Public Abstract

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Title:Initial Juvenile Movement of Pond-breeding Amphibians in Altered Forest Habitat

Natal dispersal is the movement of juveniles from their birth place to a new site in another breeding population. For many animal species, this is critical for maintaining connectivity and gene flow between populations. However, as a result of the difficulties inherent in dealing with small individuals, studies of juvenile movement are exceedingly rare for any species. My work has aimed to bridge this gap in our understanding by exploring the first stage in natal dispersal, the initial juvenile movement phase, in pond-breeding amphibians, a group of organisms threatened by habitat loss and alteration.

I conducted a mark-recapture study of juvenile Spotted Salamanders (*Ambystoma maculatum*) and Green Frogs (*Lithobates clamitans*) emerging from natal ponds within experimental altered forests. By individually marking and releasing over five thousand juveniles I was able to identify previously unobserved behaviors such as differential movement success and settling among the forest treatments, and habitat switching, a novel result for these species. An additional study of juvenile Spotted Salamanders and Ringed Salamanders (*A. annulatum*) in experimental enclosures sought to identify explanatory factors in their movement patterns, such as small-scale habitat cues that differ in anthropogenically altered forests. Here, clearcuts and areas with compacted soils increased the probability continued movement in both species, whereas greater refuge densities prompted juvenile Spotted Salamanders to stop and settle. The findings of these studies go beyond previous examinations of juvenile movement by revealing how the interplay of habitat and behavior produces species distribution patterns seen at larger scales.