

Millponds: nostalgic or obsolete?

by Gray Merriam

A few decades ago millponds and millstreams were subjects for painters of bucolic landscapes. They also were power sources vital to local economies. They have lost their economic role and their beauty is overridden by their destructive environmental impacts.

Warm water effect

Most of the small dams holding back ponds in our watersheds allow water to escape over the top of the dam. Outflow water was the top water of the pond: the water that was warmed by the sun. The heated water flows downstream warming everything in its path. That destroys all the cold water habitats of the stream. Fish, such as brook trout, and especially their eggs and young, no longer can survive without those cold water habitats. Warm water species from elsewhere, such as brown trout, take over, often with our help. As the original environment is further distorted, it may allow abnormal spread of other native species such as smallmouth bass.

Atlantic salmon

For several streams flowing into Lake Ontario, even more spectacular species have been pushed out by the many little mill dams favoured by progress a few decades ago. An Atlantic salmon population that was “landlocked” in Lake Ontario, rather than migrating back to the ocean, survived by migrating up our rivers to spawn and start their young. Both the destruction of cold water habitats by surface overflow from millponds and

the barriers presented by the dams themselves barred the salmon from streams that had supported their population for geologic time.

Eels and elvers

Although less sought after by European settlers, American eels were even more important than salmon to First Nations in the watersheds draining into Lake Ontario. These fish, not to be confused with lampreys, gather in the Sargasso Sea off Bermuda for mating. If they can overcome the St. Lawrence Seaway dams, the transparent young elvers migrate up the streams flowing into the Great Lakes to mature over a few years before migrating back to the Sargasso to mate. Mature eels, trapped by dammed rivers, have been caught in our lakes in the current decade.

Surface overflow dams affect not only sports fishes and eels. All invertebrates, at the base of the food chain, require cold water habitats, so they also are pushed out.

Sediment

In addition to the barrier effects and the warm water effects, surface overflow dams also change the flow of sediment downstream. As the water flow slows above the dam, sand, gravel and all heavier particles settle out and become sediment in the bottom of the pond. Not only does the pond fill up, but also those settled particles don't go downstream to provide the sediments required by everything from fish eggs to mayflies.

Unless one life stage of a species can fly, these invertebrates, as well as the fishes, have their gene pool along the stream broken into isolated segments. The basic processes of evolution are impacted by this fragmentation of the streams (and the gene pools) by dams.

Relicts of the past

In many cases these old dams are relicts of the past that have lost their reason for being. Ontario's Green Energy Act fails to rationalize these relict dams. Their ecological effects are still causing impacts. They prevent restoration of habitats critical to the survival of species and they hamper the possibilities of rebuilding the faunal structure of our Lake Ontario streams.