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Brown-Headed Cowbird Brood Parasitism in Bison-Grazed and Ungrazed Tall Grass Prairie in Northeastern Kansas

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Oral Presentation 3.3
(Also see Poster 28)

BROWN -HEADED COWBIRD BROOD PARASITISM IN BISON-GRAZED AND UNGRAZED TALLGRASS PRAIRIE IN NORTHEASTERN KANSAS

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The Brown-headed Cowbird (Molothrus ater) has long been associated with bison (Bos bison) in North America on the Great Plains. As a result, we anticipated that cowbirds would be more successful breeding in the presence of bison than in their absence. We predicted that several common ground-nesting avian species, Dickcissels (Spiza americana), Grasshopper Sparrows (Ammodramus savannarum), and Eastern Meadowlarks (Sturnella magna), would suffer higher frequencies of brood parasitism in bison-grazed habitat than in ungrazed habitat on Konza Prairie Research Natural Area in notheastern Kansas. The frequency of cowbird parasitism for all species combined was significantly higher (0.69) in bison-grazed than in ungrazed habitat (0.44) ($p = 0.044$, $(2 = 4.061$, $df = 1$). These results are consistent with our suggestion that bison-grazed habitat may be a more optimal site for cowbird brood parasitism than ungrazed habitat. We pose two principal explanations for the higher frequency of parasitism observed in the bison-grazed area. First, cowbirds may be able to forage more efficiently in the bison-grazed area, indirectly inflating parasitism frequencies by conferring a variety of energetic and nutritional advantages upon the females. Second, the cowbirds' abilities to find and parasitize nests may be enhanced by the shorter, less dense grass characteristic of grazed habitat. Further studies investigating the conservation implications of this phenomenon are merited since cowbird brood parasitism usually reduces reproductive success of host species, and has had a dramatic negative impact on population of several hosts, driving them to near extinction.