

# Brook stickleback

*Culaea inconstans* By Tom Dickson

One of the most intriguing—and frustrating—things about fish is that we so rarely see them. The exception is when anglers haul one up from below the water surface. But because the vast majority of Montana's 85 fish species aren't caught, few of us ever get a chance to view and appreciate these marvelous members of Montana's natural history.

That's certainly the case with the brook stickleback, a tiny native fish found only in northeastern Montana waters. This little oddball—a species actually related to ocean-dwelling seahorses—occasionally shows up in bait buckets, accidentally collected along with minnows and shiners. But for the most part, it remains invisible.

## Identification

The brook stickleback is a medieval-looking fish unlike any other in Montana. It has a large head, large eyes, scaleless sides covered with a row of bony plates, five well-defined spines on its back, and a tiny pelvic fin comprising one spine and one soft ray.

This two- to three-inch-long fish is olive green, with mottled light spots and dark wavy lines along the sides. It has a long, beaklike snout, tiny needlelike teeth, and a protruding lower jaw.

## Habitat and Range

As the name suggests, the brook stickleback lives in streams, though it's also found in some rivers, lakes, and ponds. It seems to do best in cool, clear waters with abundant vegetation.

In Montana, it's found mainly in the Milk River and its tributaries as far west as Havre, and in Fort Peck Reservoir and the Missouri River downstream to the North Dakota border. As is the case with several eastern Montana fish, such as the shortnose gar, this

**Scientific name**  
*Culaea* is a name that scientists created for this unique group of fish, and *inconstans* is Latin for "variable," the meaning of which is unclear.

is the westernmost range (in the Lower 48) of a species mainly found in the upper Midwest. Like Montana's freshwater drum, another fish closely related to saltwater species, the stickleback likely ended up in the middle of North America after oceans receded and the fish evolved from marine animals trapped in inland waters.

## Eat and Eaten

The brook stickleback eats about anything it can get in its tiny mouth. Food includes water fleas, algae, fish larvae, and ants and other small terrestrial insects that fall into streams.

Despite its formidable spiny defense, brook sticklebacks are eaten by many piscivores, including sauger, walleye, yellow

perch, crappies, sunfish, bass, and some fish-eating birds such as kingfishers.

## Reproduction

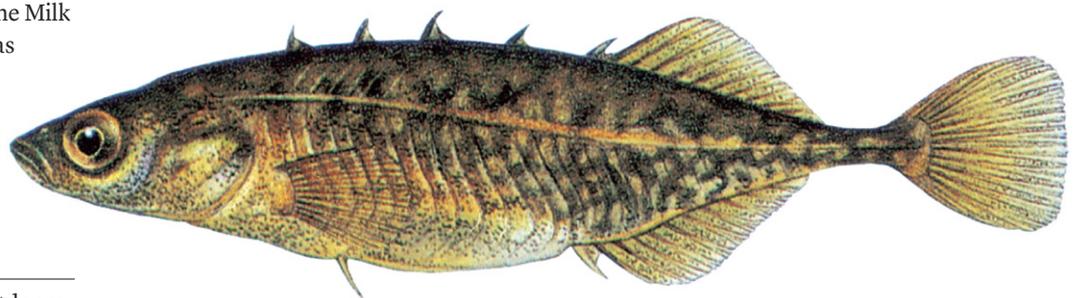
No studies of brook stickleback reproduction have been conducted in Montana. Based on research in midwestern states, it's a bizarre affair involving a fair bit of nursery room destruction and repair.

Spawning begins in late spring. The male, which turns a velvety black, builds a nest of algae, sticks, and other plant matter using a sticky secretion formed in his kidneys. With his mouth, he shapes the golf ball-sized structure, which is attached to an aquatic plant stem, and then opens a cavity in the nest.

When a female enters his territory, he rams her a few times with his head then nudges her toward the nest opening. After entering, she vibrates vigorously, releasing eggs, then plunges forward, bursting out the back of the structure. The male enters and releases milt before patching up the hole. Then he guards the eggs. Just before they hatch, he tears apart the nest with his mouth, creating a larger, meshlike area where the tiny fry can hide from predators for a few days before heading out on their own.

## Conservation Status

Because so little is known about brook sticklebacks, no one knows how they are faring in Montana. As in other states, the biggest threats to this clean-water species are likely silt and nutrients washing into streams from farm fields. 🐾



Tom Dickson is editor of Montana Outdoors.