

Amphibians are an essential group of organisms for understanding ecological dynamics due to their acute sensitivity to temperature, precipitation, and other environmental variables. Northeast Georgia in particular is ideal for studying amphibians due to the elevated diversity of plethodontid salamanders in the southern Appalachian Mountains. The purpose of this study is to investigate the effects of biotic and abiotic factors on salamander diversity and ecology. This study utilized drift fence arrays with pitfall traps to survey local salamander populations daily for a 90-day period in two forest sites (Sites A and B) in Lumpkin County, Georgia. A third site (Site C), considered ideal for local salamander populations, has been established with a drift fence array and pitfall traps for further sampling over another 60-day period between May-June in conjunction with Sites A and B. Abiotic variables, including ambient temperature, soil temperature, air humidity, light intensity and soil pH, were measured daily at both sites. A point quarter tree survey method was implemented to quantitatively assess differences in vegetation cover at all three sites; Site A is predominately planted loblolly pines, Site B is heterogeneous hardwoods adjacent to Site A, and Site C is predominately older growth hardwoods with minimal disturbance. Our findings show that Sites A, B and C differ in salamander community composition and in terms of soil characteristics measured. There were significant differences in both soil moisture and soil pH, p values of 0.0397 and 0.0186 respectively. These data show that extremely localized biotic and abiotic variables influence salamander distribution in northeast Georgia, contributing to the overall understanding of salamander ecology, diversity, and abundance for conservation efforts in northeast Georgia.