

THE INDIRECT EFFECTS OF FIRE ON BIRD SPECIES COMPOSITION AND DETECTIONS IN MIXED-GRASS PRAIRIE^{TWS}

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Fire is a common event in grassland habitats and is important in structuring habitat for many breeding bird species. Fire directly alters vegetation characteristics and indirectly affects breeding bird communities by making potential nest sites and territories suitable for some bird species and unsuitable for others. A fire on the Little Missouri National Grassland in western North Dakota provided an opportunity to study indirect effects of fire on the bird community. In 2001 and 2002 I conducted point count and transect surveys in burned and

unburned areas of the grassland and measured vegetation features. In 2002 I also searched for and monitored nests of Western Meadowlarks (*Sturnella neglecta*), Vesper Sparrows (*Pooecetes gramineus*), and Grasshopper Sparrow (*Ammodramus savannarum*). Litter depth and plant species composition differed between treatments both years, but vegetation density only differed in 2001. The proportions of survey points and transects with detections of common bird species did not differ significantly between treatments. Preliminary analyses suggest that most vegetation variables do not accurately predict the presence of bird common species. Nest success was low for the three bird species, i.e., western meadowlark, 14 percent; vesper sparrow, 37 percent; and Grasshopper Sparrow, 34 percent. Analysis of nest site vegetation characteristics may not indicate what features deter nest predation but may help us understand what habitat features these species select. The low severity of the fire may explain minimal differences in vegetation features and bird species composition. Grazing by cattle most likely had a confounding effect.