Influence Of Migratory Barriers On Genetic Diversity And Similarity Among Bull Trout Populations In Glacier National Park, Montana

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Adfluvial populations of bull trout (*Salvelinus confluentus*) in Glacier National Park, Montana, occupy a complex landscape of interconnected and fragmented lake habitat. Natural barriers, e.g., waterfalls, may limit migration among available habitat and result in fragmentation and isolation of some populations. Polymorphic microsatellite loci were used to examine patterns of genetic diversity and similarity among populations of bull trout in Glacier National Park and to examine differences between populations isolated by migratory barriers and those occupying more interconnected habitat. One hundred ninety- six bull trout, comprising 16 populations, were genotyped at 10 microsatellite loci. Five populations were isolated by migra-tory barriers, i.e., waterfalls with a vertical drop ≥ 1.8 m. Expected heterozygosity (averaged across loci) varied from 0.18 to 0.73 among populations and was lower on average for populations isolated by barriers (0.27 ± 0.09) compared to those not isolated (0.61 ± 0.0). Allelic

diversity (averaged across loci and adjusted for sample size) varied from 1.47 to 3.45 among populations and was lower on average for populations isolated by barriers (4.53) compared to those not isolated (6.46) based on a hierarchical classification. Pairwise Fst values varied from 0.00 to 0.69 with larger values representative of comparisons between populations isolated by barriers. These data indicated that natural barriers have influenced genetic diversity and similarity among bull trout populations in Glacier National Park.