Population trends in herptiles and fish

Last week I began a series of articles on how the flora and fauna of central Ontario and the Kawarthas is faring, given the many pressures on biodiversity these days. Today, I'd like to focus on reptiles, amphibians, and fish.

Reptiles

As most readers are no doubt aware, turtle populations are in decline across our region. There are a number of reasons for this sad state of affairs. First of all, turtle eggs stand a very poor chance of surviving the long incubation period. Predators such as raccoons and skunks usually discover the nests within a matter of hours, dig up the eggs and enjoy a hearty meal. They leave behind a familiar sight of crinkled, white shells scattered around the nest area. Since these predators tend to flourish anywhere there is human settlement - raccoons are more abundant now than ever before - few turtle nests go undiscovered.

Roadkill, too, is a very significant cause of turtle mortality, especially during the nesting season when turtles cross roads on their way to nesting sites. The death of pregnant females not only removes reproductive adults from the population, but it means all their potential future offspring are lost, as well. Some of the more eye-catching species such as the spotted turtle also fall prey to poachers who take the animals from the wild to sell illegally in the pet trade. The only local population of spotted turtles that I'm aware of is in the Kashabog Lake area.

As a result of these pressures, seven of Ontario's nine turtle species have been classified by the Ministry of Natural Resources as species at risk. Of these, the situation for wood and spotted turtles is so critical that they are both listed as endangered, meaning they face imminent extinction or extirpation. Only two turtle species – the Midland painted turtle and the snapping turtle - are commonly seen.

Many of our local snakes and our one species of lizard are also facing an uncertain future. Eight snake species in central Ontario are already listed as being at risk. These include the eastern hog-nosed snake which can still be found in the Kawarthas. Two other local snakes, the eastern ribbonsnake and the milksnake, have been designated as species of Special Concern. The same designation has been given to the southern Shield population of the five-lined skink.

Habitat loss and fragmentation is probably the greatest threat facing snakes and lizards. Many parts of central Ontario and the Kawarthas have been dramatically altered by human activities such as agriculture and urbanization. Many species are now restricted to islands of habitat amid a sea of human development. Snakes are also very vulnerable to being run over on the many roads that criss-cross the region. This is because snakes don't simply cross the roads but use them as a place to soak up sun and the heat from the pavement. Many mammals, too,

such as raccoons, skunks and cats, prey upon snakes. This is another good reason to keep your cat indoors and to never feed raccoons.

Unfortunately, some people have a deep-rooted, psychological aversion to snakes and may not be able to do very much to change the way they feel. That is fine. One doesn't have to like snakes in order to respect them. What is inexcusable, however, is the intentional harassment or killing of these animals because of the misinformed belief that they are dangerous, evil, or simply useless. Species as the milksnake, which imitates a rattlesnake by vibrating its tail in dry leaves, pay a particularly heavy price when it comes to persecution by humans. Not only is behaviour of this kind ecologically unsound, given the important role that snakes play in the food chain, but it also contributes to making the natural world a less diverse and interesting place. It is also illegal to kill, harm, harass, capture or take a living member of a species that is listed on the Ontario Species at Risk list as an extirpated, endangered or threatened species. Please speak up when you see or hear of people persecuting snakes.

Amphibians

Amphibian populations appear to be relatively healthy in central Ontario and the Kawarthas. No species is listed as At Risk by the Ontario Ministry of Natural Resources. In southern Ontario, however, four amphibians (three salamanders and one frog) are designated as endangered and two are listed as threatened.

Fish

At least 11 species of fish that are native to central Ontario have also joined the ranks of species at risk. These include the bridle shiner, cutlip minnow, grass pickerel, northern brook lamprey, pugnose shiner, redside dace, river redhorse, shortnose cisco, channel darter, lake sturgeon and American eel. Of these, the latter three have a distribution that includes the Kawarthas. Although extremely rare, sturgeon are still present in the Trent River.

The introduction of species that are not native to a given ecosystem is one of the major threats to fish biodiversity. This can happen when fish are moved either accidentally (e.g., movement through canals) or deliberately (e.g., releasing unused bait fish) from one body of water to another. A fish species that is new to a given body of water can compete with native fish species for resources or even become a predator upon them. Moving native species from one waterbody to another can also be problematic (and is illegal). Moving fish can also result in the spread of pathogens such as viral hemorrhagic septicemia (VHS). It has been responsible for a number of large die-offs in the Great Lakes and St. Lawrence River in recent years. The construction of dams, too, is a major threat to fish populations because it can interrupt seasonal spawning movements. Dams have had an especially negative impact on lake sturgeon populations. Other common causes of fish decline include overfishing, the degradation of aquatic habitat by activities including land use practices, shoreline alterations and the invasion

of fish habitat by non-native plants, such as milfoil, which crowd out the native plants that some fish prefer.

There is also concern about the future of walleye populations. Both the size and number of walleye caught has declined. One major stressor is the extremely high level of angler harvest. Walleye remains the most highly sought fish across the province. Another major concern is the impact of introduced or invasive species which can greatly reduce the amount of walleye a given lake can support. Because walleye are adapted to low to moderate light conditions, these fish do not do well in lakes with high water clarity. Zebra mussels, filter-feeders which are now present in many parts of central Ontario including all of the Kawartha Lakes, are making our lakes increasingly clearer and thereby decreasing their suitability as walleye habitat. Another invader, the black crappie, competes directly with adult walleye for food and often preys directly on young walleye. Shoreline alteration is also a threat. The construction of docks, boat houses and retaining walls has the cumulative effect of drastically altering many shorelines and, in doing so, adversely affecting the spawning, nursery and feeding habitats of near-shore fishes such as walleye. Finally, climate change is also working against walleye populations. A warmer climate will reduce the amount of cool water habitat available for the fish which will make many central Ontario lakes less suitable for this popular species.

A warming climate is also a cause of concern for lake trout populations. Lake trout eggs hatch in February but the fry remain in the rubble of the lake bottom for about six weeks and survive on energy stored in their yolk sac. They swim up from the shoal where they hatched in late March and early April and must actively feed or starve to death. Food is usually abundant at that time. However, climate change may cause an increase in water temperature which would result in the eggs hatching earlier. The fry may then become active in mid-winter when there is no food available and consequently starve to death.

Finally, there may be some concern for the future of the unique strains of muskellunge which have inhabited the Kawartha Lakes for thousands of years. The threat is coming from the spread of pike - a species not native to the Kawarthas - from Georgian Bay into Balsam Lake which is a headwater of the Kawartha Lakes. It may only be a matter of time until pike spread into all of the Kawartha Lakes. The danger is that pike spawn earlier than muskies and will prey upon them. For the time being, however, muskie populations in the Kawartha Lakes appear to be stable, thanks in part to a catch-and-release ethic adopted by many anglers.

Next week: invertebrates and plants.