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Editor **JIM HENDRY** jim.hendry@sunmedia.ca 745-4641 ext. 242

LIVING

Tiny, but they've got game

'Minnows' are bait, not trophies, but have a beauty and attraction all their own

In addition to our many well-known game species like bass and walleye, the Kawarthas boasts a wide variety of fascinating non-game fish. Not only are the fish themselves beautiful but many of their behaviours are nothing less than fascinating.

Drew Monkman
OUR CHANGING SEASONS

When people talk about non-game species, the word "minnow" is invariably used. For most people, this is a general term used to refer to small fish that are primarily used for bait. Technically speaking, however, minnows are small, freshwater fish belonging to the carp family or Cyprinidae. They make up the largest family of freshwater fish in the world, and about two dozen species can be found right here in the Kawarthas.

Of the many species of minnows that spawn in May and June, one of the most interesting is the fallfish. Olive to gold-brown above and bright silver on the side, fallfish are the largest minnow native to eastern North America. Adults are typically 25 cm or more in length and have very large scales. During the spring breeding season, the male also develops nodules on the snout and a pinkish cast to much of the body. The most amazing thing about the fallfish, however, is its nesting behaviour. Unlike other male fish which might simply sweep away debris from the lake bottom in order to prepare a nesting site, the male fallfish builds a huge pile of stones. The roughly pyramid-shaped mound can measure as much as a metre high and two metres wide and contain thousands of similar-sized stones. It is the largest stone mound nest built by any fish. The nests are usually made by one male although there are reports of schools of male fallfish working together, each one placing its small stone in place before speeding off to grab another one.

Wickipedia Commons photos
The creek chub is a common local minnow that can grow to about 20 cm. During the spring spawning season the male acquires a rosy glow.

"Clear, sunny days are better than overcast days for fish-watching and visibility is usually best when the sun is high in the sky. At some point, you will probably want to enter the water."

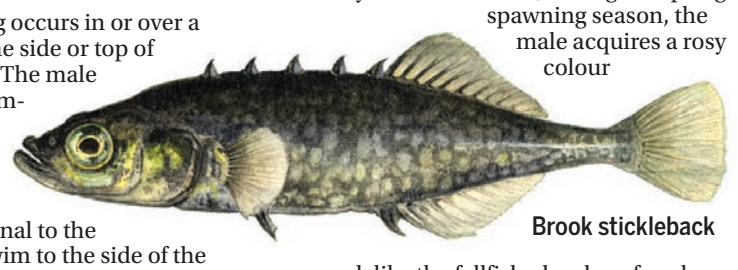
A 25-cm-long male fallfish can build a nesting pile of stones up to a metre high and two metres across.

STONE PILE SPAWNING

Spawning occurs in or over a trough on the side or top of the mound. The male positions himself over the trough and "trembles." The trembling is a signal to the female to swim to the side of the male and deposit her eggs. She does so in multiple, one-second bursts. In all, a female fallfish can release 1,000 to 12,000 eggs. The male will spawn with several different females. After spawning, males cover the pit and eggs with stones, presumably to prevent predation or possible suffocation of the eggs by silt.

If you are out walking along a creek or small river when water levels are low – often in late summer or fall – be sure to keep an eye open for these stone mounds. Sometimes, they can actually be seen standing high and dry. You'll be able to impress your friends or family by explaining that a fish made them! You will also understand why First Nations people of the Hudson Bay region called the fallfish "Awadosi" or "stone carriers."

Another common minnow of local creeks and streams is the creek chub. Usually less than 20 cm in length, this species is a popular bait minnow. Throughout most of the year creek chubs appear blackish above and silvery below. However, during the spring spawning season, the male acquires a rosy colour and, like the fallfish, develops four large tubercles on each side of its head. To tell the difference between the two species, look for a black spot at the anterior base of the dorsal fin on the creek chub. Being a close evolutionary cousin the fallfish, the male creek chub also builds a mound-like nest of stones. It is possible to observe the male guarding the eggs from predators. Creek chub and fallfish play the role of top predator in streams where trout are absent.



Brook stickleback

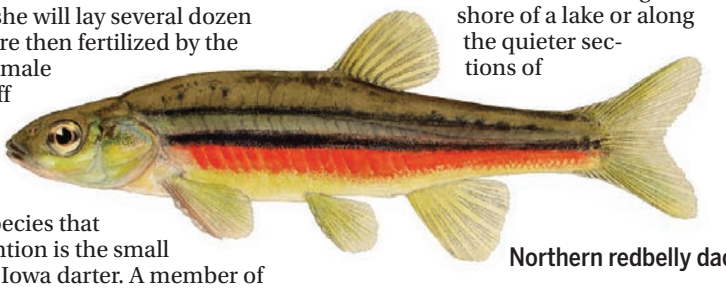
FAMILIAR REDBELLY

The northern redbelly dace is a familiar minnow to many people. I remember inadvertently catching them in my net when, as a child, I'd be pursuing turtles in a pond near our cottage. Dace are a small fish, rarely exceeding seven cm in length. The male sports a vibrant scarlet belly during the mating season, making it one of the most attractive native minnows and a great addition to any aquarium. Not to be outdone, however, the breeding female develops an equally-attractive, green belly stripe. Redbelly dace inhabit small streams and ponds, most often in or near beds of emergent and floating plants. Although they belong to the minnow family, the dace's spawning ritual could not be more different from that of the fallfish and creek chub. A group of males will chase a female into a mass of algae where she will lay several dozen eggs. These are then fertilized by the males. The female then heads off to another algal mass to do the same thing.

Another species that deserves mention is the small but stunning Iowa darter. A member of the perch family, darters are rarely seen swimming or resting in normal fish fashion but spend most of their time remaining motionless on the bottom of shallow streams, rivers and small lakes. Then, just as the name implies, they will suddenly dart forward in a quick burst, usually in an attempt to catch prey. Spring males are so vividly colored that you might think you are looking at an escapee from someone's collection of tropical fish. The only other species in the Kawarthas that rivals it in terms of colour is the pumpkinseed. In the May-June breeding season, Iowa darters are adorned with blue or green bars, each one bordered by a brown stripe. They are yellow underneath and have reddish lower fins. If that's not enough, the first dorsal fin is banded in blue and red.

WATCH THE DARTER

Darters are an ideal species for fish-watching because they spawn so close to shore. Watch for them in the quiet, shallow waters along the shore of a lake or along the quieter sections of streams. They seem to prefer areas with plenty of submerged aquatic plants. Like many fish, the male establishes and defends a territory. The female deposits her sticky eggs on fibrous roots or organic debris. The eggs receive indirect protection from the male as he continues to guard his territory and to attract additional females. Iowa darters are found throughout the Kawarthas.



Northern redbelly dace

In quiet, vegetated ponds, watch for the brook stickleback. Belonging to its own, separate family, the stickleback has a series of spines ("stickles") down the back. What is most unique about this fish, however, is how it reproduces. In the spring, the male establishes a territory and actually turns black in colour. Using a secretion from the kidney, he then glues fragments of vegetation to the stems of aquatic plants and builds a three-dimensional nest about the size and shape of a golf ball. He even fashions an entrance way. The male stickleback then proceeds to make a series of darting movements along with nips and nudges to coax the female into the nest. After she lays her eggs, he chases her away, and then enters the nest himself to fertilize the eggs. Once he is done, he will do his best to lure in other spawning females. The hard-working male guards the eggs until they have hatched and the young have grown to a centimetre or so in size. Should any of the young wander away from the nest prematurely, the male gathers them into his mouth and deposits them back in the protective enclosure.

The very different spawning strategies used by fallfish, redbelly dace, Iowa darters and brook sticklebacks are excellent examples of how evolution continually finds unique ways of meeting the challenge of reproduction – and every other aspect of an organism's survival. There is no master plan or grand design involved.

DON SOME SUNGLASSES

With a little time and effort, it is possible to watch the reproductive behaviour of non-game species such as those mentioned above. But, unless you decide to do your viewing from underwater with a mask and snorkel – actually a lot of fun - surface opacity is almost always a problem. It can be reduced, however, by wearing polarized sunglasses and by trying to get two or three metres above the water, such as from a bridge or climbable tree along the shore. Take along a pair of binoculars to scan the water from above. Clear, sunny days are better than overcast days for fish-watching and visibility is usually best when the sun is high in the sky. At some point, you will probably want to enter the water. A bathing suit and sneakers usually suffices when the water is warm. However, chest-high waders are necessary in cold water conditions. To actually identify some of the fish you are seeing, you may need to catch them with a dip net and place them in a clear, plastic jar for optimal viewing. "The Royal Ontario Museum Guide to Freshwater Fishes of Ontario" is an excellent resource to fish identification and ecology.

You don't have to go far from home to find interesting fish. Jackson Creek has a wide variety of species including creek chub. The Indian River has fallfish. I often see various minnow species even in Bear's Creek in the north end of Peterborough. Harper's Creek, located in the south end of the city, is another good destination. As far as I know, this cold-water stream still has a small breeding population of brook trout - despite all of the urban run-off it has to endure.

Drew Monkman is a Peterborough teacher and author of Nature's Year in the Kawarthas. He can be reached at dmonkman1@cogeco.ca. Visit his website and see past columns at www.drewmonkman.com.