Effects of Prescribed Fire on Sage Grouse Habitat[TWS]

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Sage grouse nest success and chick recruitment are influenced by tall grasses for nesting cover and broad-leaved forbs for chick and pre-laying female nutrition. Fire suppression and other land uses may reduce understory herbaceous cover by increasing associated shrubs. Prescribed burning may be an effective way to enhance food and cover for sage grouse. The effects of prescribed fire on shrubs, grasses, forbs, and arthropods in Wyoming big sagebrush habitat were examined at Hart Mountain National Antelope Refuge, OR. Eight similar plots, u 400 ha in size, were sampled before fire in 1997 and after fire in 1998. Four plots were randomly selected for treatment, and burned in September of 1997. Prescribed burning removed sagebrush cover from 35 percent of treated plots and created 29Å 11.11 edges per linear km. Shoot density of sagebrush individuals was 235 percent greater along burn edges. Prescribed fire reduced percent cover and frequency of tall grass and perennial bunchgrasses. However, perennial bunchgrass density was similar

between treatments. Overall, grasses were likely reduced in size, but not number of individuals. Prescribed fire increased percent cover and frequency of forbs, especially annuals. Ant abundance was also increased by fire. Of 8 sage grouse food species studied, > numbers of flowers (5 species), extended flowering periods (6 species), longer succulence (all species), yet lower frequency score or density (3 species) were observed in burned plots. Sagebrush absence within burned areas will reduce nesting cover for sage grouse. However, increased sagebrush growth may increase nest cover along edges. Greater ant abundance, forb cover, flowering, and length of time available may positively affect nutrition of pre-laying female, and young sage grouse.