

How much effect does a microhabitat change truly have?

September 5 2014, by Jason Snell

To understand the behavioral patterns of all organisms co-existing together, we must examine our ecosystems, habitats, and even microhabitats. Even variation in climate change or human influence at small scales can ultimately have large impacts on the ecosystem as a whole.

A study was recently conducted in Mark Twain National Forest (Missouri, USA) that examined how terrestrial salamanders use their microhabitat in order to predict their reaction to natural or human-based changes. The article "Predicting Variation in Microhabitat Utilization of Terrestrial Salamanders," in the journal *Herpetologica*, discusses the results of this 3-year study and predicts the outcome of how these potential changes could affect the salamanders.

Terrestrial salamanders typically have year-round associations with damp habitats, thereby allowing them to obtain oxygen across their moist skin. Many of these amphibian species are found in areas with densely wooded cover, which retains moisture longer between rainfalls. The authors quantified the patterns within the salamanders' microhabitat use across seasons, years, and weather patterns.

Nearly 2,500 salamanders were captured during the course of the study. The authors determined that the specific type of microhabitat where the salamanders were captured was dependent on the amount of time elapsed since the last rainfall. In addition, the influence of the elapsed time varied across years of the study, because 2012 was a drought year

in Missouri. Salamanders were most abundant within leaf litter, and closer to the soil surface where substrate coverage over the forest floor keeps the ground moist when there is more rainfall. Based on their having quantified this pattern of microhabitat association, the authors suggest that changes caused by the climate (i.e., drought), or human activities (i.e., wood harvesting or prescribed burns, which can decrease coverage), will have a substantial effect on terrestrial salamanders.

More information: Katherine M. O'Donnell, Frank R. Thompson, III, and Raymond D. Semlitsch (2014) "Predicting Variation in Microhabitat Utilization of Terrestrial Salamanders." *Herpetologica*: September 2014, Vol. 70, No. 3, pp. 259-265. doi: [dx.doi.org/10.1655/HERPETOLOGICA-D-13-00036](https://doi.org/10.1655/HERPETOLOGICA-D-13-00036)

Provided by Herpetologica

Citation: How much effect does a microhabitat change truly have? (2014, September 5) retrieved 9 April 2024 from <https://phys.org/news/2014-09-effect-microhabitat.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.
