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Landscape Genetics of the Marbled Salamander, *Ambystoma opacum*, in a Nationally Protected Park

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Abstract

Landscape features may influence the patterns of migration and dispersal of amphibian species and create genetic structure. A primary goal of landscape genetics is to analyze these influences in order to make more informed management decisions. We sampled larvae from 50 breeding ponds within the boundaries of Mammoth Cave National Park and genotyped 12 individuals per pond at 10 microsatellite loci to estimate gene flow between ponds. We used GIS layers of habitat types to conduct a least-cost path analysis and determine the relative cost of movement through each habitat type. We were interested in answering two questions: does structure exist in this continuous landscape, and does a single pond equal a mating population? Preliminary data indicate that structure does exist at the park. Our results show that a landscape genetics approach is an appropriate mechanism for determining population structure and the size and locations of randomly mating populations.