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**Site selection by the Jefferson's and spotted salamanders based on substrate pH**

**Abstract—**Population declines in amphibian species have been linked to a variety of factors, with the most significant being habitat loss and fragmentation. One potentially important contributor to habitat loss in Kentucky is strip mining. Soil and vegetation at reclaimed mining sites are typically altered versus sites that have not been mined, and soil from reclaimed mine sites is commonly acidic. The objective of this study is to look at the effects of soil acidity on microhabitat selection of salamanders post-metamorphosis. To do this, we observed the ability of spotted salamanders (*Ambystoma maculatum*) and Jefferson’s salamanders (*A. jeffersonianum*) to detect, and select among a range of acidic environments (pH4-pH7) in experimental chambers. We hypothesized that salamanders will be able to select against acidic environments, suggesting that they may be able to avoid environments with high acidity during dispersal from their natal pools. Salamander behavior was recorded with time-lapse photography and data were analyzed using analysis of linear models. We found differences in the behaviors leading to microhabitat selection by each species, and the data suggest a general avoidance of acidic substrates. Among individuals within species, we observed high variability in the duration of behaviors contributing to selection of substrate microhabitat. In total, these data indicate that there is variation in the ability or willingness of individuals to discern differences in substrate acidity both at the intra- and inter-specific level. This suggests that conservation action aimed at reclaiming mine sites should manage soil acidity with the observed variation in mind.