

Public Abstract

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Title:SPACE USE AND RESOURCE SELECTION BY EASTERN SPOTTED SKUNKS IN THE OUACHITA MOUNTAINS, ARKANSAS

Once a common and economically important furbearer, the eastern spotted skunk (*Spilogale putorius*) is now listed as endangered, threatened, or a species of conservation concern throughout much of its historical range. Virtually nothing is known about the fundamental ecology of the species or the potential effects of forest management strategies on habitat use. To elucidate home range dynamics and habitat selection, we conducted telemetry-based field work in the Ouachita National Forest of western Arkansas. During two years of field work we collected locations at 28-hour intervals for 33 eastern spotted skunks. Using home range estimators and overlap analysis, we found significant seasonal and gender differences in the home range dynamics. Adult males maintained much larger ranges during spring than other seasons. Female ranges were smaller than male ranges and very little home range overlap was observed, especially between adult females. Using a resource selection analysis, we determined that young shortleaf pine and hardwood stands were selected over other available habitat types. A comparison of used and available resting and denning sites revealed similar patterns; selection for sites with young pine and old hardwood stands, higher canopy closures, rock and vine densities, steeper slopes, and smaller site entrances. These findings suggest that eastern spotted skunks are solitary carnivores that select structurally complex habitat that enhances protection from predators. The species may be vulnerable to forest ecosystem changes that result in a more open canopy and herbaceous understory, a management strategy used extensively in parts of the Ouachita National Forest.