

**TO HAY OR NOT TO HAY: SHORT- AND LONG-TERM EFFECTS OF HAYING ON BREEDING BIRD POPULATIONS IN CRP GRASSLANDS IN THE NORTHERN GREAT PLAINS**

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*Abstract:* The Conservation Reserve Program (CRP) is a voluntary program that is available to agricultural producers to help protect environmentally sensitive or highly erodible land. Management disturbances of CRP grasslands generally are not allowed unless authorized to provide relief to livestock producers during drought and other natural disasters or to improve quality and performance of CRP cover. These disturbances may have short-term (1 year after disturbance) and long-term (2+ years after disturbance) effects on grassland bird populations. We assessed the effects of haying on 20 grassland bird species in 483 CRP grasslands in nine counties of four states in the northern Great Plains between 1993 and 2008. We compared breeding bird densities in idled and hayed fields to evaluate changes one, two, three, and four years after haying. Haying of CRP grasslands had either positive or negative effects on grassland birds, depending on the species, county, and number of years after the initial disturbance. Some species (e.g., Horned Lark, Bobolink) responded positively after haying, and others (e.g., Song Sparrow) responded negatively. The responses of some species changed direction as the fields recovered from haying. For example, densities for Sedge Wren and Clay-colored Sparrow declined the first year after haying but increased in the subsequent three years. Ten species showed Treatment  $\times$  County interactions, indicating that the effects of haying varied geographically. This long-term evaluation on the effects of haying on breeding birds provides important information on the strength and direction of changes in bird populations following a disturbance.