

Dear Sue,

I am writing to present a summary report to the Audubon Society of Missouri regarding my Brown-headed Nuthatch research to date. Your support has been a tremendous benefit to the project, and I am deeply appreciative of the recognition and support that came with being selected to receive the 2011 Graduate Research Scholarship.

The purpose of my project is to research the habitat choices and breeding success of Brown-headed Nuthatches at the limit of their current range- and use the result to answer the question: "Can Missouri support a population of reintroduced Brown-headed Nuthatches?" We are addressing this question using a combination of radio tracking and surveys.

In 2011 we captured 12 Brown-headed Nuthatches from 7 breeding groups and determined their home ranges using radio telemetry. Radios weighed less than two drops of water and they fell off of the birds after about a month. Preliminary analysis indicated that the birds have remarkably large home ranges for their size and that they typically use one area of their home range intensively in addition to the nest site. In 2012 we plan to track up 24 breeding groups. It will be interesting to see whether the same patterns hold for both years. The results should tell us how much land each bird might need if reintroduced to Missouri and what sort of resources make a particular location in a forest a good place to call "home."

We surveyed 125 sites in the Ozark and Ouachita National Forests in Arkansas in 2011. We plan to survey about 145 sites in 2012. Our preliminary analysis strongly suggested that how connected managed habitats are is a strong predictor of nuthatch presence.

Brown-headed Nuthatches are a species that specialize in pine and mixed-pine forests. Nuthatches prefer forests that are in "woodland" or "savannah" conditions. These are conditions where the forest is open and park-like, with an understory harboring a rich mix of grasses and wildflowers. Regularly occurring fires are necessary to create and maintain this condition.

On the Pine-bluestem Ecosystem Management Area where I conduct most of my research, prescribed fire has been used for over 30 years to manage pine savannahs and woodlands. This management has benefitted birds like the Brown-headed Nuthatch, Bachman's Sparrow, and Red-cockaded Woodpecker. About 19,000 acres of the project area have been brought into a substantially restored condition, and plans are in place to restore a total of about 250,000 acres.

Missouri currently has 45,000 acres of pine woodland and savannah in some stage of restoration and a proposal to restore 116,000 acres has been made. When my project is complete, land managers should be able to identify the quantity of habitat in Missouri that is suitable for Brown-headed Nuthatches in Missouri, and to predict how the amount of suitable habitat will change in response to management actions. This information can be used to decide whether a reintroduction should happen, and, if so, what needs to be done to assure that the reintroduction is successful.