

SEASIDE SPARROW NEST SUCCESS IN RELATION TO PRESCRIBED FIRE FREQUENCIES AT BLACKWATER NATIONAL WILDLIFE REFUGE AND FISHING BAY WILDLIFE MANAGEMENT AREA

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ABSTRACT

Limited research has been conducted on the effects of prescribed fire on tidal marsh wildlife species, including migratory birds. In 2007, the Chesapeake Marshlands National Wildlife Refuge (NWR) Complex and conservation partners initiated a project to evaluate the effects of prescribed winter burning on the secretive marsh bird community at Blackwater NWR and nearby Fishing Bay Wildlife Management Area (WMA) in Dorchester County, Maryland. Target species, many of which are of conservation concern, include saltmarsh breeding sparrows, rails, American and least bittern, and common moorhen. Objectives of the project are to 1) compare various fire return intervals for differences in the presence, distribution, and density of breeding secretive marsh birds; and 2) compare nest site selection and nesting success of secretive marsh birds among various fire return intervals. During two breeding seasons (May–August, 2007–2008), we conducted nest searching and monitoring, spot mapping, and vegetation data collection on 60 ha of tidal marsh (20 plots) stratified into four burn treatments (annual, 3–5 years, 7–10 years, and > 10 years). We detected and monitored 245 nests from seven species with seaside sparrow (*Ammodramus maritimus maritimus*) nests being the most abundant ($n=215$). Analysis of seaside sparrow nest success by the Mayfield Method indicated lower daily survival probability on annually burned marsh (0.936 ± 0.0091) compared to marsh with longer fire return intervals (3–5 years, 0.952 ± 0.0085 ; 7–10 years, 0.954 ± 0.0151 ; > 10 years, 0.938 ± 0.0167). Differences between daily survival probabilities were not significant (all P -values > 0.05). For the entire nesting cycle, survival probability of seaside sparrow nests was lowest on the annual and > 10-year burn areas, and highest on the 3- to 10-year burn areas.

Keywords: Chesapeake Bay, fire return interval, nesting success, prescribed fire, seaside sparrow, tidal marsh.

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