

Wonders under water

By Tom Dickson

Whenever I drive over or past a river, lake, or stream, I like to imagine what's swimming down there beneath the water surface.

If I'm in western Montana, it could be some of our famous salmonids: native west-slope cutthroats, federally protected bull trout and Arctic grayling, mountain whitefish, non-native browns and rainbows, or those pretty little brook trout beloved especially by older anglers who hike the hills to fish their secret stretches. But there's much more.

A person poking around these waters might also encounter largescale suckers, peamouth, northern pikeminnows, longnose dace, or various sculpins—little bug-eyed fish with oversized heads that scurry along stream bottoms. One of the most seasonally beautiful fish is the redbside shiner, a 4- to 6-inch minnow that lives in northwestern rivers, lakes, and ponds. For most of the year a drab olive brown, during spring breeding season the male lights up with bold, bright crimson stripes along its sides.

Across the Continental Divide in central and eastern Montana, I'll drive past streams, lakes, or rivers with even greater piscatorial diversity. That's due to the region's warm, fertile waters and the vast Missouri River watershed stretching hundreds of miles to the east.

Well known are the game fish: walleye, sauger, paddlefish, smallmouth bass, northern pike, channel catfish, black and white crappie, and yellow perch. Far less so are the freshwater drum, a close cousin to the salt-water redfish, and the goldeye, a species snubbed here for its mushy, bony fillets but prized in Manitoba as a delicacy when smoked over an alder fire.

Also swimming in prairie streams are

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several shiner species, named for their iridescent scales that flash in the underwater sunlight. Shiners, dace, and chubs are all members of the minnow family. Most of these leucisids, as biologists call them, have a scaleless head and spineless fins, plus one to three rows of pharyngeal “teeth.” Minnows use these hard throat structures like a mortar and pestle, grinding food against a rough-textured pad until soft enough to digest.

Minnows also possess what's called a Weberian apparatus, a series of small bones connecting the swim bladder to the inner ear that allows the fish to “hear” vibrations—like those from a fast-approaching sauger.

A particularly distinctive minnow is the northern pearl dace. This glacial relic was pushed south from Canada 15,000 years ago with the last ice age, then left behind in small, cool streams north of the Hi-Line as the glaciers retreated.

Then there's the Iowa darter, not a minnow but a tiny fish that resembles one. A slender, 2-inch-long cousin of the walleye, sauger, and yellow perch, it zips along stream bottoms in short bursts. In spring the male turns downright tropical, with 10 bright, bluish-green bands across each side and a spectacular blue and red dorsal fin.

Maybe the strangest northeastern Montana native fish is the brook stickleback, a species related to, of all things, the ocean-dwelling seahorse. It has a large head, oversized eyes, and scaleless sides lined with a row of bony plates. It also sports five short,

thick spines along the back that look like the spikes on a cartoon bulldog's collar. As with several eastern Montana fish, including the toothy shortnose gar, this is the western-most range in the Lower 48 of a species most commonly found in the upper Midwest.

Fish are an important yet largely invisible part of Montana's natural heritage. Birders and wildlife watchers can marvel at animals with binoculars or the naked eye. But the only way to see many fish species is to catch them, which is one reason many of us go fishing. Catchable species remain hidden beneath the water's surface, mysterious and beyond our reach, except for those few magical moments when we pull one up from the depths to admire it, live and fully colored.

One way for people to at least see images of Montana's 57 indigenous and 34 non-native fish species is via the Montana Natural Heritage Program's Field Guide (fieldguide.mt.gov), or the *Fishes of Montana* app developed by FWP and Montana State University. FWP is also working on a *Fishes of Montana* book, featuring color illustrations, due out next year.

A few months ago, people across the globe marveled as NASA scientists maneuvered a remote helicopter along the surface of Mars. I did, too. But I couldn't help but wonder, as we focused our collective attention on a planet 200 million miles away, what marvels await discovery in the underwater worlds many of us pass each day down here on Earth. 🐟