

FIRE EFFECTS ON LESSER PRAIRIE-CHICKEN HABITAT

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ABSTRACT

Fire has been suppressed over vast areas of prairie and shrublands in the central and southern Great Plains. Fire suppression and habitat fragmentation promote a negative feedback mechanism that continues unabated on the contemporary landscape. The results have been negative for native plant communities and wildlife that are habitat specialists, such as the lesser prairie-chicken (*Tympanuchus pallidicinctus*). The lesser prairie-chicken has a narrowly defined habitat niche, and fire suppression and habitat fragmentation have contributed to its decline. Fire may have a positive or negative effect on specific habitat elements depending on the pre-burn condition of the element and the timing (season) of the burn. Habitat elements include lekking or booming grounds, nesting cover, brood rearing cover, and protective cover. Fire affects habitat structure for 3 y or less before the structure returns to pre-burn conditions. Historical accounts (ca. 1840) of sand shinnery oak (*Quercus havardii*) structure on the landscape are similar to a 2-y burn frequency. The juxtaposition and pattern of fire on the landscape and its effects on lesser prairie-chicken habitat are also related to herbivory and thus fire cannot be evaluated without an understanding of the fire–herbivory interaction, also known as patch burning–patch grazing or rotational grazing without fences.

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