

SPATIAL PARTITIONING OF TWO SCULPIN SPECIES IN WEST CENTRAL MONTANA^{AFS}

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Although sculpin are often important components of fish communities in coldwater streams, their ecology, movements and population structure are poorly understood. To understand how sculpin are distributed within the upper Clark Fork drainage of Montana, we investigated phylogenetic relationships, species differentiation and movement patterns of sculpin in eight tributaries. We determined phylogenetic relationships and identified patterns of genetic differentiation using morphometric measurements, meristic element counts and genetic sequence data from the mitochondrial control region. In each stream, we collected sculpin from two locations; typically from one site as far upstream as they were

distributed and another site close to the mouth. In three streams, anthropogenic barriers limited movements between sample sites. Morphometric measurements, meristic counts, and genetic analyses confirmed the presence of two sculpin species in each stream (*Cottus cognatus* and, the previously undocumented, *C. sp. cf. bairdi*). Furthermore, sculpin were distributed similarly among streams regardless of passage barriers. In general, we found only *C. cognatus* in the upper sites and *C. sp. cf. bairdi* in the lower sites. Movement studies revealed that *C. sp. cf. bairdi* was highly mobile (moving frequently, and up to 200 m) whereas *C. cognatus* was immobile during the 5-wk study, despite similar densities of sculpin in both sites. These data suggest that two allopatric species of sculpin are apparently widely distributed in the upper Clark Fork watershed and that behavioral mechanisms, e.g., life history tactics, may be responsible for isolating these two species.