Wild Turkeys are a valuable game species and may serve as indicators of ecosystem health. For these reasons, the general habitat associations and demographic parameters of turkey populations across their range are well documented. Turkeys generally prefer open forests or woodlands with mature trees, and home ranges are extensive and vary across their annual cycle. During the breeding season, nest survival depends on a balance between understory cover and density that may reduce predation risk. However, habitat use throughout the remainder of the year remains relatively unclear. Moreover, the influence of habitat management on turkey habitat use and reproduction is mostly unknown. Experts think that the introduction of disturbance, using controlled burns in the forest understory, will improve the quality of habitats for turkeys.

In January of 2015, biologists with the Illinois Department of Natural Resources (IDNR) and Illinois Natural History Survey (INHS) initiated a research project associated with goals outlined for Wild Turkeys in the Illinois Wildlife Action Plan. These goals include increasing the population and harvest of Wild Turkeys by 20%, and improving our understanding of how management actions can be designed to increase populations. Based on these
goals, we are working towards meeting the following three objectives: (1) Use micro-GPS and traditional telemetry to examine the effects of habitat and landscape features as well as forest management on Wild Turkey habitat use, survival, and reproductive success; (2) Use micro-GPS telemetry to understand variation in fine-scale movements and habitat use of up to 150 Wild Turkey hens throughout their annual cycle; (3) Use results derived from micro-GPS telemetry data to inform forest management plans to benefit Illinois turkey populations.

From February through March of 2015, we captured 43 Wild Turkeys in Stephen A. Forbes State Park and 7 in the Lake Shelbyville Wildlife Management Area using drop nets. For each turkey captured, we recorded sex, age, and weight. Overall, we captured 18 males: 5 adults and 13 juveniles, and 32 females: 12 adults, 17 juveniles, and 3 were of unknown age. All turkeys were banded with stainless steel rivet bands and micro-GPS transmitters were tied onto the back of each hen. During this first year of the project, a total of 33 micro-GPS units were deployed on 28 females at Stephen A. Forbes State Park, and on 1 male and 4 females at the Lake Shelbyville Wildlife Management Area. The micro-GPS units were programmed to record the location of a hen every two hours during daylight and once at midnight, every day for up to a year. The location data are stored on the transmitter and may be uploaded remotely from a distance (at most approximately 1 km). Remote downloads allow biologists to collect the data without disturbing nesting hens or influencing turkey movements.

The turkey location data were used to determine nesting locations during the breeding season, and will be used to determine flock roosting locations during the fall and winter. During the breeding season, we determined which hens were nesting based on clustered location data and calculated an approximate hatch date for the nest based on average laying and incubating periods. Following the hatch date, each hen was located using traditional telemetry to determine if the nest was successful (i.e., poults observed). If poults were present with a hen, the flock was relocated weekly for up to 15 weeks to estimate brood survival rates. Of the 11 hens whose data indicated nesting activity, only a single hen has been observed with poults. Following determination of nest fate, we located each nest and surveyed vegetation composition and structure surrounding the nest. We also surveyed vegetation at a randomly selected point 80 m from each nest to evaluate nest site selection by hens. We will continue to monitor all turkeys with micro-GPS units and will begin trapping efforts again in January 2016 for the second year of our ongoing research. Data collected from these hens will help us and local land managers assess whether forest management at each study site is influencing turkey movements and habitat use and having a positive effect on nesting and brood rearing.

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