, because waiting until an issue has gotten much worse requires significantly more effort to remediate it.

Q: *What are the plans for the Rustic Pavilion? Specifically relating to the homeless people who live there and trash that accumulates there?*

A: As part of Park District property, the Rustic Pavilion is open for use by everyone, and the Lincoln Park Conservancy has limited ability to remove homeless people from the Pavilion. A goal of the restoration is to create an increased Lincoln Park Conservancy presence in the Park and make the pavilion more of a focal point of the North Pond. As the restoration progresses, we hope to both visually and environmentally connect the Pavilion with the Pond. We intend to provide programming at the newly renovated Sunshine Playscape and potentially also in the Pavilion. Our increased presence in the Park and increased use of the space in general will help us monitor, and potentially deter, human occupancy of the Pavilion as well as give us a chance to regularly clean up trash in that area.

Q: *As part of the design project, why is it important for Lincoln Park Conservancy to involve the public and other stake holders?*

A: As the Lincoln Park Conservancy goes through the design process it is important to have the public and other stakeholders involved so we can gather input on their visions and future uses of North Pond. As the ultimate users of the Park, and as taxpaying residents, the Conservancy and Chicago Park District want to ensure all voices are heard.

Q: *What is the schedule for the project?*

A: Lincoln Park Conservancy is moving forward with construction to be started by Fall of 2021 and completed by the end of 2022.

We know that while the construction is expected to take about six to eight months, it will take a little longer for the shoreline plants to fully establish themselves. We have had tremendous success with our plantings, especially at the West Prairie expansion, but normally it takes about three years for new plants to fully establish themselves. We will be working with our gardening volunteers on a regular basis to monitor and support the plant communities as they establish themselves.