

# TOOTH & CLAW

*The sage grouse count.*

*By Noreen Walsh, Quinton Barr & Carolyn Dufurrena*

Our “Special Report: Sage Grouse” in our Summer 2012 issue brought a complaint from the U.S. Fish & Wildlife Service in Portland, Ore. Soon after, we received a letter from Noreen Walsh, FWS deputy regional director in Lakewood, Colo. Our writer, Carolyn Dufurrena, and range expert, Quinton Barr, from Western Range Service, explain (shown here in italics) their side of the story and where they found the data in question.—Ed.

**WALSH:** RANGE magazine recently devoted an entire special report to issues surrounding conservation and management of the greater sage-grouse. Unfortunately, there are numerous misconceptions and misrepresentations throughout the special report. One stands out as particularly concerning—as it has the potential to cause significant confusion that might upend ongoing efforts to collaboratively conserve the sage grouse.

The assertion in question is that the FWS requires a minimum effective population of only 5,000 mature sage grouse rangewide, with 500 breeding adults per region to protect the sage grouse from extinction and prevent listing under the Endangered Species Act (ESA). This is incorrect.

**BARR/DUFURRENA:** *The ESA itself would require the rangewide greater sage-grouse (GSG) population to fall below 5,000 mature birds in order for the species to legally qualify for listing as either endangered or threatened, as defined under the act. Granted, those 5,000 individual birds would need to be geographically connected to allow for the free flow of genetic information amongst them. The special report comments that the minimum effective population for GSG was determined by the FWS to be no more than 5,000 mature birds in its 2012 12-Month Findings (FWS Findings: Fish & Wildlife Service, 50 CFR Part 17. Endangered and Threatened Wildlife and Plants; 12-Month Findings for Petitions to List the Greater Sage-Grouse...as Threatened or Endangered. Federal Register / V Vol. 75, No. 55 / Tuesday, March 23, 2010 / Proposed Rules).*

*The agency itself argued in its findings, “a minimum effective population size must be 5,000 individuals to maintain evolutionary*

*minimal viable populations of wildlife (retention of sufficient genetic material to avoid effect of inbreeding depression or deleterious mutations).” See page 13959. Given the lack of any published studies establishing a more specific minimum effective population for GSG, comparatively low reproductive rates, a highly polygamous mating system, individual male breeding success, and juvenile death rates, the FWS findings reported, “up to 5,000 individual sage grouse may be necessary to maintain an*

**“Everybody’s out there now trying to get a picture of a sage grouse. In the Gunnison Valley last year, they found 100 new leks.”**

LEE SPANN, FIFTH-GENERATION RANCHER IN THE GUNNISON VALLEY,  
ON COUNTING GUNNISON LESSER SAGE-GROUSE

*effective population size of 500 birds” and concluded, “the minimum viable population size necessary to sustain the evolutionary potential of a species...has been estimated as high as an adult population of 5,000 individuals” (see page 13985). See [www.gpo.gov/fdsys/pkg/FR-2010-03-23/pdf/2010-5132.pdf](http://www.gpo.gov/fdsys/pkg/FR-2010-03-23/pdf/2010-5132.pdf).*

**WALSH:** These numbers were discussed as general rules of thumb in the conservation of small populations in our 2010 finding that the greater sage-grouse warranted listing under the ESA. However, the article completely misinterprets our analysis and findings with respect to small populations. The use of minimum population numbers are most appropriately considered general benchmarks where populations—not the entire species—may start to experience

additional threats that come with existing in low numbers. The FWS did not state that 5,000 individual sage grouse is enough to maintain the species rangewide; rather, we made a general statement that once populations drop below 5,000 individuals, those populations are at greater risk of extinction from additional threats that are known to affect small populations. Many sage grouse populations have been estimated at well below that number.

**BARR/DUFURRENA:** *The FWS findings do establish lower minimum effective populations associated with the risk of extirpation for discrete GSG communities at more localized or regional scales. They determined that discrete sage grouse populations “that fell below 50 breeding adults” were at risk for short-term extirpation, while “those that fell below 500 breeding adults” were at risk for long-term extirpation. See page 13959.*

*With respect to a determination if a species qualifies as endangered or threatened as defined by the ESA and thus warrants listing under it, the question is not if any geographically isolated populations currently fall below the minimum effective population, but rather if any geographically connected population exists that currently exceeds the minimum effective population and is projected to exceed it into the foreseeable future. If so, that population alone demonstrates that the species does not qualify for listing under the ESA because even if all the*

*other geographically isolated populations were eliminated, the species as a whole would still not face extinction, either imminently or in the foreseeable future, thereby failing to meet the threshold to qualify as either endangered or threatened as defined by the ESA.*

*Ted Koch testified for the FWS at Nevada Gov. Brian Sandoval’s June 11, 2012, meeting of the Greater Sage-Grouse Advisory Committee that there are currently 41 known separate GSG populations, of which eight populations exceed a minimum effective population of 5,000 birds. Koch further testified that if current management and development trends continue unchanged, three of these populations are projected to persist into the foreseeable future (30-year projection) with numbers exceeding a minimum effective population of 5,000.*

Thus, there are currently eight separate GSG populations that prevent the species from meeting the ESA definition of endangered and three separate GSG populations that prevent the species from meeting the ESA definition of threatened, so the GSG does not legally qualify for listing under the act. Even if all of the “many sage-grouse populations” that have been estimated to fall below the minimum effective population of 5,000 mature birds were to be extirpated, there would still be three separate GSG populations safeguarding the species from extinction in the foreseeable future.

**WALSH:** Our use of these benchmarks should in no way be interpreted as an affirmation or validation that the greater sage-grouse population only needs to be 5,000, or even 50,000, birds rangewide. It isn't only about the numbers because even if populations are currently larger than 5,000, the other threats—those independent of being a small population—are still impacting the species.

**BARR/DUFURRENA:** Again, with respect to a determination if the GSG warrants listing under the act, the FWS takes the wrong approach. The question is not if any of the five factors identified under Section 4 of the ESA are “impacting the species,” but rather whether any of the impacts are significant enough to make the GSG an endangered species or a threatened species as defined by the act. While the FWS findings identified two of the five factors (habitat modification and inadequacy of regulatory mechanisms) as negatively impacting the species, they did not show that such impacts were sufficient to qualify the species as endangered or threatened.

In fact, as discussed above, the FWS projects that three existing GSG populations will persist into the foreseeable future with numbers that exceed a minimum effective population of 5,000 birds, even if current management and development scenarios continue unchanged. This demonstrates that neither of the risk factors identified by the FWS as “impacting the species” is serious enough to even legally qualify the species as threatened under the ESA definition.

FWS findings (page 13922) states that the estimated contemporary (1985 to 2007) rate of decline of sage grouse is 1.4 percent per year. At this rate it would take 300 to 330 years for the estimated current GSG population to dwindle to the minimum effective population of 5,000 birds. Three centuries from now is the remote

**“I have 500 leks to count; most of them are counted from the air. There should be four visits per lek per breeding season and I’m the only one counting. That’s on top of the other reports and the rest of the work I need to do. There’s no way I can make 2,000 lek visits in three weeks, even with a helicopter.”**

NEVADA DEPARTMENT OF WILDLIFE BIOLOGIST



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The annual display of sage grouse on their strutting grounds—called leks—is one of the most dramatic wildlife spectacles in the West. It is here you will find male sage grouse popping air sacs on their breasts, puffing and fighting for the attention of females. Note: Sage grouse are the same size as domestic chickens and are also known as sage hen or sage chicken.

future, well beyond the foreseeable future which the FWS identified as a 30-year period for the purposes of projecting future GSG populations and trends.

Specific human activities appear to correlate positively with GSG population trends. Livestock grazing management, with its associated intensive development of meadows, hay fields, and surface water sources increased markedly in the Great Basin in the late 1800s and early 1900s, and GSG populations boomed.

High livestock densities of both sheep and cattle reduced fine fuel loads across the Great Basin, and wildfires were rare and small. High densities of livestock dung also supplied an abundance of insect activity, particularly in closely grazed meadows and riparian areas, and the close grazing stimulated succulent new herbaceous growth and increased the forb component in these meadows and riparian areas, thereby increasing the quantity and quality of the forage supply for sage grouse. At the same time, concerted predator control was practiced.

In fact, predator control was encouraged, subsidized, and implemented on a vast scale by the federal and state governments.

By the mid-1900s, federal and state regulations were implemented and all of the grazing management practices discussed above were controlled and moderated. The GSG population boom moderated at about the same time. By the late 1960s, livestock numbers and grazing levels were significantly scaled back across the West, and predator control programs were largely curtailed. Fire fuel levels increased, and the incidence of large-scale wildfires rose exponentially. GSG population trends reversed and started to rapidly decline.

Thus, intensive livestock management, which diminished the frequency and size of wildfires, and concerted predator control, which reduced GSG losses to these killers, are highly relevant to the biology of the GSG and help explain the trajectory of their populations over time. It is reasonable to assume that a return to management which increases livestock grazing levels, reduces fire fuel loads and



Government Wildlife Services personnel took this coyote, which was carrying a dead sage grouse in its mouth, in support of livestock grazing in Montana. A field necropsy revealed that it had already eaten 10 sage grouse chicks.

wildfire impacts, and increases predator control would result in another significant upward trend in GSG populations.

**WALSH:** Further declines and habitat loss reduce conservation options and make species conservation and recovery more onerous and expensive. Unless new populations or habitats are formed, the overall species' population and range continue to contract, becoming smaller and smaller. This is exactly what has been happening over time with greater sage-grouse and other prairie grouse species. Without an effective strategy to reverse the population declines, we will continue to lose populations and conservation options.

It is important that we all work together to help conserve this iconic species. We can have sage grouse, energy development, ranching, and more. However, this will require an integrated landscape strategy for protecting key areas of sage-grouse habitat

and key corridors for population connectivity.

**BARR/DUFURRENA:** *Proposed GSG conservation measures to provide heavier cover levels through further livestock grazing reductions, and the lack of conservation measures to address ever increasing predation levels, are a prescription to assure that GSG populations continue to decline. Heavier cover for GSG translates to higher fire fuel loads across the landscape, and substantial fuel loads make large-scale wildfires inevitable in many sagebrush communities. Repeat burns increase the likelihood that plant communities will shift toward cheatgrass dominance, which in turn increases wildfire frequency, eliminating the ability of sagebrush communities to reestablish.*

*Thus, conservation measures that intend to benefit GSG by providing them with more hiding cover will ultimately harm the species by converting significant swaths of existing habitat to annual grasslands that provide no habitat*

*value for GSG. This will concentrate the remaining birds in an ever-shrinking area, making them more vulnerable to expanding predator populations.*

In conclusion, Carolyn Dufurrena says: "There is no doubt that there have been negative impacts to sage grouse populations during the same period of time that livestock grazing populations across the West have taken massive cuts. We respectfully suggest an experiment to determine whether greater sage-grouse habitat and population numbers can be recovered on a landscape scale. There is a growing body of evidence that suggests that range management practices in earlier decades had a positive effect on sage grouse populations and habitat. We would like to see a certain landscape-scale area of rangeland returned to these practices for a period of time, including greater livestock grazing numbers and more aggressive predator control, combined with a moratorium on sage grouse hunting, to determine whether there would be a positive effect on sage grouse populations." ■

*Noreen Walsh is deputy regional director for U.S. Fish & Wildlife Service, based in Lakewood, Colo. Quinton Barr holds a Bachelor of Science in Range Management and a Master of Science in Natural Resources, both from Humboldt State University, and has worked as a private range consultant for Western Range Service in Elko, Nev., for the past 20 years. Carolyn Dufurrena is an award-winning writer, rancher and educator in northwestern Nevada. She has been following the progress of the sage grouse for RANGE for more than a decade. The complete "Special Report: Sage Grouse" can be downloaded from [www.rangemagazine.com](http://www.rangemagazine.com).*

## Notes from a Sage Grouse Stalker

It's a predawn morning in April near Muddy Gap in Wyoming's Ferris Mountains. There's dew on the grass on this remote high plateau, and frost in the air. A single volunteer parks her pickup truck in the dark. Her breath in that cold blue hour clouds around her as she shoulders a backpack and begins a mile-and-a-half hike into a remote sage grouse lek. She needs to get there before the sun.

Corrine Conner worked for two years as a lek counter for Wyoming Bureau of Land Management. The first year was volunteer, the second year, she got mileage.

"I counted two established leks for a Wyoming BLM biologist during the breeding season," she explains. Corrine also found two new leks in the area that were unknown to either BLM or Wyoming Game & Fish biologists at the time. She got to name the new locations. The larger populations of sage grouse were, not surprisingly, in more remote spots. Corrine counted 120 males at one hike-in location, and she smiles when she says, "The biologist came with me after that because she didn't believe me at first that there were

that many birds out there. But there were."

Connor was a dedicated and enthusiastic volunteer. "I would try going in to the lek a different way, and that's how I found the two new ones. The Wyoming Fish & Game guys would drive in; they drove in the same way, counted a few birds and then left. They saw the same thing each time." Conner was more aggressive. "I even followed birds that were flying a few times. I guess you could say I stalked them; that's how I found the new leks. I wish they [the agency folks] had more time to expand their counts. I'm convinced there are more leks out there, but state and federal employees just don't have time to go out there and find them." —*Carolyn Dufurrena*