Something's Fishy: A Genetic Investigations Of Sculpin Species In Western Montana

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Sculpin (*Cottus* spp.) are small, cryptic, bottom-dwelling fish native to cool and coldwater systems throughout North America. Although three species of primarily stream-dwelling sculpin are thought to occur in Montana (one of which is a species of concern), their taxonomy, distribution, and origin are not well understood. In western Montana, the present distribution of sculpin species may have been shaped by both historical events, e.g., the Columbian Ice Sheet, and contemporary landscape changes (passage barriers, climate change, pollution, etc.). To evaluate sculpin presence, and species diversity, we analyzed sculpins from river drainages throughout western Montana—the Clark Fork, Blackfoot, Flathead, Bitterroot, Kootenai, Gallatin, Madison, and Missouri—east and west of the Continental Divide. We analyzed 135 samples at the mitochondrial DNA COXI gene and at 11 microsatellite DNA loci. Preliminary results of genetic analysis suggest the presence of four distinct species with hybridization among three of the species in some locations. Hybridization led to uncertainty in species designations based on morphology, but even genetically pure fish were occasionally misidentified. One species may represent an undescribed taxon that is limited in its distribution to the St. Regis drainage, although its relation to sculpin in Idaho is unknown. A second species, previously thought to be *Cottus bairdii*, is distinct from that taxon and is distributed on both sides of the Continental Divide.