



# WESTERN RANGE SERVICE

RANGE MANAGEMENT CONSULTANTS ♦ ESTABLISHED 1968 ♦ AL STENINGER, PRESIDENT

## MEMO

To: Interested Parties  
Date: March 19, 2012

From: Al Steninger, President  
Quinton J. Barr, Range Consultant

Subject: **Summary of Western Range Service Findings and Recommendations Regarding *Notice of Intent* to Prepare EISs to Incorporate Greater Sage-Grouse Conservation Measures into Land Use Plans (BLM) and Land Management Plans (FS)**

Interested Parties,

Below is a summary of the findings of Western Range Service based upon our review of the BLM's Notice of Intent<sup>1</sup> published in the Federal Register on December 9, 2011, and relevant associated documents. Included in the summary and its footnotes are citations to specific sections of these documents that support our findings. Many of our citations include hyperlinks to the referenced material.

We discovered that the US Fish and Wildlife Service's own determinations show that the greater sage-grouse is not legally qualified for listing under the Endangered Species Act. Yet the BLM is now proposing, and implementing under their December 2011 Instruction Memorandums, unnecessary sage-grouse conservation measures that have and will negatively impact all economic activities across the species entire range, increasing the regulatory cost and burden to conduct natural resource related activities and significantly reducing or virtually eliminating such activities. If nothing else, comment on these two facts.

We encourage all interested parties to carefully consider our summary, and to incorporate relevant findings into their comments to the Notice of Intent (and related sage-grouse planning efforts). Contact us if we can provide further assistance regarding this matter. The deadline for public scoping comments is (currently) March 23, 2012.<sup>2</sup> Comments may be submitted to the following addresses:

Western Region – Email: [sagewest@blm.gov](mailto:sagewest@blm.gov) Fax: (775) 861–6747  
Web site: <http://www.blm.gov/wo/st/en/prog/more/sagegrouse/western.html>  
Mail: Western Region Project Manager, BLM Nevada State Office, 1340 Financial Blvd., Reno, Nevada 89502

Eastern Region – Email: [sageeast@blm.gov](mailto:sageeast@blm.gov) Fax: (307) 775–6042  
Web site: <http://www.blm.gov/wo/st/en/prog/more/sagegrouse/eastern.html>  
Mail: Eastern Region Project Manager, BLM Wyoming State Office, 5353 Yellowstone, Cheyenne, Wyoming 82009

<sup>1</sup> **Notice of Intent:** Bureau of Land Management. Notice of Intent to Prepare Environmental Impact Statements and Supplemental Environmental Impact Statements to Incorporate Greater Sage-Grouse Conservation Measures into Land Use Plans and Land Management Plans. Federal Register / Vol. 76, No. 237 / Friday, December 9, 2011 / Notices. See [www.gpo.gov/fdsys/pkg/FR-2011-12-09/pdf/2011-31652.pdf](http://www.gpo.gov/fdsys/pkg/FR-2011-12-09/pdf/2011-31652.pdf).

<sup>2</sup> See bottom of “Sage-Grouse and Sagebrush Conservation” page for comment deadline and associated information at [www.blm.gov/wo/st/en/prog/more/sagegrouse.html](http://www.blm.gov/wo/st/en/prog/more/sagegrouse.html).

## EXECUTIVE SUMMARY

The proposed project by the Bureau of Land Management (BLM) and Forest Service (FS) to prepare Environmental Impact Statements (EISs) and Supplemental EISs to incorporate greater sage-grouse conservation measures into relevant Federal land use plans alleges that the purpose is to “avoid a potential listing under the Endangered Species Act” by the US Fish and Wildlife Service (FWS). The intent of the public scoping process is to “determine relevant issues” relating to the conservation of the greater sage-grouse and its habitat, “including alternatives” that should be evaluated in the EISs and Supplemental EISs. See Notice of Intent (footnote 1). Under the Endangered Species Act (ESA), a species can only be listed as “endangered” if it is in imminent danger of extinction, or as “threatened” if it is in danger of extinction in the foreseeable future. See ESA (footnote 3).

The minimum effective population for greater sage-grouse to protect the species from the long-term risk of extinction range-wide has been determined by the FWS to be 5,000 mature birds, while the minimum effective population on a regional scale has been determined to be 500 breeding adults. See FWS Findings (footnote 4) at pages 13959 and 13985. The proposed EIS process must analyze the current population level in relationship to the minimum effective population. The current estimated population for greater sage-grouse is between 350,000 and 535,000 birds, which is 70 to 107 times greater than the “minimum effective population” of 5,000 birds. See FWS Findings (footnote 4) at page 13921. In fact, given the estimated contemporary (1985 to 2007) rate of decline of 1.4% per year (see FWS Findings (footnote 4) at page 13922), it would take 300 to 330 years for the estimated current greater sage-grouse population to dwindle to the minimum effective population of 5,000 birds. Clearly, the greater sage-grouse is not endangered with imminent extinction, and it is unreasonable to conclude that the species is threatened with extinction in the foreseeable future, so there is no reason to list the greater sage-grouse as “endangered” or “threatened” under the ESA.

There is ample greater sage-grouse habitat within existing Wilderness Areas, National Wildlife Refuges, National Parks, and National Conservation Areas to support the minimum effective population of 5,000 breeding adults needed to safeguard the species against extinction. These nationally designated areas are already managed under special regulatory mechanisms that in many instances mirror the proposed mechanisms that current sage-grouse planning strategies recommend for conservation of the species and its habitat. Thus, the proposed EIS process must analyze greater sage-grouse population levels and trends in these nationally designated areas.

If analysis of these nationally designated areas, which likely support more than 5,000 greater sage-grouse, demonstrates that the regulatory mechanisms currently in place have maintained such populations or allowed them to increase, then there is no need to implement additional conservation measures anywhere else in the bird’s occupied range, because the greater sage-grouse does not legally qualify for listing under the ESA based upon its existence and trend in these nationally designated areas alone. In contrast, if analysis demonstrates that greater sage-grouse populations have declined in these nationally designated areas, like they have elsewhere in their currently occupied range, then the entire line of reasoning regarding the factors responsible for the decline must be reevaluated. Likewise, if greater sage-grouse populations have declined in these nationally designated areas despite the regulatory mechanisms that constrain their use, all recommendations to implement similar regulatory restrictions across vast additional portions of the species range need to be rejected entirely. Instead, management practices that were in place when greater sage-grouse populations dramatically increased from the mid 1800s to early 1900s need to be identified and implemented again.

## NOTICE OF INTENT

### Purpose

The Notice of Intent states “the BLM and FS propose to incorporate consistent objectives and conservation measures for the protection of greater sage-grouse and its habitat into relevant RMPs and LMPs by September 2014 in order to avoid a potential listing under the Endangered Species Act.” See page 77009, underlined emphasis added. The Notice of Intent further states “(t)he purpose of the public scoping process is to determine relevant issues relating to the conservation of the greater sage-grouse and its habitat that will influence the scope of the environmental analysis, including alternatives, and guide the process for developing the EISs/Supplemental EISs.” See page 77010, underlined emphasis added.

### Relevant Issues

The ESA<sup>3</sup> defines an “endangered species” as “any species which is in danger of extinction” and defines a “threatened species” as “any species which is likely to become an endangered species within the foreseeable future...”. Thus, under the ESA, a species can only be listed as “endangered” if it is in imminent danger of extinction, or as “threatened” if it is in danger of extinction in the foreseeable future.

To meet the Notice of Intent’s stated purpose “to avoid a potential listing” of Greater Sage-Grouse (GSG) under the ESA, the BLM’s EIS process must address four issues related to population levels at which the species would be at long-term risk of extinction, as follows:

- 1] a determination of the minimum effective population (the number of birds needed to safeguard against the risk of extinction, either immediately or in the foreseeable future);
- 2] a determination of current regional and range-wide population levels in relation to the minimum effective population;
- 3] an analysis of historic population trends and the factors that drove those trends; and,
- 4] identification of the habitat area(s) that need to be properly managed to maintain the minimum effective population.

### Minimum Effective Population of GSG: 5,000 Range-Wide, 500 Regionally

The FWS Findings<sup>4</sup> determined that a minimum effective population of 5,000 individuals will safeguard GSG from the long-term risk of extinction range-wide.

<sup>3</sup> **ESA:** The Endangered Species Act of 1973. See [www.blm.gov/pgdata/etc/medialib/blm/wo/Communications\\_Directorate/legislation.Par.93179.File.dat/esaall.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/wo/Communications_Directorate/legislation.Par.93179.File.dat/esaall.pdf).

<sup>4</sup> **FWS Findings:** Fish and Wildlife Service, 50 CFR Part 17. Endangered and Threatened Wildlife and Plants; 12-Month Findings for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered. Federal Register / Vol. 75, No. 55 / Tuesday, March 23, 2010 / Proposed Rules. 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).

The FWS Findings argue “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, underlined emphasis added. Given the lack of any published studies establishing a more specific minimum effective population for GSG, the FWS Findings conclude “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, underlined emphasis added).

The FWS Findings establish lower minimum effective populations associated with the risk of extirpation for discrete GSG communities at more localized or regional scales. The FWS Findings 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.

Thus, the minimum effective population for GSG to maintain sufficient genetic material to protect the species from the long-term risk of extinction has been determined by the FWS to be 5,000 mature birds range-wide, while the minimum effective population on a regional scale has been determined to be 500 breeding adults.

#### Current Greater Sage-Grouse Population: Approximately 535,000 Range-Wide

The FWS Findings estimate that the current GSG population range-wide totals approximately 535,000 birds. Table 4 of the FWS Findings reports GSG population estimates by state/region based upon data from state wildlife agencies collected between 2002 and 2008. The estimates for all of the state/region populations combined total 535,542 GSG. See Table 4, page 13921. The total estimated current GSG population of approximately 535,000 birds is 107 times greater than the “minimum effective population” of 5,000 birds needed to maintain sufficient genetic material to protect the species from the long-term risk of extinction.

The estimated populations for Idaho, Montana, and Wyoming in Table 4 of the FWS Findings were based upon hunting harvest data, assuming that 5% of the population is harvested. Elsewhere, the FWS Findings assume that 10% of the population is harvested by hunting (page 13921), which would cut in half the estimated populations reported in Table 4 (page 13921) for Idaho, Montana, and Wyoming, resulting in a total estimated current GSG population of over 350,000 birds (351,252). This is still 70 times greater than the “minimum effective population” of 5,000 birds.

Based upon a current estimated population for GSG of 350,000 to 535,000 birds, 70 to 107 times greater than the “minimum effective population” of 5,000 birds, it is clear that GSG are not endangered with imminent extinction. Instead, the FWS Findings fret that the species may warrant listing because presumed trends of declining populations, if continued, may threaten the species with extinction sometime in the future. However, given the estimated contemporary (1985 to 2007) rate of decline of 1.4% per year (page 13922), it would take 300 to 330 years for the estimated current GSG population to dwindle to the minimum effective population of 5,000 birds. Speculating what might occur three centuries from now stretches way beyond the foreseeable future.

### Historic Population Trends for Greater Sage-Grouse

The FWS Findings admit that GSG “numbers are difficult to estimate” due to numerous factors. See page 13921. The FWS Findings ultimately conclude “since neither presettlement nor current numbers of sage-grouse are accurately known, the actual rate and magnitude of decline since presettlement times is uncertain.” See page 13923. Note the assumption that the overall trend reflects a “decline” from pre-settlement times.

Despite the recognition that the rate and magnitude of change in GSG populations over time is uncertain, the FWS Findings assume that GSG populations have significantly declined from pre-settlement populations based primarily upon conclusions from several sources indicating that “sage-grouse population numbers in the late 1960s and early 1970s were likely two to three times greater than current numbers”. See page 13922. The FWS Findings report that GSG “experienced long-term population declines in the past 43 years, with that decline lessening in the past 22 years.” See page 13923. These observations are consistent with testimony of Nevada residents that have first-hand memories dating back from that period, or earlier, some as far back as the 1930s.

Given relatively high GSG populations in the 1960s and lower numbers today, the FWS Findings assume an overall downward population trend from the pre-settlement period, as depicted graphically by the dashed grey trend line in Figure 1 on page 14 herein. The downward trend between the 1960s and today is assumed to be so steep due to rapid agricultural conversion of sagebrush habitat starting in the late 1960s. The downward trend in GSG populations is projected to extend back in time prior to the 1960s at an overall slower rate of decline, except for a period of accelerated decline associated with commercial hunting in the 1930s. Likewise, the downward trend in GSG populations is forecast to continue into the foreseeable future, at a slightly slower rate. This forecast leads to the conclusion that GSG populations will eventually reach levels near or below the minimum effective population of 5,000 breeding adults, putting the species at risk for eventual extinction. See dashed grey trend line depicted in Figure 1.

However, we know from documented sources that the assumed higher GSG population levels in the early and mid 1800s depicted by the dashed grey trend line are simply wrong, at least with respect to known GSG population levels at various points in recorded history for the Great Basin. GSG within the *Western Region*, particularly the Great Basin, were scarce during the pre-settlement period, much less abundant than today. Ira Hansen, Nevada State Assemblyman, prepared a report (attached) regarding pre-settlement GSG populations throughout Nevada and the Great Basin based upon written accounts of early explorers in the region. Those early written accounts indicate that between about 1820 and 1850, GSG were uncommon, being observed only rarely by the explorers, and were seldom included in the diets of the Native Americans due to their scarceness. Similarly, in Part III of the King Exploration Report<sup>5</sup> based upon field-work from June 1867 to August 1869, Ornithologist Robert Ridgway reported “birds

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<sup>5</sup> **King Exploration Report:** United States Geological Exploration of the Fortieth Parallel. Clarence King, Geologist-in-charge. Part III. Ornithology. By Robert Ridgway.  
See [www.archive.org/details/cu31924000092373](http://www.archive.org/details/cu31924000092373)

characteristic of the sage-brush are not numerous, either as to species or individuals, but several of them are peculiar to these districts;” including *Centrocercus urophasianus* (GSG). See page 324. Regarding GSG, Ridgway reported “(a)lthough this large and well-known Grouse was met with throughout the sage-brush country between the Sierra Nevada and the Wahsatch (sic), we saw it so seldom that little was learned of its habits, particularly during the breeding-season.” See page 600.

Likewise, the forecast that GSG populations will continue to significantly decline into the foreseeable future appears to be wrong based upon recent studies within the Great Basin. Nevada Department of Wildlife Studies report increasing GSG populations within the state from 2008 through 2010. A complete picture of Great Basin GSG numbers since written records began indicates:

- 1] pre-settlement populations were quite low, but well scattered;
- 2] populations dramatically increased between the late 1800s and early 1900s;
- 3] populations peaked in about 1930 and remained high through the 1960s (perhaps interrupted by a moderate dip due to commercial hunting);
- 4] populations declined rapidly from the 1970s through about 2000;  
and,
- 5] populations declined more slowly from 2000 through 2010, and have even increased during the last part of this period in certain locations.

Figure 1 displays these circumstances graphically. All available information regarding estimated Great Basin GSG numbers from the early 1800s to present is shown as triangular data points in Figure 1, connected by a smoothed black line. To determine the overall direction of change in Great Basin GSG populations over time, a linear trend line<sup>6</sup> for the Great Basin data is depicted in Figure 1 as a solid grey line, and increased over time. This is the exact opposite of the assumed downward trend predicted by the FWS Findings based upon the period between the 1960s and the present. It is unreasonable to base conclusions regarding long-term population trends only upon knowledge regarding population levels at two points in history, 1960 and today, when we have knowledge regarding sage-grouse populations at other times.

Consideration of all historic Great Basin population estimates for GSG indicates that pre-settlement populations were low, populations dramatically increased between the mid 1800s and early 1900s, populations rapidly declined from about 1970 to 2007, and then increased slightly thereafter, as depicted in Figure 1. When interpreting graphic representations of data like that presented in Figure 1, it is helpful to develop biologically relevant explanations for the points where the population curve significantly changes slope or reverses direction. The population trend explanations suggested by the FWS Findings have the potential to explain only two of the deflections shown in Figure 1 for Great Basin GSG populations. Commercial hunting could explain the population decline depicted in the 1930s, and agricultural conversions could explain the rapid population decline beginning in about 1970. However, agricultural conversions were taking place as early as the turn of the century, and Great Basin GSG populations were significantly increasing at that time, rather than decreasing.

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<sup>6</sup> The only purpose for fitting this linear trend line to non-linear data was to determine whether the overall direction of change over time was upward or downward.

Indeed, human disturbances of all sorts, roads, railways, fences, reservoirs, towns, farms, mines, etc. flourished in the early to mid 1900s, and so did the sage-grouse. The mere presence of human activity seems to have little biologically relevant connection to sage-grouse population trends. However, specific human activities appear to correlate positively with GSG population trends. Livestock grazing management, with its associated intensive development of meadows, hayfields, 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 management actions in the Great Basin that seem to be highly relevant to the biology of the GSG and help explain the trajectory of their populations over time. As shown in Figure 1, it is reasonable to assume that a return to effective management to increase livestock grazing levels, reduce fire fuel loads and wildfire impacts, and increase predator control would result in another significant upward trend in GSG populations.

In contrast, 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 re-establish. 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.

### Identification of Habitat Area(s) Needed to Maintain the Minimum Effective Population

Less than 1.5% of the current GSG breeding population needs to be conserved to support the minimum effective population of 5,000 birds. Because the species is heavily concentrated in high-quality portions of its occupied range (see Doherty<sup>7</sup>), less than 0.25% of the total acreage in the highest breeding density portions of the occupied range needs to be conserved to support the minimum effective population (see calculation in footnote 7).

Likely, far more than 5,000 GSG, and more than 0.25% of the species high quality breeding habitat, are located within existing Wilderness Areas, National Wildlife Refuges, National Parks, and National Conservation Areas. Thus, these nationally designated areas likely already support more GSG than the minimum effective population needed to safeguard the species from extinction. These nationally designated areas are already managed under special regulatory mechanisms that in many instances mirror the proposed mechanisms that current sage-grouse planning strategies recommend for conservation of the species and its habitat. Thus, the EIS process needs to analyze greater sage-grouse population levels and trends in these nationally designated areas to determine how many GSG they contain, and the extent to which their habitat areas are sufficient to sustain the minimum effective population of 5,000 birds.

If analysis of these nationally designated areas confirms that they currently support more than 5,000 greater sage-grouse, and demonstrates that their populations have been maintained or have increased under the regulatory mechanisms implemented in these areas, then there is no need to implement additional conservation measures anywhere else in the bird's occupied range. In such case, the GSG does not need to be listed under the ESA because its existence and trend in these nationally designated areas alone is sufficient to safeguard it from extinction.

In contrast, if analysis demonstrates that greater sage-grouse populations have declined in these nationally designated areas, like they have elsewhere in their currently occupied range, then the entire line of reasoning regarding the factors responsible for the GSG population decline must be reevaluated. If GSG population declines have occurred in these nationally designated areas that received such designation because of their expansive, wild, undisturbed characteristics, then factors other than habitat loss, destruction, and fragmentation due to man's activities must be driving the GSG population declines. Likewise, if greater sage-grouse populations have declined in these nationally designated areas despite the regulatory mechanisms that constrain their use, all recommendations to implement similar regulatory restrictions across vast additional acreages of the GSG range need to be rejected entirely.

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<sup>7</sup> **Doherty:** Doherty et. al., September 24, 2010, *Mapping breeding densities of greater sage-grouse: A tool for range-wide conservation planning*, 24 September 2010. Page 2 reports that 25% of the known breeding population resides in 3.9% of its occupied range. Calculations: 5,000 effective pop. ÷ 350,000 current pop. \* 100 = 1.43% needed population; 3.9% area ÷ (25% / 1.43%) = 0.22% needed area. See [www.blm.gov/pgdata/etc/medialib/blm/wo/Communications\\_Directorate/public\\_affairs.Par.46599.File.tmp/GRSG%20Rangewide%20Breeding%20Density.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/wo/Communications_Directorate/public_affairs.Par.46599.File.tmp/GRSG%20Rangewide%20Breeding%20Density.pdf)

If regulatory controls to minimize human disturbance have failed to allow GSG populations to flourish within the vast wilderness areas and other nationally designated conservation areas, then it is unreasonable to apply such draconian control measures to broad landscapes beyond the boundaries of these areas in the vain hope that such regulation will somehow work in other locations. To implement regulatory mechanisms that are certain to severely interfere with other valid existing uses of the landscape and negatively impact local and regional economies in the face of evidence that such mechanisms did not reverse the plight of the GSG in these nationally designated areas would be unreasonable, irrational, and counter-productive. Instead, if the minimum effective population of GSG to protect the species from extinction cannot be supported within such nationally designated areas, management practices that were in place when greater sage-grouse populations dramatically increased from the mid 1800s to early 1900s need to be identified and implemented again in other areas.

The December 2011 BLM IMs<sup>8</sup> instruct all BLM Field Officials in all program areas to consider and implement specific GSG conservation measures contained in the associated December 2001 BLM Report<sup>9</sup> when conducting projects within “Preliminary Priority Habitat.” “Preliminary Priority Habitat” is currently delineated to encompass essentially all of the highest quality breeding habitat that supports 75% of the known breeding population, which includes approximately 27% of the occupied range of the GSG (see Doherty, page 2).

On their face, the BLM IMs both indicate that the instructions promote “sustainable Greater Sage-Grouse populations” (IM 2012-043 at pages 1 and 2, and IM 2012-044 at page 2). Such an objective is consistent with a goal to maintain the minimum effective population needed to safeguard the species from extinction, and thus avoid the purported need for the species to be listed under the ESA. In other words, the minimum effective population of 5,000 breeding adults needed to provide sufficient genetic material to protect the species from the long-term risk of extinction represents the minimum sustainable Greater Sage-Grouse population.

As discussed above, the minimum effective population of 5,000 birds comprises less than 1.5% of the current GSG breeding population, and requires less than 0.25% of the total acreage in the occupied range for support.

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<sup>8</sup> **BLM IMs:** Instruction Memorandum No. 2012-043, *Greater Sage-Grouse Interim Management Policies and Procedures* and Instruction Memorandum No. 2012-044, *BLM National Greater Sage-Grouse Land Use Planning Strategy*. Both transmitted by the BLM Director on December 27, 2011. See [www.blm.gov/wo/st/en/info/regulations/Instruction\\_Memos\\_and\\_Bulletins/national\\_instruction/2012/IM\\_2012-043.html](http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2012/IM_2012-043.html) and [www.blm.gov/wo/st/en/info/regulations/Instruction\\_Memos\\_and\\_Bulletins/national\\_instruction/2012/IM\\_2012-044.html](http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2012/IM_2012-044.html)

<sup>9</sup> **BLM Report:** *A Report on National Greater Sage-Grouse Conservation Measures*. Produced by the Sage-Grouse National Team, December 21, 2011. See [www.blm.gov/pgdata/etc/medialib/blm/wo/Information\\_Resources\\_Management/policy/im\\_attachments/2012.Par.52415.File.dat/IM%202012-044%20Att%201.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/im_attachments/2012.Par.52415.File.dat/IM%202012-044%20Att%201.pdf)

While the IMs imply that the goal of BLM GSG conservation is to promote sustainable Greater Sage-Grouse populations, they provide instructions to provide conservation protections to 75% of the current GSG breeding population (50 times as many birds) across a landscape that is more than 100 times larger than the area needed by the minimum effective population (27% of the occupied GSG range rather than 0.25%).

The massive expansion of the conservation goal from one intended to promote a sustainable Greater Sage-Grouse population to one that directs the promotion of 50 times as large a population on more than 100 times as much land as is needed is the outgrowth of a subtle change in wording contained in the goal statement of the BLM Report. Page 2 of the BLM Report states that the BLM “endorsed the goal” of the *Greater Sage-grouse Comprehensive Conservation Strategy* (Stiver et. al., 2006) “to maintain and enhance populations and distribution of sage-grouse by protecting and improving sagebrush habitats and ecosystems that sustain these populations” (underlined emphasis added).

Note that the goal endorsed by the BLM Report to “sustain these populations” changes the ESA compliant goal of maintaining a sustainable population (minimum effective population) to safeguard the GSG from extinction to an expanded goal to maintain or enhance current populations. Since current GSG populations are so much larger than the minimum effective population, the expanded goal to sustain current populations requires conservation of many more birds over a much larger landscape than would be required to merely protect the species from the risk of long-term extinction.

Thus, while the Notice of Intent states that the purpose of the EIS process is to “avoid a potential listing” of the GSG under the ESA, the conservation measures identified for analysis under the EIS process, and already implemented by the BLM IMs, actually provide ESA styled protections to far more GSG over a much larger landscape than would be the case if the populations were to actually dwindle to the point that they met the criteria for listing under the ESA.

### **Reasonable Alternatives**

In light of the “Relevant Issues” discussed above, there are several Reasonable Alternatives that the EIS must analyze in order for the BLM (and FS) to make an informed decision regarding what changes to make to existing RMPs and LRMPs, if any, to adequately protect GSG from the long-term risk of extinction and avoid the presumed need for the species to be listed under the ESA.

### **No Action Alternative**

As discussed above, the current GSG population exceeds the minimum effective population by 70 to 107 times. Current GSG populations and habitats located within existing Wilderness Areas, National Wildlife Refuges, National Parks, and National Conservation Areas likely exceed the minimums needed to safeguard the species against extinction. These nationally designated areas already impose regulatory mechanisms that mirror those that are supposed to provide protections to the GSG.

Thus, it is likely that a well reasoned, detailed analysis of the current situation will demonstrate that no additional action is necessary because GSG do not legally qualify for listing under the ESA based upon their existence and trend in such existing nationally designated areas alone.

If analysis of the current situation determines that no existing habitat area(s) provide large enough interconnected habitat with sufficient management protections to support the minimum effective population of 5,000 interbreeding adults into the foreseeable future, the EIS process must consider alternatives to establish adequate habitat areas, such as the alternatives discussed below.

#### Contiguous Habitat Block Alternative

If it is determined that no nationally designated special areas currently provide a contiguous habitat block to support the minimum effective population of 5,000 breeding adults, the EIS process must evaluate the extent to which adjacent habitat could be incorporated into a special management area to establish such a habitat block.

For example, if an existing nationally designated wilderness area only lacks some winter habitat to provide for the year-long needs of the minimum effective population, and such winter habitat exists on nearby lands, it is entirely reasonable to develop an alternative to incorporate that adjoining winter habitat into a special management area and impose any necessary protections on such winter habitat to establish a contiguous habitat block to support the minimum effective population. If such contiguous habitat block is established to meet the needs of the minimum effective population, no additional GSG conservation measures are needed across the remainder of the species range to safeguard GSG from extinction and avoid the presumed need for listing under the ESA.

#### Proximate Habitat Alternative

If it is determined that no nationally designated special areas currently provide proximate habitats to support the free flow of genetic information among a minimum effective population of 5,000 breeding adults, the EIS process must evaluate the extent to which nearby habitats could be incorporated into a management network to establish such proximate habitats.

For example, there may be two nationally designated wilderness areas that each support a population of 3,000 GSG, but are distant enough from each other to prevent the free flow of genetic information between them. Existing GSG habitat located between these areas could be managed to establish a proximate habitat network that allows the free flow of genetic information for a GSG population that exceeds the minimum effective population of 5,000 breeding adults.

### Stronghold Emphasis Alternative

Managing to support a minimum effective population of 5,000 breeding adults in both of the GSG stronghold areas (the southwest Wyoming Basin and the Great Basin area straddling Oregon, Nevada, and Idaho) identified by the FWS Findings (pages 13958, 13962, 13986, 13988, 14008, and 14009) would represent a reasonable alternative to maintain sufficient genetic information to safeguard the GSG against the long-term risk of extinction, thereby avoiding the need to list the species under the ESA. Under this alternative, significant genetic information would not only be provided within both stronghold GSG populations, but also within the separate Gunnison, Washington, and Bi-state populations.

### Minimum Breeding Density Area Alternative

The December 2011 BLM IMs direct that specific GSG conservation measures be implemented within “Preliminary Priority Habitat” which is currently delineated to roughly correspond to the 75% Breeding Density Area mapped by Doherty (footnote 7). The 75% Breeding Density Area (area that encompasses 75% of the current GSG population upon 27% of the occupied habitat) identified as “Preliminary Priority Habitat” under these instructions exceeds the minimum effective population of 5,000 by more than 50 times, and exceeds the acreage needed to support the minimum effective population by more than 100 times.

If the Breeding Density Area concept is to be used as a strategy to manage GSG for the purpose of avoiding the need to list the species under the ESA, only the minimum Breeding Density Area necessary to maintain the minimum effect population needs to be identified and conserved. As calculated in Table 1 on page 15 herein, a sage-grouse conservation measure designed to maintain current populations in a 3% Breeding Density Area would sustain 15,963 GSG in Management Zones I – V, which is 3.2 times the minimum effective population of 5,000 birds. Thus, management to maintain current populations in a 3% Breeding Density Area would be more than sufficient to avoid the purported need to list the species under the ESA. The BLM proposed alternative to impose sage-grouse conservation measures to maintain or enhance current populations across a 75% Breeding Density Area is a vast overreach of what is reasonable to achieve the stated purpose of the Notice of Intent and avoid the presumed need to list the species under the ESA.

### Enhance Current Populations Alternative

Given the fact that current GSG populations exceed the minimum effective breeding population by 70 to 107 times, it is clear that GSG are not at imminent risk of extinction, and therefore do not legally qualify for listing as “endangered” under the ESA.

The FWS Findings express concerns regarding rapidly declining GSG populations between the late 1960s and late 1980s, and continued downward population trends (although at a slower rate) from the late 1980s to the present. The FWS Findings fret that such downward trends in GSG populations may threaten the species with extinction at some point in the future.

Given the recent (1985 – 2007) rate of decline of 1.4% annually (FWS Findings, page 13922), it would take 300 to 330 years for the current greater sage-grouse population (350,000 to 535,000 birds) to shrink to the minimum effective population (5,0000 birds). Theorizing about what might happen three centuries from now reaches well beyond the foreseeable future. Thus, the FWS Findings expressed concern about long-term outcomes of recent GSG population declines does not rise to a determination that the species is threatened with extinction in the foreseeable future, so the GSG does not legally qualify for listing as “threatened” under the ESA.

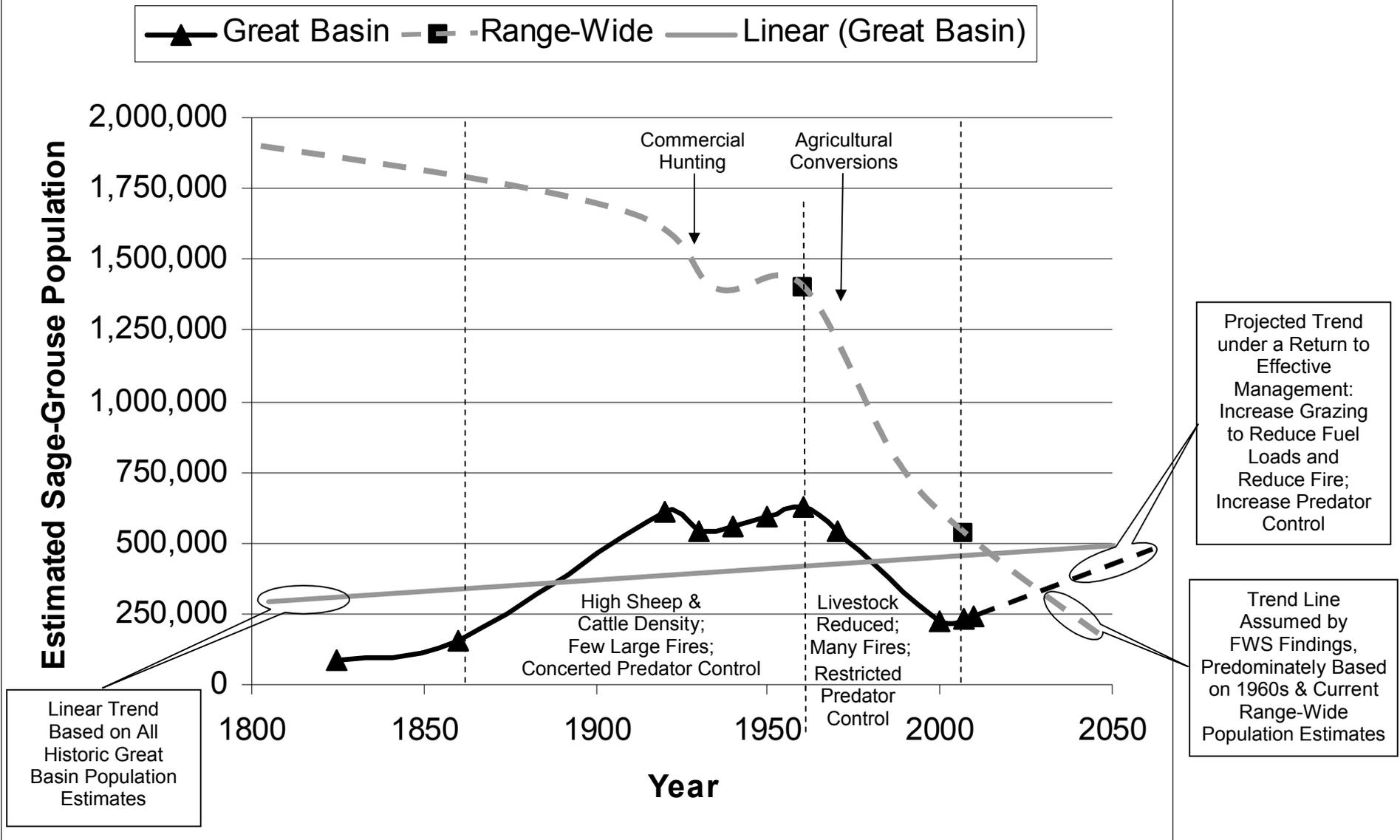
Nevertheless, it would be reasonable to consider an alternative that that would trigger an increase in GSG populations without negatively impacting existing socioeconomic uses occurring on BLM and FS administered lands. An analysis of the past management history within the Great Basin indicates that GSG flourished when livestock grazing levels were significantly higher than they are now. During this same period, large wildfires in the region were very infrequent (likely due to lower fire fuel levels as a result of close grazing), and concerted predator control measures were practiced. These management actions could be put into practice again to benefit GSG, without harming the existing socioeconomic climate, but rather enhancing it.

In fact, it is reasonable to argue that the FWS Findings get it wrong when they conclude that there are a lack of regulatory mechanisms in place to protect the GSG. Instead, many of the regulatory mechanisms currently in place are harming the species. For example, regulations restricting livestock numbers and use levels increase fire fuels across the Great Basin, and these regulations have resulted in a dramatic increase in large wildfires in the region in recent decades, which has destroyed GSG habitat to the detriment of the species. Repeated fire has led many sagebrush communities to convert to cheatgrass dominance, which assures that the habitat will remain unfit for GSG into the foreseeable future.

Rules restricting predator control, regulating the use of poisons and baits, and protecting ravens have resulted in huge GSG loses due to predation. Whenever a species like the GSG with a relatively low reproduction rate (FWS Findings, page 13916) loses the vast majority of its eggs to predation, and can trace more than 80% of the mortality of those individuals that manage to hatch to predation (FWS Findings, pages 13930, 13971, and 13972), its populations can be expected to decline. Again, it appears that existing rules are harming GSG populations, not a lack of adequate rules.

It is reasonable to analyze an alternative to eliminate existing regulatory mechanisms that are harming GSG, or replace them with rules that again implement management practices that allowed the species to rapidly increase within the Great Basin in the past. Because current GSG populations greatly exceed the minimum effective population, any management alternative that would stabilize or increase the current population level would eliminate any perceived justification to list the species under the ESA. However, given the multiple-use mandates applicable to BLM and FS administered lands, only such an alternative that would help the sage-grouse without negatively impacting other valid existing uses is reasonable for consideration and analysis.

**Figure 1. Historic Greater Sage-Grouse Population Trends**



**Table 1.** Greater Sage-Grouse by State/Region or Management Zone: Estimated Minimum Populations

FWS Findings <sup>1</sup>				Western Range Service Calculations, Estimated Minimum Populations				Notes
(Table 4, Page 13921)		(Table 6, Pg. 13923)		D	E	F		
Column Letter ⇒	A	B	C	D	E	F		
Location by State, Region	Data Year	Estimated Population <sup>2</sup>	Location by Mgt. Zone (MZ) (2007 Data)	Minimum Population (Breeding Males)	$C \div \sum C \times 100 =$ % of Total Breeding Males	$D \times \sum A \div 100 =$ Estimated Breeding Population by Mgt. Zone	$E \times 0.03 =$ Population Included within 3% BD Area <sup>3</sup>	
CA/NV	2004	88,000	I	14,814	17.0	91,042	2,731	The total 3% Breeding Density Area population for MZs I - V is 15,963, which is 3.2 times the 5,000 minimum effective population.
CO	2008	22,646	II	42,429	48.6	260,273	7,808	
ID	2007	98,700	III	6,851	7.8	41,772	1,253	
MT	2007	62,320	IV	15,761	18.0	96,398	2,892	
ND	2007	308	V	6,925	7.9	42,308	1,269	
OR	2003	40,000	VI	315	0.4	2,142	64	26% BD Area includes 500 grouse
SD	2007	1,500	VII	241	0.3	1,607	48	34% BD Area includes 500 grouse
UT	2002	12,999						
WA	2003	1,059						
WY	2007	207,560						
Canada	2006	450						
<b>Total =</b>		<b>535,542</b>		<b>87,336</b>		<b>535,542</b>	<b>16,065</b>	

<sup>1</sup> **FWS Findings:** Fish and Wildlife Service, 50 CFR Part 17. Endangered and Threatened Wildlife and Plants; 12-Month Findings for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered. Federal Register / Vol. 75, No. 55 / Tuesday, March 23, 2010 / Proposed Rules.

<sup>2</sup> The total estimated current greater sage-grouse population of 535,542 is more than 107 times greater than the "minimum effective population" of 5,000 birds needed "to maintain evolutionary viable populations of wildlife" against the long-term risk of extinction (see FWS Findings, pages 13959 and 13985).

Note: the estimated populations for ID, MT, and WY were based upon hunting harvest data, assuming that 5% of the population is harvested. Elsewhere, the FWS Findings assume that 10% of the population is harvested by hunting (page 13921), which would cut in half the estimated populations reported in Table 4 of the FWS Findings (page 13921) for ID, MT, and WY, resulting in a total estimated current greater sage-grouse population of 351,252. This is still more than 70 times greater than the "minimum effective population" of 5,000 birds. A 3% Breeding Density Area within Management Zones I - V based upon a current estimated population of 351,252 would include 10,463 sage-grouse, which is still 2.1 times greater than the "minimum effective population."

<sup>3</sup> **3% BD Area:** 3% Breeding Density Area based upon the definition for breeding density areas from Doherty et. al., "Mapping breeding densities of greater sage-grouse: A tool for range-wide conservation planning, 24 September 2010, Prepared for the Bureau of Land Management" (BLM Completion Report: Interagency Agreement # L10PG00911).