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EFFECTS OF A VISUAL BARRIER FENCE ON THE BEHAVIOR AND MOVEMENTS OF BLACK-TAILED PRAIRIE DOGS

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Abstract: Prairie dogs prefer an open view of their surroundings and may abandon an area with visual obstructions. We examined the effects of a visual barrier fence, which had a see-through visibility of 60%, on the foraging, vigilance, and aggressive behaviors of adult female black-tailed prairie dogs (*Cynomys ludovicianus*) in central Nebraska. We expected animals near a visual barrier to spend more time in vigilance and less time foraging. Adult female prairie dogs exposed to a visual barrier spent a greater amount of time foraging and less time in a headbob position than those not exposed to a fence ($P = 0.087$, $P = 0.015$). We also examined changes in prairie dog home ranges and use of an area in response to these visual barrier fences, expecting that prairie dogs would move away from fences over a 54-day

period. If they invaded other territories, we expected to see more aggression on colonies with a fence. The size, shape, and location of home ranges and core activity areas of adult females did not change over time as a result of the presence of a visual barrier fence. We observed only 1 act of aggression during the study period. This apparent lack of aggression is likely due to the fidelity of study animals to established home ranges. The number of prairie dogs using areas at various distances from a visual barrier fence also did not change over this time ($P > 0.90$). These results indicate that the visual barrier fence tested did not cause prairie dogs to be more vigilant and aggressive, nor did it affect their pre-established spatial use within the colony.