Impacts of Prescribed Fire on Insect Diversity in Montane Long-leaf Pine Forest

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Restoration of southern longleaf (Pinus palustris) forests depends heavily on the use of prescribed fire. Frequent burning maintains open pine stands and their herbaceous understory by killing competing woody vegetation. Endangered bat communities also depend on public lands where longleaf pine restoration occurs, but their response to prescribed fire management is not clearly understood. Our objective is to assess how the availability of insects that bats feed on, are influenced by prescribed fire regimes in montane longleaf pine forests of northeastern Alabama. During May-August 2019, insect sampling was conducted at 73 sites in areas of the Shoal Creek Ranger District with short (1.8-3.5 year) and medium fire intervals (>3.5-8 year). Within each fire interval, fire recency impacts were examined by sampling sites that were <1-year post-fire, 1-year post-fire, and 2-3 year post-fire. At each site, we placed an elevated blacklight trap for 1 fair weather night and collected insects the following morning. The insects in each sample were oven-dried, identified to taxonomic order, counted, and weighed. Preliminary results suggest that insect biomass is greater at sites with short fire intervals compared to medium fire intervals. These data will provide forest managers with feedback on how forest restoration efforts using prescribed fire impact food resources that support the endangered bat community.