

FEATURE ARTICLES

SPATIAL DISTRIBUTION OF GREATER SAGE-GROUSE NESTS IN RELATIVELY CONTIGUOUS SAGEBRUSH HABITATS

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Abstract. Degradation of nesting habitat has been proposed as a factor contributing to Greater Sage-Grouse (*Centrocercus urophasianus*) population declines throughout North America. Delineating suitable nesting habitat across landscapes with relatively contiguous sagebrush cover is difficult but important to identify areas for protection. We used radio-telemetry to locate Greater Sage-Grouse nests in relatively contiguous sagebrush habitats in Wyoming to investigate the spatial arrangement of nests relative to lek and other nest locations. Nest distributions were spatially related to lek location within 3 and 5 km of a lek, and a 5-km buffer included 64% of the nests. There was no relationship between lek size and lek-to-nest distance, suggesting that accurate population trend evaluation might require lek surveys in addition to lek counts. Closest known lek-to-nest distance was greater for successfully hatched compared to destroyed nests, and closely spaced nests tended to experience lower success and have higher probabilities of both nests experiencing the same fate compared to isolated nests, suggesting that a mechanism of enhanced prey detection occurred at higher nest densities. A low probability that a given individual's consecutive-year nest spacing occurred randomly suggested nesting site-area fidelity. Although a grouped pattern of nests occurred within 5 km of a lek, the proportion of nesting females located farther than 5 km could be important for population viability. Managers should limit strategies that negatively influence nesting habitat regardless of lek locations, and preserve adequate amounts of unaltered nesting habitat within treatment boundaries to maintain nest dispersion and provide sites for philopatric individuals.

Key words: *Centrocercus urophasianus, fidelity, Greater Sage-Grouse, lek-to-nest distance, nest distribution, nest spacing, Wyoming.*