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Eye on the Environment

Westslope Cutthroat Trout: A Source of Pride

By Andrea Stephens, Northwest Connections

A couple of my favorite family photos from last summer are of my two daughters attempting to catch their first cutthroat trout. I might feel rather smug sending those photos out in a Christmas letter (if I actually got around to it) because I know friends and family who live in far-flung spots around the country might be envious; it's unlikely they've ever held a slippery westslope cutthroat trout while it regains its orientation, then watched it torpedo away for deeper water.

You've probably got your own list of reasons you feel somewhat superior for living in western Montana, but certainly the short list should include our native cutthroat trout. I want to admit right here that I normally go for the less glamorous critters. I prefer to prowl around marshes hunting aquatic beetles to feed to my captive giant water bug. Do trout really need another cheerleader? But how can you not love westslope cutthroat trout?

Our local streams are rugged, cold, shaded, steep, full of wood. Only a few types of fish have managed to find a way to thrive here. Westslope cutthroats spawn exclusively in our continent's headwaters in this region. You can find rainbow trout in most states in the country; but you're going to have to come to western Montana if you want to find westslope cutthroat.



Andrea's daughter attempting to catch her first cutthroat trout. Photo by A. Stephens.

It turns out there are at least 14 different subspecies of cutthroat trout, each occupying a geographically distinct habitat in the western U.S. Their appearance, personality, and genetic makeup change as you range from south-central Montana's Yellowstone cutthroat to Utah's Bonneville cutthroat to Colorado's Greenback cutthroat.

If you live in one of the places where one of these different cutthroat groups are hunkered down, you can fairly claim that yours lives "nowhere else in the world!" In fact, Colorado, Utah, Nevada, New Mexico, Idaho and Montana **ALL** claim a different cutthroat trout subspecies as their state fish. We're all rightfully proud of what we see as uniquely ours.

Each region of the West has its own special type of cutthroat, but the diversity of this fish doesn't end there. Our homegrown variety the westslopes come in three different flavors: ones that migrate to lakes to grow up after they spawn, ones that migrate into big rivers after they spawn, and ones that remain their whole lives in the little streams where they spawned. Migratory individuals have been known to travel up to 125 miles through our local interconnected river systems to spawn; salmon

aren't the only ones out there able to lay claim to this sort of feat.

Cutthroats are so unique, they tend to give geneticists a headache, or perhaps a special thrill. Cutthroat can interbreed with rainbow trout where their populations overlap. This means that, contrary to what we all learned in 8th grade biology, these hybrid offspring are not sterile like mules, but can actually reproduce and further backcross with fish of either parent group.

In the field, anglers and biologists alike may not be able to distinguish genetically pure westslope cutthroats from those which have hybridized with rainbows or Yellowstone cutthroat. This is particularly true when we're talking about trying to distinguish fish which have parents of two different species from fish which have one of these hybrid parents and one even further backcrossed parent. Only genetic analysis of tissue samples can reveal hybridization, or the degree of hybridization, in many cases.

Obviously, Montana's own westslope and Yellowstone cutthroat are genetically distinct. But some of the 14 subspecies are actually more genetically different from each other than they are from rainbow trout, a whole separate species.

Genetic diversity within a species manifests both as differences in appearance and in microscopic detail only geneticists can detect. For example, Lahontan cutthroat in Nevada hardly seem to have any spots when compared with ours, which are covered above their lateral line and especially toward their tail with dense black dots. But genes also influence unseen things like timing of migration and growth rates, the sum of which enables our cutthroats to thrive in our high mountain streams, complete with the random events which can influence those streams, like fires, floods and drought.

Some bad news: Up until the mid-1900's, westslope cutthroat trout were the most numerous fish in the Swan Valley, living in the major lakes of the valley and moving freely through 500 miles of stream habitat, including the Swan River and its tributaries. Genetically pure fish are now found in only about 20% of their historic range in the Swan, tough but fragile little survivors holed up in headwaters habitat. Cutthroats are absent from 29% of their native habitat in the Swan.

The remaining 51% of historically occupied stream miles are now inhabited by hybrids. When fish hybridize, even westslopes with Yellowstones, resilience of the population can decline, decreasing the ability of individuals to live within the challenging, variable environment that spawned them.

Some good news: This beautiful fish remains, and in some cases is abundant. We can teach our children about them, fish for them, eat them (check your regs!), watch them, and feel smug about living near them. Conserving native trout entails the usual set of watershed restoration needs. And especially for cutthroat, conservation hinges on saving the broad range of genetic diversity found within the species as a whole.

Even if the genetic material is responsible for traits we can't see, it's what has made this group of fish masters at adapting to the unique mountain homes we share with them.