West Nile Virus And Sage grouse: An Update[TWS]

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Greater sage grouse have been extirpated from much of their original range, and population declines are typically associated with loss and degradation of sagebrush habitat. West Nile virus (WNv) was first detected in the Powder River Basin in 2002. In July and August 2003, we confirmed 17 WNv mortalities among radio-marked female sage grouse across four sites in Alberta, Montana, and Wyoming. During that period, adult female survival declined an average of 25 percent at WNv-infected sites compared to pre-WNv years (1998-2002), whereas no decline was observed at a site without WNv in western Wyoming. Comparisons of lek counts between impacted and unimpacted sites in the Powder River Basin indicate a pronounced local population decline in the affected area between 2003 and 2004. In 2004 WNv mortality was reported from Colorado, Wyoming, Montana, and California, although WNv mortality rates in the PRB appear to be lower than in 2003. To date, over 350 live or harvested sage grouse have tested negative for WNv, suggesting that sage-grouse have little innate resistance to WNv infection. Small, isolated populations of Gunnison sage grouse

(*C. minimus*) in Colorado and Utah and greater sage grouse in California, Utah, Washington, Alberta, and Saskatchewan may be at highest risk. If man-made surface water facilitates the spread of WNv, new debate will arise over how to best manage such activities in arid western landscapes. The emergence of WNv intensifies debate over how to best maintain large areas of high-quality habitat needed to support robust populations capable of withstanding catastrophic outbreaks of disease.