

Caring for Your Land and Water

MANAGEMENT OF ONLINE PONDS

FACTSHEET 5



There are three basic types of ponds: online ponds, offline (dug) ponds, and bypass ponds (see the diagram below for examples).

An online pond is one that is located on a stream, and is built by dredging an area within it or by damming a stream. An offline pond is completely separated from any other waterbody and has no inlets or outlets to a stream channel. Bypass ponds can still be considered online, but are made by directing only some of the flow from a stream into a pond.

Though offline and bypass ponds may have impacts on surrounding land and groundwater, online ponds usually have the most significant negative effects (mostly downstream).

What are the negative effects of online ponds?

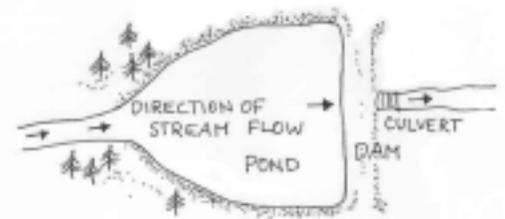
Ponds that are located online (or on stream) will have an impact on both the stream itself and other ponds downstream. They can:

- ◆ Block the migration of fish, which leads to fragmentation of populations and puts them more at risk.
- ◆ Allow the water to warm up to temperatures that some species of fish cannot tolerate.
- ◆ Be difficult to manage as natural accumulation of sediments and nutrients gradually change the pond into a wetland.

Action Steps

- ◆ Obtain the proper permits from your Conservation Authority and the Ministry of Natural Resources before undertaking any kind of pond construction or alteration
- ◆ If you have an on-line pond, plan to take it off-line or restore natural stream flow by altering your pond so that it is a bypass pond
- ◆ Seek advice from your local Conservation Authority biologist if you have questions regarding your online pond and the impacts it has on your property and downstream

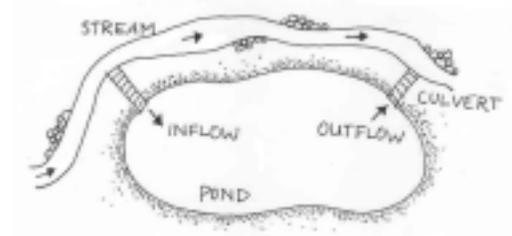
ONLINE



DUG



BYPASS



- ◆ Cause fish species that are introduced (if you stock your pond) to compete with native stream species
- ◆ Cause erosion downstream when sediment gets trapped
- ◆ Act as nutrient sinks and enrich downstream areas causing algae blooms and oxygen depletion

Oxygen levels are lower in standing bodies of water because the water cannot pick up oxygen by moving over rocks and boulders in the stream. The water in an online pond is also warmer and cannot hold as much dissolved oxygen as cold water. Nutrient-rich ponds also use up more oxygen.

What can you do about online ponds?

Before making any changes to your pond or constructing a new one, you must also get approval from the Ministry of Natural Resources and your local Conservation Authority. Construction of new online ponds is rarely approved.

It is strongly recommended that on-line ponds be reconstructed to become bypass ponds and the stream restored. This, however, is a fairly expensive procedure requiring re-routing the stream channel or creating a channel through the pond. There may be funding available for naturalizing your stream and removing dams (or retrofitting them to allow fish to pass through), but you should seek advice from your Conservation Authority biologist before proceeding.

Other things to consider

It is important to respect the riparian rights of

downstream neighbours and recognize the magnitude of your actions.

If there are several on-line ponds on the same stream, the impacts can accumulate and significantly alter its hydrology. They can change the natural flow characteristics and channel stability of the stream, negatively affecting fish populations. Trout are the most sensitive species.

Online ponds also tend to accumulate sediment that is deposited from the stream as the water slows down entering the pond. In order to remove the sediment build-up; dredging is a short-term option, but it may have to be repeated.

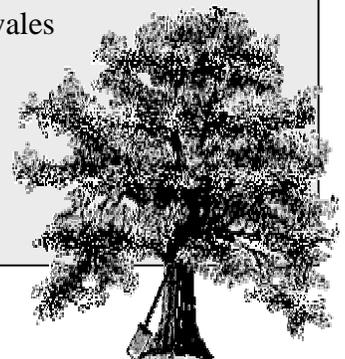
Dredging a pond, however, can also have significant impacts on a hydrological system. If sediment has partly filled in a pond and wetland vegetation has become established, this usually provides more diverse natural habitat than an open water pond. Once a wetland has become established dredging is no longer recommended in that area.

Who can you contact for assistance?

- ◆ Conservation Authority (Biologist)
- ◆ Ministry of Natural Resources

Other relevant factsheets in this series include:

- ◆ Buffer Strips and Swales
- ◆ Wildlife Pond Management
- ◆ Stocking Your Pond



Scientific references available upon request



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