

Braun, C.E. 1998. Sage grouse declines in Western North America: What are the problems? Proceedings, Western Association of Fish and Wildlife Agencies 78:139-156.

Abstract: Sage grouse (*Centrocercus urophasianus*) populations have declined throughout western North America. This species has been extirpated in five states and one province, all at the periphery of the original distribution. Breeding population size in each of 3 additional states and two provinces is estimated at less than 2000 individuals. Declines in population size in Colorado have varied from 45 to 82% since 1980, depending upon the area, and the range-wide estimate is at least 30% decrease since 1985. Major factors involved in the documented decreases in distribution and abundance are habitat loss (usually permanent), habitat fragmentation (usually permanent), and habitat degradation (usually short term, 2 to 30 years). No single factor is responsible for the observed declines and human-induced habitat changes are accentuated by periodic drought. No natural undisturbed habitats are known to exist and active management of sagebrush (*Artemisia* spp.) rangelands is needed on a management experiment basis.