

Multi-year Population Estimates of an Expanding Black Bear Population in the Interior Highlands, Arkansas

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Abstract: American black bear (*Ursus americanus*) populations in the Interior Highlands, Arkansas, have expanded since reintroduction in the late 1950s and early 1960s requiring management of harvests and nuisance complaints. Success of bear conservation efforts and the effects of nuisance harvests cannot be evaluated without reliable information on population abundance, trends, and distribution. Moreover, concern and interest in bears from the general public, combined with a growing need to integrate land management efforts to conserve biodiversity, have intensified the need for efficient, well-coordinated management efforts for black bear in the Interior Highlands. In this study we used noninvasive genetic sampling (five seven-day trapping sessions in June and July) to estimate the population size of black bear populations at two locations in the Interior Highlands: the Ouachita Mountains (2006–2008) and the Ozark Mountains (2009–2011). During the three years of monitoring in the Ouachita Mountains, 138, 80, and 458 hair samples were collected and 42, 28, and 59 individual bears were detected. During the three years of monitoring in the Ozark Mountains, 730, 669, and 1490 hair samples were collected and 152, 156, and 189 individual bears were identified. Three consecutive years of data for each area allowed us to use the Robust Design with the Huggins Estimator in Program MARK to estimate population abundance in our two study areas. Capture probabilities varied by year, emphasizing the need for multiyear monitoring for population estimates of black bear.

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