



Working to Protect Native Species and Their Habitats

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NEWS RELEASE

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Study Shows Major Impacts of Gas Development on Sage Grouse

LARAMIE – A ground-breaking study¹ on greater sage grouse in western Wyoming has found that oil and gas development has major impacts on sage grouse populations under current Bureau of Land Management policies.

The study, funded by the BLM and the oil and gas industry, was completed last December by University of Wyoming doctoral student Matt Holloran, who studied sage grouse populations in western Wyoming where natural gas drilling has dramatically increased in the past three years.

“This study is going to change the debate on sage grouse and oil and gas development,” said Erik Molvar, a wildlife biologist with Biodiversity Conservation Alliance. “The BLM won’t be able to tell the public that their standard oil and gas practices and mitigation measures will protect the sage grouse anymore. New ideas and cutting-edge technologies must be implemented if oil and gas is to become compatible with sage grouse survival.”

The study found that oil and gas development has a major impact on grouse behavior at lek sites, the traditional dancing grounds that sage grouse return to year after year to breed. Drilling activities within 3.1 miles of sage grouse leks caused declines of breeding males. And more surprising, the impacts continued even after drilling and construction activities ceased. The number of breeding males failed to recover within 1.9 miles of producing wells (which typically remain on site from 30 to 50 years) even after drilling is completed.

“Sage grouse biologists have been belaboring BLM and state agencies to adopt stronger measures to protect the sage grouse from oil and gas development for years, but these recommendations have fallen on deaf ears. Holloran’s study validates the 1977 and 2000 Guidelines published by the Western Association of Fish and Wildlife Agencies in peer reviewed technical journals,” said grouse expert Clait

¹ Holloran, Matt J. 2005. Greater sage-grouse (*Centrocercus urophasianus*) population response to natural gas field development in western Wyoming. PhD Dissertation, Univ. of Wyoming, 211 pp.

E. Braun. "The study by Holloran now provides irrefutable evidence that the scientific community was right, and that a fundamental change is needed in the way the oil and gas industry does business in sage grouse country if we are to maintain this majestic emblem of the West," Braun added.

The study covers sage grouse populations in the Pinedale Anticline and Jonah Fields, two major developing gas fields in western Wyoming's upper Green River valley. Leaks affected by gas development showed an average population decline of 51 percent, while the three leaks surrounded by development declined by an average of 89 percent. Two of these three leaks were completely abandoned within 4 years. The study found that if the sage grouse continues to decline at the rates measured, local populations within these gas fields would become extinct within 19 years.

The study has West-wide implications, because most of the oil and gas development in the West is occurring in the sagebrush basins that are the core strongholds of remaining sage grouse populations. "The results of this study indicate that rapidly accelerating energy development could severely reduce sage grouse populations in the heart of the species' range," said Mark Salvo, director of the Sagebrush Sea Campaign. "If current trends continue, oil and gas development, in combination with other land uses, will likely drive the sage grouse toward extinction."

"The long-term declines of the sage grouse are serious, if this species is to remain viable and to occur within all states and provinces within its historical range," added Braun. "If major increases in oil and gas development occur within key habitats for sage grouse, Holloran's study clearly indicates that local extinction of populations will occur within the next 20 years. Extinction of local populations results in a highly fragmented distribution of sage grouse."

Holloran concluded that "greater sage-grouse in western Wyoming avoid breeding within or near the development boundaries of natural gas fields," (p. 56), and recommended establishing "refugia" areas adjacent to oil and gas fields. Here, sage grouse populations could be protected and enhanced to re-establish well-field populations after the eventual departure of the oil industry.

"During the upcoming revision of the Pinedale BLM Resource Management Plan, some areas in the valley like the Wind River Front must be considered as inappropriate for oil and gas leasing and development, to allow safe harbor for reservoir populations of sage-grouse, and to replace those grouse that no longer inhabit densely developed gas fields," said Linda Baker of the Upper Green River Valley Coalition.

"In the southern Red Desert, oil and gas fields already underway or currently being approved stretch across more than 2,750 square miles," Molvar said. "If these projects are approved by the BLM for full-field development, there will be no breaks in between them to provide refugia for sage grouse."

"This area encompasses one of the two largest sage grouse lek concentrations in Wyoming, in the proposed Creston – Blue Gap and Atlantic Rim project areas," Molvar added. "Even though all of this area is prime sage grouse habitat, I don't see how sage grouse will survive here unless the BLM takes a fundamentally different approach to oil and gas development than it has in the past."

The study, conducted by Matt Holloran through the Cooperative Fish and Wildlife Research Unit at the University of Wyoming, was funded by the Bureau of Land Management, the Wyoming Game and Fish Department, and the oil and gas industry. A brief synopsis of the study's findings follows.

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GREATER SAGE-GROUSE POPULATION RESPONSE TO NATURAL GAS FIELD DEVELOPMENT IN WESTERN WYOMING

SUMMARY OF STUDY FINDINGS

Study Background

- The study considered sage grouse populations in the Pinedale Anticline and Jonah gas fields in Western Wyoming, as well as sage grouse in adjacent areas where development was not occurring. Of the 313 square miles of the Pinedale Anticline field, only 7.3 square miles (approximately 2 percent) is not leased for oil and gas development.

Gas Development Impacts on Breeding Males

- Populations of breeding males on leks (sage grouse mating sites) in areas subjected to full-field natural gas development in the Pinedale Anticline and Jonah fields declined by an average of 51 percent from the year prior to development to 2004, compared to only a 3 percent decline at undisturbed leks.
- Males at three leks surrounded by natural gas development declined by 89 percent; two of the three leks were abandoned entirely within 3 to 4 years of initiation of gas drilling.
- Active drilling within 3.1 miles of a sage grouse lek reduced the number of breeding males that used the lek.
- Even after drilling and construction had been completed, the presence of producing gas wells within 1.9 miles of a lek reduced the number of breeding males using the lek.
- As road traffic increased, the number of breeding males on affected leks decreased.
- As well density increased, the number of breeding males on affected leks decreased.
- Well density of 1 or more wells per square mile reduced the number of males at affected leks.

Gas Development Impacts on Nesting Females

- Sixty-four percent of sage grouse nested within 3.1 miles of a lek site.
- Females showed strong fidelity to their nesting areas, and continued to nest in affected areas even after roads and wells were developed nearby. Older females remained in affected areas, while yearling females departed from gas fields.
- Overall, females strongly avoided nesting in areas of high well density.
- There was a 21 percent decline in the population of nesting females compared to undisturbed females over the 5 years of the study.

- Females nesting in developed areas had a significantly lower survival rate than female grouse in undeveloped areas. Although nest success rates were higher in developed areas, this increase was not sufficient to overcome the reduced female survival rates, resulting in an overall 21 percent decline in sage grouse population growth in developed gas fields compared to undeveloped areas.
- The study predicted that sage grouse populations would become extinct in the Pinedale Anticline and Jonah development fields within 19 years if current population trends continue. (Both of these fields are in the early stages of development. As impacts to sage grouse habitat become progressively worse with the planned increase in gas drilling, the population declines could become steeper in the future).
- Population reductions likely result from a combination of dispersal away from gas fields and increased mortality rates for birds affected by development.
- The author's findings suggest, "current development stipulations are inadequate to maintain greater sage-grouse breeding populations in natural gas fields" (p. 57).