

# SHORT-TERM CHANGES IN THE BREEDING BIRD COMMUNITY ASSOCIATED WITH A SOUTHERN PINE FOREST TREATED WITH A LIGHTNING-SEASON BURN

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## ABSTRACT

Lightning-season fires are used increasingly to manage pine forests in the southeastern United States. Lightning-season fires coincide with the breeding season of many species of birds, and concerns have been raised regarding the effects that lightning-season fires may have on bird populations. We studied the short-term responses of breeding birds to a 180-ha lightning-season fire conducted in a mature longleaf pine (*Pinus palustris*) forest in late May. Weekly surveys were conducted prior to and  $\leq 3$  months after the burn. Species richness was similar among surveys, but species composition (Morisita–Horn index) changed quickly following the burn and did not return to pre-burn values until  $\geq 6$  weeks after the burn. Some canopy-nesting species (e.g., pine warbler [*Dendroica pinus*] and white-breasted nuthatch [*Sitta carolinensis*]) were most abundant in the first few weeks following the burn, but most of the variation in species composition stemmed from changes observed among species that nest on or near the ground. Ground-nesting species such as Bachman’s sparrow (*Aimophila aestivalis*) and eastern meadowlark (*Sturnella magna*) were most abundant  $\geq 6$  weeks after the burn, while brush-nesting species such as gray catbird (*Dumetella carolinensis*) and yellow-breasted chat (*Icteria virens*) were most abundant prior to burns. We also documented several renesting attempts. Our results may have been influenced by the proximity of nearby pine forests that were not burned, but lightning-season burns also appeared to improve habitat suitability for several breeding birds, including several species of management concern.

*Keywords:* lightning-season burn, pineland birds.

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