Biodiversity Conservation Alliance * WildEarth Guardians
American Bird Conservancy * Center for Biological Diversity
Western Wildlife Conservancy * Western Watersheds Project
Great Old Broads for Wilderness * Rocky Mountain Recreation Initiative
San Juan Citizens' Alliance * Wild Utah Project

September 7, 2011

The Honorable Ken Salazar
Secretary on Interior
1849 C Street NW
Washington, DC 20240

Director Daniel Ashe
U.S. Fish and Wildlife Service
1849 C Street NW
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Director Robert Abbey
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Recommendations for a Rangewide Sage Grouse Conservation Strategy

Dear Secretary Salazar, Assistant Director Ashe, and Director Abbey:

We are pleased that the Department of Interior is embarking on a new rangewide conservation strategy for the greater sage grouse. We encourage the Bureau of Land Management (BLM) and other federal land management agencies to embark upon a new direction based on multiple use on the public lands, under which industrial activities are managed in a way that renders them compatible with sage-grouse conservation. Because the U.S. Fish and Wildlife Service is the arbiter of existing regulatory mechanisms in the context of Endangered Species Act (ESA) listing decisions, and will determine whether the new sage grouse policies of the BLM and other federal agencies is sufficient to obviate the need for Threatened or Endangered Species listing, we encourage you to weigh in with specific, science-based recommendations for sage grouse conservation standards and guidelines to be implemented as part of Interior's new strategy. On behalf of the above-captioned groups, we would like to offer our perspective based on more than a decade of experience in sage-grouse and habitat conservation.

The greater sage-grouse has long been described by researchers as a 'landscape-scale' species, requiring large tracts of undisturbed, high-quality sagebrush habitat to survive and thrive. With this in mind, the most appropriate approach for sage grouse conservation on federal lands (which make up more than fifty percent of the remaining sage grouse habitat in the nation) is a rangewide approach, in the form of Instruction Memoranda and a rangewide Programmatic Environmental Impact Statement (PEIS) that will amend Resource Management Plans on BLM-managed lands, National Forests, National Parks, National Wildlife Refuges, and lands managed by the Department of Defense throughout the range of the sage-grouse and apply strong protection measures that allow sage-grouse populations not only to survive, but to rebound to levels where the survival of the species is no longer in doubt in any significant portion of its range, and to provide a surplus for game hunting.

It is important to bear in mind that the present depressed population numbers for sage-grouse have led to the bird to its current predicament, teetering on the edge of Endangered Species listing. It is not sufficient merely to maintain sage grouse populations at their present low levels, or (worse yet) to allow additional population decreases resulting from agency-permitted projects or activities. Instead, the goal should be to recover sage-grouse populations to levels where populations are secure rangewide, and expanding populations and suitable habitats in regions of the nation where current populations are at risk.

All stakeholders throughout the West, whether their goal is sage-grouse recovery or merely avoidance of additional regulations, should be able to agree that sage-grouse recovery is an outcome that best provides certainty for both sage-grouse persistence and for industries that do business and communities who live within its range. At the same time, a strong sage-grouse conservation plan, founded in establishing core habitats where land uses are made compatible with maintaining healthy habitat, is the cornerstone for protecting not only the grouse itself but also a broad diversity of other sagebrush-dependent wildlife. Many of these species are also declining and may soon become candidates for ESA listing in the absence of a comprehensive conservation strategy.

Sound science should drive the new conservation strategy

When the State of Wyoming embarked upon its groundbreaking sage-grouse Core Area policy, it started with the right idea, identifying core habitats that supported the most abundant populations of sage grouse, and prioritizing these areas for protection. However, because a consensus-based collaborative group (the Sage-Grouse Implementation Team or "Team") was appointed by Governor Freudenthal to identify Core Areas and prescribe the conservation measures that applied there, representatives from the oil industry appointed to the Team were able to extract inappropriate concessions, both in terms of removing key habitats from Core Areas and in creating loopholes and lowering protection levels that apply both within and outside the Core Areas.

As a result, the Core Areas designated in the Powder River Basin likely are inadequate to prevent the extirpation of the species in this key linkage between populations in Montana and the Dakotas and the heart of the sage-grouse range. Populations elsewhere within Core Areas are likely to decline or even disappear if industrial development proceeds there under current guidelines. These crippling weaknesses in the Wyoming plan render it unlikely to survive judicial scrutiny as an adequate conservation measure. The federal government can and should do better for federal lands.

In his original 2008 Executive Order, Governor Freudenthal got it right: "New development or land uses within Core Population Areas should be authorized or conducted only when it can be demonstrated by the state agency that the activity will not cause declines in Greater Sage-Grouse populations."[1] This provision essentially required that the best available science be consulted, and if levels of proposed development exceeded science-based thresholds at which sage-grouse declines begin to occur, the development would not be allowable. This provision was removed in Governor Freudenthal's 2010 Executive Order, and was not reinstated by Governor Mead in his own 2011 Sage Grouse Executive Order. The Interior Department has the opportunity to redress

[1] State of Wyoming Executive Order 2008-2, ¶ 3.

this reversal of policy by ensuring that this commitment is included in the rangewide sage-grouse policy, and therefore protections reflecting the biological needs of the species (rather than the interests of developers) will apply in Core Areas on BLM lands.

The need for a fresh start in delineating Core Areas

For the purposes of the new federal policy on sage-grouse, we recommend starting from a clean slate and designating core habitat areas that include all of the most populous leks in each state. In Wyoming, Core Area delineation started from this point, but lands proposed for oil and gas projects or existing development were subtracted. Later, additional lands were removed from protection at the behest of industrial interests wishing to pursue projects incompatible with sage-grouse conservation inside designated Core Areas. This debacle illustrates the need for consistent, rigorous standards across all states in the sage grouse's range.

Science-based standards for oil and gas development

Oil and gas development poses perhaps the greatest single threat to sage-grouse persistence across the eastern half of its range. Walker et al. (2007) found that sage-grouse habitat within 4 miles of a lek site was important to the persistence of the lek. Conversely, Walker et al. (2007) concluded that leks heavily impacted by oil and gas development "typically became inactive within 3-4 years." Harju et al. (2008) found a time lag of 2-10 years post-development, at which point negative effects became evident. The same is true for winter habitats. Indeed, Naugle et al. (2006) found that a model using habitat variables and coalbed methane development provided a near perfect fit for grouse distribution data. In the Powder River Basin, CBM well density within a 4 km^2 area provided the best fit for modeling sage-grouse habitat use (Doherty et al. 2008). Holloran (2005) found that well densities greater than one well per 699 acres were correlated with lek declines. Doherty et al. (2010) did a statewide analysis in Wyoming and found that well densities greater than 1 well per square mile were correlated with sage-grouse declines.

Walker et al. (2007) found that coalbed methane development within 2 miles of a sage- grouse lek had a negative effect on lek attendance. Holloran (2005) found that active drilling within 3.1 miles of a lek reduced breeding populations, while wells already constructed and drilled within 1.9 miles of the lek reduced breeding populations. In Canada, Carpenter et al. (2010) found that sage-grouse strongly avoided oil and gas infrastructure to a distance of 1.9 km, and avoided two-track vehicle trails more weakly to a distance of 1.5 km; the closest that a grouse was located to a coalbed methane well in this study was 1,293m. Harju et al (2008) found that negative impacts of development on lek populations extended 4.8 km (3 miles) from the development. Both Holloran (2005) and Walker et al. (2007) documented the extirpation of breeding populations at active leks as a result of oil and gas development in the Upper Green River Valley and Powder River Basin, respectively. Rowland et al. (2006: A4-3 through A4-7) provide a useful literature review of the distance that impacts spread beyond the edge of disturbed areas into adjacent habitats. Males use shrubs <1 km (0.6 mi) from a lek for foraging, loafing, and shelter (Rothenmaier 1979, Emmons and Braun 1984, Autenrieth 1981). In Wyoming, State and BLM policies erroneously use this as a basis for an 0.6-mile No Surface Occupancy buffer around leks. However, there is <u>no science</u> to indicate that preventing wells within 0.6 mile of a lek will eliminate negative population impacts on sage grouse. In fact, the 1.9-mile buffer is the minimum amount found to be needed to avoid negative impacts to breeding grouse by Holloran (2005), and indeed, to protect the nesting hens that site their nests within 5 miles of a lek, an even larger buffer may be needed.

Road construction related to energy development is a primary impact on sage-grouse habitat from habitat fragmentation and direct disturbance perspectives. Rowland et al. (2006) modeled sage-grouse distribution, and reached the following conclusions:

> “The secondary road network is a highly significant factor influencing processes in this landscape and is being developed and expanded rapidly across much of the WBEA (Thomson et al. 2005). Secondary roads are being built as part of the infrastructure to support non-renewable energy extraction (Chapters 2, 4). For example, within the Jonah Field in the Upper Green River Valley, >95% of the area had road densities >2 mi/mi^2 (Thomson et al. 2005).”

p. 5-10. Furthermore,

> “The dominant feature affecting output of the sage-grouse disturbance model was secondary roads, which occupy nearly 8% of the study area (Table 5.2) and are presumed to negatively influence an even larger extent.”

Pp. 6-15 through 16. Holloran (2005) found significant impacts of road traffic on sage-grouse habitat use, concluding that habitat effectiveness declined in areas adjacent to roads with increasing vehicle traffic, documenting the secondary effect referenced by Rowland et al.

A number of researchers have noted a time lag between initiation of mineral development and sage-grouse population declines. Holloran et al. (2010) noted that yearling males avoided lekking near oil and gas infrastructure, and that yearling females avoided nesting within 950m of oil and gas infrastructure. Thus, the time lag in populations appears to be driven by the exodus of yearlings from affected areas, while older birds persist close to development until they die off. These researchers stated, “Our results…suggest to land managers that current stipulations on development may not provide management solutions.”

As a rule, breeding and nesting activity are concentrated in the habitats surrounding the lek site. In a Montana study, Wallestad and Schladweiler (1974) found that no male sage grouse traveled farther than 1.8 km from a lek during the breeding season. But following breeding, males may make long migrations to distant summer ranges (Connelly et al. 1988). Hulet et al. (1986) found that 10 of 13 hens nested within 1.9 miles of the lek site during the first year of their southern Idaho study, with an average distance of 1.7 miles from the lek site; 100% of hens nested within 2 miles of the lek site during the second year of this study, with an average distance from lek of 0.5 mile. In Montana, Wallestad and Pyrah (1974) found that 73% of nests were built within 2 miles of the lek, but only one nest occurred within 0.5 mile of the lek site. But in Bates Hole, Wyoming, Holloran (1999) found that average nesting distance from lek site was 3.25 km for adults and 5.27 km for yearlings. Wakkinen et al. (1992) cautioned that leks were poor predictors of sage-grouse nest sites; although 92% of sage-grouse nested within 3.2 km of a lek in this study, sage-grouse did not necessarily nest near the same lek where breeding took place.

Lyon (2000) pointed out that quarter-mile lek buffers were insufficient to maintain the viability of grouse populations. Several years ago, a multi-state group of fish and game biologists evaluated the standard BLM mitigation measures for grouse, and found them wholly inadequate (Christiansen and Bohne 2007). Connelly et al. (2000) recommended that sage-grouse habitat should be protected within 3.2 km of lek sites under ideal habitat conditions, within 5 km when habitat conditions are not ideal, and within 18 km where sage grouse populations are migratory. Furthermore, these researchers stated that in areas where 40% or more of the original breeding habitat has been lost, all remaining habitat should be protected. Holloran (2005) provided a critical test of BLM’s lek buffers’ effectiveness in the Jonah and Pinedale Anticline fields, and found that in the face of full-field gas development, finding that extirpation was expected for sage-grouse in both fields within 19 years if conditions remained the same (and, of course, conditions have become much worse for grouse under the continued intensification of drilling and road construction in these two fields).

Under current state and BLM Core Area standards in Wyoming, disturbance thresholds are set at five percent of the land area, beyond which additional surface disturbance is not permitted. However, the five percent disturbance threshold corresponds with oil and gas well densities that are far beyond the point where sage-grouse declines occur. For example, under the Continental Divide-Wamsutter Project, 3,000 wells were initially proposed with 22,400 acres of new surface disturbance, representing 2.1 percent of the planning area with an average well density of 4 wellsites per square mile (BLM 2000); today, sage-grouse are virtually extirpated in this field, although more than 50 leks existed prior to the project. In the Atlantic Rim coalbed methane field, 2,000 wells were permitted at a density of eight wells per square mile, far above the threshold known to cause sage grouse declines. The projected surface disturbance for this project is 15,800 acres, or 5.85% of the project area (BLM 2005). Clearly, a threshold of five percent is too high to sustain sage-grouse. Assuming a 10-acre multi-well wellpad and 0.75 miles of road per square mile – a generous figure (at 9.85 acres per mile of road), the estimated surface disturbance for a wellfield at one well per square mile would be 2.7 percent. Thus, a one- to three-percent disturbance threshold is more reasonable.

Sage-grouse standards for wind and transmission lines
Wind power generation represents a clean, renewable alternative to fossil fuels, but construction of wind farms in key habitats is likely to lead to unacceptable levels of impact. Although there is little published science directly addressing the impact of wind turbines or transmission lines on sage-grouse, there is a broad consensus among biologists that sage-grouse avoid tall structures (such as wind turbines and transmission towers) and abandon adjacent habitats. One unpublished study found that sage-grouse habitat use increased with distance (up to 600 meters) from transmission lines. Molvar (2008) compiled BLM data from a wind power project on Cotterel Mountain, Idaho and was able to determine that the erection of seven meteorological towers led to drastic declines in sage -rouse populations across nine sage-grouse leks, while populations in the surrounding area remained stable. There has been abundant scientific information that other types of energy development, particularly oil and gas, has a major impact on sage-grouse populations, and oil and gas development has some similar features such as habitat fragmentation and tall structures (in the form of drilling rigs).[2]

The USFWS (no date) conducted a literature review through 2010 and found that recommended buffer distances for sage grouse were generally 3.1 to 4 miles and beyond. We endorse the recommendations of USFWS (2003) and Mannville (2004) that wind power facilities be sited <u>at least five miles</u> from active sage grouse leks. Similarly, lands identified as sage grouse winter habitat should similarly be avoided by a distance of not less than three miles.

The State of Wyoming is pursuing a sound policy with regard to wind power development in sage-grouse habitat, that of excluding wind power development from designated Core Areas (although for several wind projects, Core Area boundaries have been shifted to exclude lands desired by the wind industry). Excluding wind power development from core habitats makes sense; in Wyoming, more than four million acres commercially viable for wind energy development are outside of Core Areas and have no other identified environmental conflicts (Molvar 2008), which represents approximately four times the maximum acreage needed for the high benchmark for wind development through 2030 (estimated at 10,000 turbines by the wind power industry). We recommend that wind power facilities be sited outside identified core habitat areas.

[2] USFWS 2010, Endangered and Threatened Wildlife and Plants; 12-Month Findings for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered, 75 Fed. Reg 13951

Sage-grouse standards for livestock grazing

Livestock grazing is considered the single most important influence on sagebrush habitats and fire regimes throughout the Intermountain West in the past 140 years (Knick et al. 2005: 68). Grazing is the most widespread use of sagebrush steppe and almost all sagebrush habitat is managed for grazing (Connelly et al. 2004; Knick et al. 2003; Knick et al. 2011).[3] Livestock grazing disturbs the soil, removes native vegetation, and spreads invasive species in sagebrush steppe (Knick et al. 2005). Cattle or sheep grazing in sage-grouse nesting and brood-rearing habitat can negatively affect habitat quality; nutrition for gravid hens; clutch size; nesting success; and/or chick survival (Connelly and Braun 1997; Beck and Mitchell 2000; Barnett and Crawford 1994; Coggins 1998; Aldridge and Brigham 2003). Livestock may directly compete with sage-grouse for grasses, forbs and shrub species; trample vegetation and sage-grouse nests; disturb individual birds and cause nest abandonment (Vallentine 1990; Pederson et al. 2003; Call and Maser 1985; Holloran and Anderson 2003; Coates 2007).

The potential conflict between livestock grazing and sage-grouse intensifies near water sources due to the importance of these areas to sage-grouse, particularly during early brood rearing. Heavy cattle grazing near springs, seeps, and riparian areas can remove grasses used for cover by grouse (Klebenow 1982). According to Call and Maser (1985:17), "rapid removal of forbs by livestock on spring or summer ranges may have a substantial adverse impact on young grouse, especially where forbs are already scarce."

Grazing infrastructure, such as water developments and fences, fragment and degrade sage-grouse habitat (Connelly et al. 2004; Braun 1998; Call and Maser 1985; Knick et al. 2003). Fatal collisions with fences were "relatively common and widespread" in sage-grouse breeding habitat in southern Idaho (Stevens 2011), corroborating other evidence that fences may pose a significant risk to low flying sage-grouse (*e.g.*, Danvir 2002, unpublished report). Fence densities exceed 2 km/km^2 in many areas occupied by sage grouse (Knick et al. 2011).

Native vegetation communities in sagebrush steppe did not evolve with grazing pressure (Mack and Thompson 1982). Excessive livestock grazing by domestic livestock during the late 1800s and early 1900s had significant impacts on sagebrush steppe and those effects persist today (Knick et al. 2003). Grazing (in addition to other factors) is implicated in the encroachment of conifers in sagebrush steppe, including western juniper (*Juniperus occidentalis*) (Kerr and Salvo 2007). Decades of livestock grazing have altered plant communities and soil and reduced productivity in sagebrush steppe (Knick et al 2003). Cattle grazed at "conservative" levels in sagebrush steppe in the northern Great Basin initially selected bunchgrasses in interspaces between sagebrush plants (France et al. 2008). The removal of native species from interspaces by cattle, in conjunction with other factors, appears to facilitate invasion by cheatgrass (*Bromus tectorum*) into these areas (Reisner 2010). The spread of cheatgrass and other invasive plants into degraded rangelands has accelerated the natural fire cycle and threatens to convert enormous areas of sagebrush habitat into annual grasslands (Wisdom et al. 2005; Miller et al. 2011).

Grazing management was identified as a threat to sage-grouse by three expert panels and in recent reviews (Connelly et al. 2011, Table 1). Federal scientists have suggested that "livestock grazing across the public lands of western landscapes has impacted and will continue to impact

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[3] One expert contended that the "livestock industry has had [a] more negative impact on sage-grouse than any other single factor" and "[i]t's rare to find any place that hasn't been grazed." Hudak, M. 2007. WESTERN TURF WARS: THE POLITICS OF PUBLIC LANDS RANCHING. Biome Books. Binghamton, NY: 28-29.

the quality of those habitats and their ability to support source populations of sagebrush bird species" (Rich et al. 2005: 592). The Fish and Wildlife Service concluded that grazing "can seriously degrade sage-grouse habitat" locally and that, "given the widespread nature of grazing, the potential for population-level impacts cannot be ignored" (75 Fed. Reg. 13942-13943). In their study on sage-grouse in eastern Oregon, Call and Maser (1985: 3) made the following basic assumption: "Where there are conflicts between sage grouse and livestock on public lands, it may be essential to give priority to sage-grouse if they are to continue to exist on these areas."

Sage grouse standards for invasive plants
Baker (2006) reviewed the fire history of sagebrush ecosystems and found natural fire to be a rare and infrequent event, suggesting a fire rotation 325-450 years in length. However, overgrazing across many of the Great Basin states has led to the invasion of cheatgrass, a highly flammable noxious weed that accelerates the fire cycle to less than five years destroying the sagebrush upon which sage-grouse rely for food and cover. Approximately 36 percent of the Greater Sage-Grouse range is invaded by cheatgrass (Lebbin et al. 2010). Because sagebrush requires at least 15 years (and up to 50) to reoccupy burned sites, restoring invades areas is a difficult and slow process. Preventing further spread into intact sagebrush should be prioritized.

Biological invasions, especially invasion by exotic annual grasses such as cheatgrass, are consistently cited as among the most important challenges to maintenance of healthy sagebrush communities (Miller et al. 2011; Wisdom et al. 2005; Suring et al. 2005). At least 46 exotic plants occur in sagebrush steppe (Pyke 2000). Estimates of the rapid spread of weeds in the West include 2,300 acres per day on BLM lands and 4,600 acres per day on all western public lands (*See* 65 Fed. Reg. 54544).

Cheatgrass, an invasive annual grass, is now the dominant species on 100 million acres (158,000 square miles) in the Intermountain West (Rosentreter 1994: 170, *citing* Mack 1981). It was estimated in 1999 that 25 percent of the original sagebrush ecosystem has been converted to cheatgrass/medusa-head rye (*Taeniatherum caput-medusae*) annual grassland, and an additional 25 percent of sagebrush steppe has only cheatgrass as understory vegetation (West 2000). Cheatgrass is estimated to spread at a rate of 14 percent annually in the United States (Duncan et al. 2004: 1412, table 1). The conversion of sagebrush steppe to exotic annual grassland has been described as "massive" (Allen 2003) and is expected to continue (Miller et al. 2011; Hemstrom et al. 2002).[4]

Cheatgrass thrives in disturbed, and especially burned, areas. It can increase fire frequency, favoring itself and potentially inhibiting perennial seedling establishment (Miller et al. 2011). Cheatgrass incursion into sagebrush habitat can lead to an eventual conversion of sagebrush/grass (perennial) community to sagebrush/grass (annual) or annual grass rangeland. In some cases, cheatgrass invasion encourages other exotic species such as medusa-head rye, knapweed and thistle. It was observed in 1979 that annual-dominated communities in sagebrush steppe appears to have crossed a threshold and created its own new equilibrium (Hanley 1979) from which restoration to functional sagebrush steppe would be very costly and difficult (if not impossible) to achieve (Billings 1990).

Sage-grouse do not use cheatgrass. Invasive species was identified as a threat to sage-grouse by three expert panels and in recent reviews (Connelly et al. 2011, Table 1). One panel listed cheatgrass as the most important threat to sage-grouse in the western portion of its range (70 Fed.

[4] A BLM ecologist and program coordinator has warned that "[c]heatgrass is changing the West." Miller, J. (AP). "Alien invader clings to socks, stokes West's wildfires." *Daily Herald* (Provo, UT) (Aug. 8, 2007).

Reg. 2267), where it has invaded much of the lower elevation, xeric sagebrush habitat (Miller et al. 2011). Land uses such as livestock grazing (Reisner 2010), off-road vehicle use, and coalbed methane development (Bergquist et al. 2007), can facilitate cheatgrass incursion in sagebrush steppe.

RECOMMENDATIONS

Based on these scientific findings, we offer the following recommendations for science-based conservation measures for sage-grouse, suitable for application in a rangewide conservation strategy:

Include the Entire Range in the Conservation Plan

We do not believe the government will be able to demonstrate that adequate regulatory mechanisms are in place unless the entire range of the species is considered, not just the lands managed by BLM, and included in the management regime outlined in the plan.

Standards for Sage-Grouse Conservation

Core Areas

- ❖ Core habitats should be identified to encompass a 5-mile buffer around the most populous leks in each state.
- ❖ Boundaries of core areas should not be altered to accommodate nonconforming uses.

Sage-Grouse Reserves

In addition to designating Core Areas, a system of sage-grouse reserves should be designated where no harm to the species would be allowed. This could include restrictions on road construction, grazing, and off-road vehicle use, and which are withdrawn from future oil and gas leasing and other mineral entry. We recommend the establishment of several sage-grouse Areas of Critical Environmental Concern (ACECs) in each Field Office where sage-grouse occur to serve this purpose. In addition, a sage-grouse Long-Term Ecological Research (LTER) area should be established to serve as a research and reference area for scientific study.

Oil and Gas

Inside Core Areas

- ❖ Maximum density of 1 well per square mile in core habitats
- ❖ For future leasing, either no future leasing in core habitats or No Surface Occupancy leases with no opportunity for exceptions or waivers.
- ❖ For existing leases, no surface occupancy within 2 miles of the lek or winter habitat and no drilling within 3 miles of the lek or winter habitats during the season of use.
- ❖ Recommend withdrawal from mineral entry; no surface mining or in situ uranium recovery allowed.
- ❖ Total surface disturbance not to exceed 1 to 3 percent of surface area.

Outside Core Areas

- ❖ Year-round No Surface Occupancy within 2 miles of the lek or winter habitat, and no drilling within 3 miles of the lek or winter habitat during the season of use.

Wind and Transmission

Inside Core Areas

- No wind energy development
- Transmission lines limited to existing electrical transmission corridors of ¼ mile maximum width

Outside Core Areas

- Wind farms and transmission lines sited at least 5 miles from active sage-grouse leks and at least 3 miles from identified winter habitats.
- Transmission lines allowed along existing electrical transmission corridors of ¼ mile maximum width.

Livestock Grazing

- During spring and summer, do not permit grazing in key sage-grouse habitats until after June 20 and remove livestock by August 1 with a goal of leaving at least 70 percent of the herbaceous production each year to form residual cover to benefit sage-grouse nesting the following spring.
- Prohibit twice-over grazing systems, where livestock pass through an area twice in a grazing season.
- Encourage winter grazing, which is generally less negative for herbaceous vegetation and sage-grouse than grazing during the growing season.
- Water and salt should be placed near fences or fence corners, as livestock tend to congregate in these areas. The goal should be to reduce livestock impacts in the centers of pastures or allotments.
- Avoid constructing new fences; remove unnecessary fences; and visually mark remaining fences to reduce sage-grouse collisions with fences.
- Facilitate permanent, voluntary grazing permit/lease retirement.

(*see* Braun 2006).

Invasive Plants

- Restrict activities on public land that facilitate the spread of invasive plants.
- Rapidly restore burned or disturbed sagebrush steppe to prevent incursion of invasive plants.
- Develop and implement methods for prioritizing and recovering sagebrush steppe invaded by nonnative plants.

CONCLUSIONS

We applaud the Interior Department's leadership to initiate a rangewide conservation strategy for sage-grouse, and to base the provisions of that strategy in sound science. Conserving large core habitats for sage-grouse can lead to many benefits, not just in terms or sage-grouse recovery itself, but also in terms of conservation of a variety of sagebrush-dependent wildlife, from the pygmy rabbit to the pronghorn antelope.

For many years, heavy industrial use as well as unsustainable levels of grazing have had heavy impacts on sagebrush habitats in many parts of the West, resulting in the decline of the sage-grouse and many other species. Protecting the sage-grouse will help to lead the BLM and other agencies toward a better balance between resource extraction and land and wildlife conservation.

As you craft this strategy and the policies to implement it, we urge you to stand firm behind strong conservation measures that reflect the biological requirements of the bird as elucidated in the science. This strategy should establish core habitats where science-based protection measures are applied, ensure that protection measures are sufficiently rigorous to prevent grouse declines and encourage grouse recovery, and close the loopholes in the Wyoming core area strategy in all cases where the federal government has habitat management authority.

Thank you for your attention to this matter, and please let us know how we can be of further assistance.

Respectfully yours,

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signing on behalf of

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