

AVIAN NEST SURVIVAL AND BREEDING DENSITY IN COTTONWOOD
PLANTATIONS AND NATIVE FOREST FRAGMENTS OF SOUTHEAST MISSOURI

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ABSTRACT

I compared nest survival and breeding density between native bottomland forest and cottonwood (*Populus deltoides*) plantations over a three-year period for Acadian Flycatcher (*Empidonax vireescens*), Prothonotary Warbler (*Protonotaria citrea*), and Indigo Bunting (*Passerina cyanea*). Nest survival was similar in both forest types and varied throughout the season for all species. Acadian Flycatcher nest survival increased and parasitism by Brown-headed cowbird (*Molothrus ater*) decreased with increasing percent forest cover. Indigo Bunting nest survival was negatively associated with distance to edge and probability of parasitism decreased in larger patches. I used video cameras to record songbird nests in both forest types. Snakes and birds, including Brown-headed cowbirds, were nest predators.

I compared unadjusted abundance estimates from point count data to multiple model-based estimates. Densities of Acadian Flycatcher and Prothonotary Warbler were higher in native forest. Indigo Bunting densities were higher in plantations, but significance of the difference depended on the method used. Methods incorporating multiple time intervals and the full encounter history of each individual provided more precise estimates than traditional removal methods or distance methods.