Do Natural Gas and Wildlife Mix? Evaluating Effects of Energy Development on Pronghorn in Western Wyoming

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The Upper Green River Valley in western Wyoming is home to> 100,000 wintering ungulates as well as 30-50 trillion cubic feet of natural gas. In 2005, we initiated a 5-year study to assess the effects of habitat loss, fragmentation, and human d1stu1bancc associated with gas-field infrastructure on pronghorn habitat use, movements, and demography. Data on survival, habitat use, and daily/seasonal movements are being collected with GPS collars (n =50) that provide up to 8 locations/animal/day. Beginning in 2007, data from (GPS collars will be supplemented with 100 VHF collars to provide more robust estimates of survival. In addition, we are contrasting correlates ofreproduction such as body mass, stress hormones, and pregnancy rates between experimental animals that primarily winter in gas fields and control animals that reside in undeveloped areas, and are collecting data on bio-physical factors, e.g., snow depth, that influence pronghorn distribution. Preliminary results indicated that control and experimental animals had no differences in survival rates, body mass, or fecundity, sug-gesting that proximity to development has no detectable effect on pronghorn demography. Snow depth in excess of-20 cm has an overriding influence on pronghorn use oflocal habitats. However, independent of snow depth, pronghorn tend to avoid areas that are fragmented by gas fields and roads, especially habitat parcels less than 600 ac in size. Ultimately, our results will enable industry and agencies to understand how energy-related footprints affect landscapes and population-level responses.