

SALAMANDER ABUNDANCE IN SMALL CLEARCUTS

Dana A. Soehn and Dr. Edwin D. Michael¹

Abstract: Recent research has shown that some timber harvesting methods adversely impact salamander populations. Researchers have documented the virtual disappearance of salamanders in large clearcuts with population recovery times estimated from 20-60 years. The purpose of this study was to determine salamander abundance in small, 3-year old clearcuts at Cooper's Rock State Forest in northern West Virginia. Salamanders were sampled inside and outside 16 clearcuts (0.5, 1.0, 1.5, and 2.0 ha), using a nondestructive monitoring technique. A total of 152 sampling stations were established, each consisting of 12 boards (12" x 6" x 1") placed in a 3 x 4 configuration with 0.5 inches separating individual boards. From April through November of 1994, all boards were lifted and checked for salamanders every 2 weeks. Captured salamanders were given a unique toe clip, sexed, measured, and released. Individual recognition of salamanders allowed for monitoring of movements throughout the season and also a population estimate using a multiple mark-recapture technique. Microhabitat features, including soil temperature, surface temperature, soil moisture, litter moisture, litter mass, and soil pH, were measured at each station. Preliminary results indicate that salamanders are present in the three year old clearcuts, but estimated abundance is less than in the adjacent mature forest. Microhabitat conditions in these small patch cuts may more rapidly allow for recolonization of salamander populations to predisturbance levels, than would occur in larger clearcuts. A total of 742 individual salamanders were captured, with the redback salamander (*Plethodon cinereus*) being most abundant (85% of total captures).

¹Graduate Research Assistant and Professor of Wildlife and Fisheries, Division of Forestry, West Virginia University, P.O. Box 6125, Morgantown, WV 26506-6125.