Wyo. mule deer enjoy fruits of sage grouse protections -- study

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What's good for sage grouse in southwestern Wyoming is often good for mule deer, according to a study released today. The study published in the online journal *Ecosphere* is the first to quantify how conservation of greater sage grouse has offered incidental benefits to migratory mule deer.

It's good news for wildlife advocates as federal, state and nongovernmental groups race to secure safeguards for sage grouse ahead of the Fish and Wildlife Service's court-mandated September 2015 decision whether to list them under the Endangered Species Act.

Sage grouse are one of roughly 350 species that depend on or use sagebrush for a portion of their life cycle. Today's study is among the first to demonstrate the extent to which sage grouse act as an "umbrella" species for migratory mule deer.

Conserving habitat for an umbrella species can be an efficient way to indirectly benefit other species that share that habitat.

"It confirms a notion that people have been talking about," said Holly Copeland, a research scientist for the Nature Conservancy (TNC) in Lander, Wyo., who led the study. The other researchers were from the University of Wyoming, the University of Montana, Western Ecosystems Technology Inc. and the U.S. Geological Survey.

It was funded in large part by the Natural Resources Conservation Service's Sage Grouse Initiative, with additional funding from the Knobloch Family Foundation, Kaplan Family Foundation and Mule Deer Foundation.

Lands protected by Wyoming's sage grouse core area policy, private conservation easements and Forest Service protective designations strongly overlap with important habitat for mule deer, including winter range, migratory corridors and stopovers -- the places mule deer rest and eat during their journeys.

Mule deer in the upper Green River Basin, a high-elevation sagebrush desert that was the focus of the study, migrate up to 150 miles from winter ranges in the basin up to summer ranges in the Bridger-Teton National Forest. Both mule deer and sage grouse have suffered "dramatic declines" in recent decades in the basin concurrent with a natural gas boom in the Jonah and Pinedale Anticline fields.

TNC calls the basin "Wyoming's take on the Serengeti plains of Africa" due to its role as a bottleneck for migratory pathways that go back centuries.

Sage grouse, which live in 11 Western states, have lost more than half their historical range. Wyoming contains about 40 percent of the remaining birds.

In 2008, the state established a core area policy that limits disturbances such as oil or gas wells within densely populated core breeding areas that cover about 15 million acres, or about one-fourth of the state's land.

Today's study looked at the overlap between those core areas, the nearly 37,000 acres of private land conservation easements and Forest Service conservation designations, and lands used by the Ryegrass and Mesa mule deer subpopulations. Scientists collared 66 mule deer and have tracked their movements for the past decade.

They found conservation measures overlapped with 66 percent to 70 percent of the deer migration corridors, about 75 percent of stopovers and 52 percent to 91 percent of wintering areas.

Conservation actions targeted exclusively toward sage grouse accounted for roughly half the overlap in corridors and stopover areas, and nearly all overlap on winter ranges, the study found.

"Therefore, sage-grouse policy effectively doubled the amount of conservation afforded to migration routes for deer in this region," the study said.

But the study came with some caveats. For example, disturbance limits within sage grouse core areas are expected to preserve mule deer migration corridors about 95 percent of the time. But it is possible that disturbance within the core areas could impede deer movement, Copeland said.

In addition, some mule deer winter ranges and migration routes that are just outside sage grouse core areas could become "sacrifice areas" if they are developed intensively in lieu of development within the core areas, the study said.

"There are gaps in mule deer conservation, especially outside of core areas, where future development may become more concentrated, potentially resulting in impacts to migrating deer," Copeland said.

Moreover, the extent of overlap between sage grouse conservation measures and mule deer in the study area might be a "best-case scenario" given that the upper Green River Basin contains an unusually high number of both sage grouse and mule deer to begin with.

But the study does illustrate how political and fiscal investments in sage grouse conservation can pay unexpected dividends by protecting mule deer and other species dependent on sagebrush.

It could also help groups identify the best places to secure future conservation easements on private lands, particularly in areas where the risk of development intersects with gaps in critical stopover, migration and winter ranges, the study said.

While conservation easements represented a small proportion of the land area conserved compared with the Wyoming core area strategy, they are "disproportionately important" because they are permanent and can be targeted to high-priority corridors or stopovers, Copeland said.

In addition, while researchers have long viewed winter range as the limiting factor for mule deer survival, "that paradigm has begun to shift in recent years as the importance of migration and summer nutrition" for deer has been highlighted, the study notes.

Today's study builds on research published last summer by Copeland and others that found Wyoming's core policy will avert the loss of more than 4,175 males statewide over the long term (*E&ENews PM*, June 26, 2013).

Conservation easements secured in large part through federal funding and mitigation fees paid by oil and gas companies may avert projected declines in sage grouse populations in Wyoming by about 10 percent, that study found.

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