Monitoring Greater Sage Grouse Populations and Habitat Use in the Southeast Montana Sage-Grouse Core Area

Melissa A. Foster*, Montana Department of Fish, Wildlife and Parks, Wibaux, Montana 59353
John T. Ensign, Montana Department of Fish, Wildlife and Parks, Miles City, Montana 59313
Darin Newton, Montana Department of Fish, Wildlife and Parks, Miles City, Montana 59313

Sage grouse (*Centrocercus urophasianus*) core areas support Montana's highest densities of sage grouse, and are deemed vitally important to sage grouse conservation long term. The Southeast Montana Sage Grouse Core Area (SEMT SGCA) consists of large expanses of intact sagebrush-steppe habitat and is important for connectivity among populations in Montana, South Dakota and Wyoming. Relatively little development has occurred in the area, but there is potential for energy development to have large-scale impacts on the area in the near future. Little was known about sage-grouse use of the area during critical periods outside of the breeding season or factors underlying local sage-grouse population dynamics. Therefore, we radio collared 94 sage grouse hens between 2009-2011 to quantify movements, habitat use, and population vital rates. Overall, hen locations tended to be within the SEMT SGCA during spring-summer and expanded to adjacent areas of Wyoming and South Dakota during winter. Wide annual fluctuations in weather conditions drove annual variation in population demographic rates, habitat conditions, and habitat use. Apparent nest success (34-68%) and average chick production per hen that began the breeding season (0.72-1.12 chicks/hen) varied among years with extreme to mild weather. Annual hen survival varied from a low of 46 percent under extreme winter conditions to > 60 percent under milder weather. Vegetation characteristics at nest, brood-rearing, and winter locations will be presented. Results from this project will aid in land use planning, prioritization of conservation efforts, and provide information to assess the effects of future land use change. The project is conducted by MFWP and funded by the BLM.