

Low impact Dredging

Harrington Millpond water quality and habitat improvement plan

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photo by Philip Kerr

Harrington Millpond

The Harrington Millpond is a historic treasure, much loved by the local community and area residents. For generations, it has been the heart of the community. Unfortunately, the future of the dam that creates the pond and therefore the pond itself is in question. Due to structural and design issues, the dam must be repaired, replaced or removed entirely. Also, mainly due to neglect and poor management, the environmental conditions within the pond have deteriorated considerably, silting being the main issue. Over time, the accumulated sediment has turned the pond into a

shallow basin unsuitable for desirable vegetation, fish, and wildlife. Formerly the pond was deeper, colder and home to a healthy population of native Brook Trout.

But, the point is, whether the dam is repaired and the pond saved or the dam is removed and the pond reduced to a green space with an artificial creek flowing through it, the sediment that has accumulated within the pond must be dealt with. As the sediment is difficult to handle because of its soupy consistency, standard methods of removal are costly, messy and destructive to the shoreline and surrounding area. We are proposing to use a newer method of sediment removal to clean up the pond and improve water quality. After the work is completed, the water leaving the pond will be cooler and the water within the pond will be better suited as habitat for the native Brook trout. Other improvements will be undertaken to not only improve fish habitat but also the habitat for other wildlife as well. Also, the proposed work will improve the recreational use for visitors to the area. Historically the pond was regularly utilized by a greater number of people and for more varied purposes. We would like to see that happen once again. This is a proactive approach to water maintenance that will not only benefit the environment of Harrington Pond and the area downstream but possibly other locations that have experienced reduced water quality due to neglect and poor land management practices.

Low impact dredging

The problem with removing silt is that the material is very soupy when wet and difficult to manage. This method of dredging simplifies the management process. Low impact dredging is similar to standard suction dredging but is more precise, allows for more control, and has almost no impact on the surrounding environment. A floating platform containing specialized pumping equipment sucks water and sediment from the bottom in a very precise and controlled manner and can do two things:

1. Pump the mixture of water and sediment to a staging (dewatering) area. This staging area will consist of a containment zone made of tarps and square straw bales that house a large



dewatering bag, like a huge bag of landscape fabric (30'x100'). The bag is pumped full of water and sediment- the water filters out through the bag while the sediment remains inside. The bag is pumped full of water and sediment several times allowing the water to percolate out each time. Once the bag is full, it is left to dry. Once the sediment

has dried to a point it is easily handled, the bag is cut open and the sediment, now basically

soil, is hauled away. The filtered water that leaves the bag is contained by the tarps and hay bales and is redirected back into the creek below the dam. Once the bag or bags have been removed, the tarps and bales are cleared away and, once the grass grows, there is little negative evidence of the work that was done.

2. An area within the pond is curtained off using the same fabric as the big bags. The sediment and water are then pumped into the curtained off area. The water escapes through the curtain and the sediment is left behind. By continuing to pump water and sediment into this curtained off area, eventually, an island is created which can be planted and seeded for wildlife purposes. This has little impact on the surrounding area, including the benthic environment, and is therefore much better for the fish and animals that utilize the pond.

We propose to use both methods above to remove and control the sediment from the Harrington Mill pond. The staging area would be on the flat grass area below the dam near the old community well. The proposed island would be located out from the observation deck and towards where the creek enters the pond. There is a natural spring area in this location and by widening and deepening this area, the water would be cooler and better suited for the native trout. Dredging would also be performed on the original stream bed from where the creek enters the pond to the base of the dam itself. This would speed up the flow and help reduce future sediment deposits. By adding rock in specific locations, and in a u-shaped configuration, improved habitat and sediment control can be achieved (some rock was installed in the Harrington pond for this purpose in recent years but the pond was already heavily silted by this time and there was zero follow-up maintenance thereby compounding the silt issue). By dredging and deepening pockets in the pond, water quality can be improved as well as fish habitat, fishing opportunities, and other recreational pastimes accommodated. By using this method and re-using some of the original pond material, the benthic community within the pond will be less impacted than using standard methods and the shorelines will be left untouched.

Other improvements in the Mill Pond

After dredging is completed, other improvements would be undertaken. By adding boulders, logs, and log piles, further fish habitat could be created as well as aid in a healthier benthic environment. Also, in areas of known seepage or flow, gravel could be introduced to encourage spawning of the native Brook trout. A portion of the surface of the island could be covered in a layer of sand/gravel to encourage turtle nesting.

We are also proposing a campaign to remove the invasive carp from the pond and to release them back into the Wildwood reservoir from where they originated.

Upon completion of the above works, it may be beneficial to transfer Brook Trout from a nearby tributary to stock the pond. An educational campaign about this under-utilized species would be undertaken by the community to promote fishing of this native species (using on-site signage and local media). Minor bank improvements could be made to facilitate safe fishing for this unique fish. This could also include the installation of a handicap fishing platform.

One other aspect of the plan would be to work with local farmers, who's land is part of the Harrington Creek drainage system, to encourage better land use practices in an effort to keep the soil and nutrients on the fields and out of the waterway.

Cost and Cost Sharing

We are looking at this as a community-based initiative specifically for the Harrington Mill Pond, but as this type of dredging has many purposes that would benefit local municipalities, townships and conservation authorities- from sediment removal in other ponds such as Dorchester, rivers and lakes (including marinas and boat slips) as well as removing invasive weed species- including the roots and the sediment that supports them to greatly reduce re-growth, and improving drainage in locations that are difficult to access using standard methods, it may be possible to share costs of the above over a number of projects. The current range of cost is between \$40,000 and \$60,000 to complete the work as described above on the Harrington pond. If other projects can be performed around the same time, certain costs could be spread out reducing the total cost of each project.

Conclusion

We hope that all parties with a vested interest in our local heritage site and a healthy local environment will consider our proposal to improve the water quality and habitat of the Harrington Millpond. All of the work described above could be performed within two weeks with less cost, mess, and risk to the dam and the land surrounding the pond. In two weeks we could turn back the pages of time and repair what decades of neglect has caused while making improvements to reduce the risk of this happening again. And in the greater scheme of thing, this small project, linked with numerous other small projects that all cool the water and improve water quality, will combine to make a bigger difference through the entire watershed from Harrington to Lake St.Clair and Lake Erie as well.

Thank you

Gavin Houston Chair of the Harrington Pond Committee