Sage Grouse, Coal-bed Methane Development, And West Nile Virus In The Powder River Basin: Is There A Link?[TWS]

Brett L. Walker and David E. Naugle
Wildlife Biology Program, College of Forestry and Conservation
University of Montana, Missoula, MT 59812
Brett.Walker@umontana.edu

Sagebrush habitats in North America continue to be significantly altered by anthropogenic change. Simultaneously, populations of sagebrush-obligate species, including greater sage grouse (*Centrocercus urophasianus*), have experienced pronounced long-term declines. Conservation of Montana's sage grouse populations poses a significant challenge for biologists, land managers, landowners, hunters, and industry. Extensive coal-

bed methane (CBM) development is planned for the Powder River Basin in southeastern Montana, an area that supports robust populations of sage grouse. However, it's influence on grouse populations remains unknown. In 2003, we initiated a pilot study of demographic responses of sage grouse to CBM development on three sites in southeastern Montana and northeastern Wyoming. Preliminary analysis indicates that hens at the CBM site nested, on average, 7-8 days later and renested at significantly lower rates than hens on two non-CBM sites. Hen survival on the CBM site was dramatically lower than that on non-CBM sites due to an outbreak of West Nile Virus (WNV). Future research is geared toward identifying physiological, behavioral, and ecological mechanisms underlying demographic effects of CBM on populations and determining whether excess surface water produced by CBM increases risk of exposure to WNV for sage grouse.