GRAY TREEFROG BREEDING SITE SELECTION AND OFFSPRING PERFORMANCE IN RESPONSE TO FOREST MANAGEMENT

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ABSTRACT

Amphibian diversity and abundance are generally reduced following clearcut logging. These impacts often last for decades, but little is know about why diversity and abundance are depressed. I examined gray treefrog breeding site selection and subsequent offspring performance following experimental forest manipulations. Using wading pools and cattle tanks, I found that gray treefrogs select breeding sites in clearcuts more than those in forested habitats. Additionally, females preferred breeding sites close to forest edges over sites farther into clearcuts. To determine the influence of breeding site selection of the offspring, I stocked cattle tanks along a forest-clearcut gradient with gray treefrog tadpoles. Tadpole survival was greatest in the clearcut treatments. However, tadpoles in the clearcuts also had a shorter larval period. Having a shorter larval period can benefit individuals by reducing the time to maturity, thereby potentially increasing lifetime reproduction. Despite the preference for open canopy breeding sites, clearcuts can create resistance for females moving between terrestrial forest habitat and aquatic breeding sites. Although reduced canopy cover over breeding ponds provides some benefits for tadpoles, logging operations should avoid isolating aquatic habitat from forested uplands.