

## **Colonization of American Black Bears in Mississippi**

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**ABSTRACT:** Reductions in American black bear (*Ursus americanus* spp.) distribution and abundance in the southeastern United States are often attributed to habitat modification, sport and illegal hunting, and trade. Black bears are native to Mississippi and historically occurred throughout the state. Earlier bear research in Mississippi emphasized their historic range, stakeholder perceptions, identifying suitable habitats with emphasis on public land, and assessments of human attitudes toward reintroducing bears. In 2008, a 5-year study of black bears was initiated in partnership with the Mississippi Department of Wildlife, Fisheries and Parks to refine the existing black bear habitat suitability model, evaluate black bear dispersal, and predict black bear colonization across Mississippi. I will capture bears throughout Mississippi, emphasizing the Delta and Coastal regions. Using data from  $\geq 20$  bears equipped with GPS radio collars, I will estimate home range size and use Ecological Niche Factor Analysis to estimate bear habitat selection. Models including least cost path and zonal corridor analysis will be evaluated using bear location and habitat data to define potential corridors. I will estimate, delineate, and rank corridors suitable for bear movement and potential habitat conservation. From the refined habitat use map, corridor estimations, bear movements, and dispersal I will predict the spatial trajectory or colonization potential of this bear population. This study will provide insights into the ecological processes of a colonizing large carnivore species in a human-altered landscape. Knowledge of black bear habitat selection and colonization potential in Mississippi will help managers refine existing and future habitat restoration and species management efforts. Predicting where and when black bears will become established will help to prioritize public information efforts to increase awareness and reduce negative human-bear interactions and provide baseline data to assist managers in determining the feasibility, based on habitat, of sustaining a viable bear population in Mississippi.