Conservation Corner

By Shannon Stephens

Fish Ladders and Fish Friendly Culverts

Enhancing fish spawning habitat

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Pretend for a moment that you are a trout. You have a remarkable number of specialized adaptations. You have excellent colour vision – yellows and greens are especially vivid. Submarine-like, you have an air bladder to control your buoyancy. Faster than any souped-up hot-rod, you can accelerate from 0 to 37 km/hr in about a second. There's also extra-sensitive nerve receptors arranged along your lateral line that detect the slightest vibrations. Your sense of smell exceeds a blood-hound's, allowing you to sense the minute chemical signature of your original spawning grounds at levels as low as one part per billion (this is about 500 times better than a human's sense of smell). Your urge to find that home-stream in spawning season is absolute.

Photo by Gary Christie
Leaping rainbow trout on the Boyne River

Despite all of these keen senses and heroic abilities, it's not enough to help you get back to your spawning grounds. You'll need climbing gear and a jet-pack to cross the barriers in your path. Dams and poorly installed culverts put a real damper on your amorous and reproductive intentions.

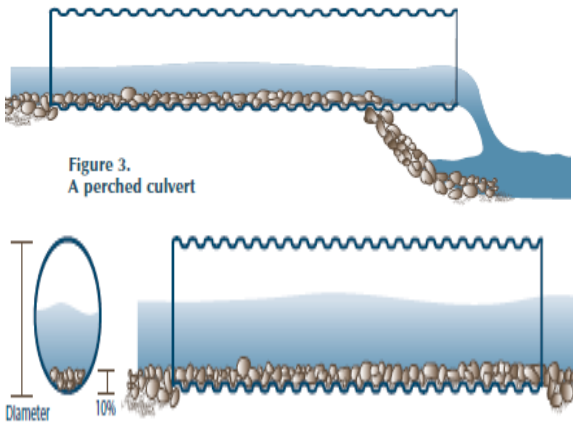
The Nottawasaga River and many of its tributary rivers are prime trout habitat. However, the river has nearly one thousand on-stream dams that impede fish migration.

Fish ladders and bypass channels can provide a way for some species of fish, like trout, to make their way upstream. A fish ladder works by creating a stairway of stepped pools and riffles that the fish can swim and jump up incrementally.

The first fish-ladder in Ontario was built in 1961 at the Nicolston Dam on the Nottawasaga River near Alliston, due to public demand.

Watching trout migrate during spring (rainbow trout) and fall (salmon, brown trout and native brook trout) is an unforgettable experience. Spawning times are dependant on water temperature.

Not all barriers are dams. Culverts can be a barrier too. If the flow of water is too fast, baffles can be installed within the culvert to create resting places. Poor culvert installation can also be a problem. A culvert should be set about 10 per cent into the stream bed to avoid creating a water-drop. Otherwise it is considered a perched culvert. If the culvert is creating a waterfall at any time of year, it's a problem for fish.



Perched culverts (above) pose a barrier to migrating fish. Culverts should be set into the ground 10-15% to permit fish passage.

Considering fish migration is important when installing a bridge or culvert. Protecting our fisheries protects a recreational activity that nearly 1.3 million Ontarians enjoy and generates more than $2.5 billion annually.

Fish and fish habitat are legally protected in Ontario by government. That's why if you are planning a project that changes a watercourse or it's floodplain, you need to consult with your local conservation authority first. The Nottwasaga Valley Conservation Authority works in partnership with the Department of Fisheries and Oceans to protect fish and fish habitat. If you have an existing dam or perched culvert, the NVCA's Healthy Waters Program may offer technical and financial assistance for high priority projects that help restore the watershed. Contact Fred Dobbs at 705-424-1479 ext. 237 for more information.

"Conservation Corner" is a monthly column that looks at the theory, practices, technology and benefits of land & water stewardship. The NVCA is your public agency dedicated to the preservation of a healthy environment. As your partner, the NVCA provides the expertise to help protect our water, our land and our future.

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The NVCA serves its 18 member municipalities that span the Nottawasaga area watersheds: Adjala-Tosorontio, Amaranth, Barrie, Town of the Blue Mountains, Bradford West Gwillimbury, Clearview, Collingwood, Essa, Grey Highlands, Innisfil, Melancthon, Mono, Mulmur, New Tecumseth, Oro-Medonte, Shelburne, Springwater and Wasaga Beach.