THE IMPACTS OF MINING ON THE HABITAT ECOLOGY OF RACCOONS IN EAST-CENTRAL TEXAS

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Habitat alterations associated with strip-mining and reclamation may reduce the suitability of an area for wildlife by redistributing requirements for survival and reproduction. I evaluated several predictions regarding the impacts of habitat alterations on wildlife by comparing patterns of landscape use and behavior of raccoons (*procyon lotor*) in unmined and reclaimed habitats on the Big Brown Mine in Freestone County, Texas. I hypothesized that changes in vegetation composition and structure and the spatial distribution of habitat types would influence diel activity and movements, habitat use, resting site use, home range size, and ultimately, the demography of raccoons. I captured and radio-collared 12 and 4 adult raccoons in unmined and reclaimed areas, respectively, and observed patterns of habitat use, and annual and seasonal home range sizes. During each season, I monitored continuous 24-hour activity and movement patterns of 4 radio-collared raccoons in unmined and reclaimed areas. I relocated inactive radio-collared raccoons to evaluate resting site use in unmined and reclaimed areas. Estimates of population demographics were based on live-trapped raccoons. Raccoons inhabiting reclaimed areas had larger annual home ranges and their movement patterns within and across the reclaimed landscape suggested those areas offered less abundant and/or more isolate resources for raccoons. Raccoons in unmined habitats used trees more often as resting sites than did raccoons in reclaimed areas; brushpiles were used more often than trees by raccoons in reclaimed areas. Improved pasture was the most abundant habitat type in reclaimed areas and was underutilized by raccoons. Analyses of trapping success and population sex-age structure suggest that reclaimed areas may be incapable of supporting population densities found in unmined habitats. Collectively, these findings support the conclusion that reclaimed habitats may not be mitigating the loss of unmined woodlands. Although it **was** not possible to test the validity of all aspects of the conceptual model, results from this study provided support for the processes it identified and its predictions regarding the potential impacts of strip-mining on raccoons. Based on these results, I discussed 5 recommendations to improve reclamation efforts.

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