

Bui, T.D., J.M. Marzluff, and B. Bedrosian. 2010. Common raven activity in relation to land use in western Wyoming: implications for greater sage-grouse reproductive success. *The Condor* 112(1):65-78

Abstract: Anthropogenic changes in landscapes can favor generalist species adapted to human settlement, such as the Common Raven (*Corvus corax*), by providing new resources. Increased densities of predators can then negatively affect prey, especially rare or sensitive species. Jackson Hole and the upper Green River valley in western Wyoming are experiencing accelerated rates of human development due to tourism and natural gas development, respectively. Increased raven populations in these areas may negatively influence the Greater Sage-Grouse (*Centrocercus urophasianus*), a sensitive sagebrush specialist. We investigated landscape-level patterns in raven behavior and distribution and the correlation of the raven data with the grouse's reproductive success in western Wyoming. In our study areas towns provide ravens with supplemental food, water, and nest sites, leading to locally increased density but with apparently limited (<3 km) movement by ravens from towns to adjacent areas of undeveloped sagebrush. Raven density and occupancy were greatest in land covers with frequent human activity. In sagebrush with little human activity, raven density near incubating and brooding sage-grouse was elevated slightly relative to that expected and observed in sagebrush not known to hold grouse. Raven occupancy near sage-grouse nests and broods was more highly correlated with sage-grouse success than were raven density and behavior, suggesting that the majority of nest predation by ravens is most likely carried out by resident territorial individuals. Integrated region-wide improvement of sagebrush habitat, removal of anthropogenic subsidies, and perhaps removal or aversive conditioning of offending ravens might benefit sage-grouse populations in our study area.