MOVEMENTS AND SURVIVAL OF BACHMAN'S SPARROWS IN RESPONSE TO GROWING-SEASON PRESCRIBED BURNS IN SOUTH CAROLINA

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ABSTRACT

The Bachman's sparrow (*Aimophila aestivalis*) is a species of special concern due to gradual population declines over much of its former range, along with the extirpation of many local populations. Public and private forest managers are increasingly using growing-season prescribed burns to enhance southern pine woodlands for red-cockaded woodpeckers (*Picoides borealis*), a threatened species. Although growing-season prescribed burns have also been shown to be beneficial for creating and maintaining suitable habitat for Bachman's sparrows, little was known about the direct effects of prescribed burns on the survival, reproduction, and movements of individual birds. Growing-season prescribed burns were conducted at both Carolina Sandhills National Wildlife Refuge and Savannah River Site, South Carolina, in 1997. Eighteen sparrows in 4 treatment stands (burned) and 21 sparrows in 5 control stands (unburned) were captured between the 2 sites and monitored daily with radio telemetry.

No sparrows in any of the treatment stands died as a direct result of prescribed burning, and all sparrows dispersed out of the treatment stands within 3 days after burning. Period survival rate from 20 April–26 July, using the Kaplan-Meier method, was 80.0% (95% CI, 58.1 to 101.9) for all sparrows combined. When sparrows were grouped by control and treatment stands, period survival was 87.5% (95% CI, 64.6 to 110.4) and 77.8% (95% CI, 50.6 to 104.9), respectively. When birds that were previously excluded from the study (because the bird was not found, and transmitter failure was not indicated) were changed to mortalities, the period survival rate dropped to 57.1% (95% CI, 28.8 to 85.4) and 17.1% (95% CI, −0.4 to 34.6) for sparrows in control and treatment stands, respectively. Average daily distances moved in control and treatment stands before burning were 99 meters (90% CI, 86 to 112) and 112 meters (90% CI, 91 to 133), respectively, which are not significantly different ($P = 0.270$, $F_{(1,6)} = 1.47$). Daily distances moved after prescribed burning were significantly different ($P = 0.027$, $F_{(1,5)} = 9.57$) between sparrows in control and treatment stands. Average daily distance moved by treatment birds after prescribed burning was 399 meters (90% CI, 48 to 751), with a maximum of 2,517 meters. These large dispersal movements due to prescribed burning may have a detrimental effect on the survival and reproduction of Bachman's sparrows during the breeding season.

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FIRE ECONOMICS AND POLICY

POLICY ISSUES FACING PRESCRIBED BURNING TODAY

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ABSTRACT

Today's prescribed fire program manager is confronted with an increasingly complex dilemma. On the one hand, the science, knowledge, and commitment of managers regarding the role of prescribed fire across the landscape have grown appreciatively, only to be tempered by societal and political constraints in the form of policy, regulations, and rule making. These changes affect all prescribed fire practitioners regardless of organizational affiliation. This dilemma may be characterized as the conflict between the "ecological imperative" to burn versus the juggernaut of public and political influences against burning. This presentation will summarize the changing world of prescribed fire and offer perspective for successful engagement actions for the future.

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