Evaluating Impacts of Natural Gas Development on Mule Deer in Western Wyoming

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Increased levels of natural gas exploration, development, and production across the Intermountain West have created a variety of concerns for wildlife populations and their habitats. In July of 2000, the USDI Bureau of Land Management approved development of 700 producing wells, 400 miles of access roads, and 276 mi of pipeline to develop gas reserves in the Pinedale Anticline Project Area (PAPA). The PAPA provides important winter habitat to 4000-5000 mule deer that summer in portions of four different mountain ranges of northwest Wyoming. We used a variety of data collected prior to and during gas development to examine the potential impacts of natural gas development on mule deer in the PAPA. We discuss results from the first 5 years of gas development, including 1) estimated acreage and sources

of direct habitat losses, 2) changes in mule deer habitat selection patterns and indirect habitat losses, and 3) population performance of mule deer in the PAPA. Through 5 yrs of gas development we documented: 1) > 1,300 acres of direct habitat losses to access roads and well pads, 2) changes in deer distribution, i.e., avoidance of gas wells, and 3) a 45-percent reduction in mule deer abundance. Our study uggests that habitat selection patterns and population performance of mule deer wintering in the PAPA have been affected by natural gas development. Mitigation measures designed to minimize impacts to wintering mule deer should consider development strategies that reduce direct habitat losses (e.g., directional drilling) and human activity, e.g., fluid collection systems. Further, reducing disturbance to wintering mule deer may require approaches that limit human activity during both production and development phases of wells.