Assessment of Habitat Conditions and Corridor Development for Black Pine Snakes and Gopher Tortoises

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Abstract: Longleaf pine forests of the Southeast are important habitats for many rare species. The federally-threatened gopher tortoise (*Gopherus polyphemus*) and black pine snake (*Pituophis melanoleucus lodingi*) are indigenous reptiles that are dependent on longleaf pine forests. Habitat fragmentation and intensive land use often create management and restoration challenges in the recovery of these species. Evaluation and enhancement of habitat conditions on private and public lands and creation of corridors could improve conservation outcomes for these reptiles and species associates, such as grassland birds. Our study investigates habitat conditions occurring in different pine forest types and potential corridor development on private lands in south Mississippi. The study is designed to quantitatively assess habitat conditions for gopher tortoises, black pine snakes, and bobwhite quail on private lands enrolled in Farm Bill conservation programs, commercial pine forests, and longleaf pine forests managed for gopher tortoises. A total of 34 study sites are included in the study. Data on faunal occurrence and abundance and edaphic and vegetation conditions will be collected from 2009–2010. Faunal inventories will include tortoise burrow counts and inspection, drift fence surveys combined with funnel box traps for black pine snakes, small mammal trapping, spring grassland bird surveys, call counts for bobwhite quail, and fireant mound counts. Associations between targeted fauna densities or occurrence and habitat conditions will be evaluated. This information is intended to improve approaches used in the study will be used to identify private lands for potential enrollment in longleaf pine restoration programs. This prioritization approach is anticipated to assist natural resource professionals in development of corridors for rare reptiles and their species associates.

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