



Buffalo Field Office Draft Resource Management Plan and Environmental Impact Statement	
Sage-Grouse Conservation Issue	Buffalo FO Draft RMP/EIS (Preferred Alternative D)
<b>Priority Sage-Grouse Habitat</b>	
<p>Greater Sage-grouse are a landscape species (Connelly et al. 2011a). Migratory populations have large annual ranges that can encompass &gt;2,700 km<sup>2</sup> (1,042 mi<sup>2</sup>/667,184 ac) (Knick and Connelly 2011, <i>citing</i> Dalke et al. 1963; Schroeder et al. 1999; Leonard et al. 2000) (the species may use up to 2,500 mi<sup>2</sup> per population (Rich and Altman 2001)). Large-bodied birds are generally more strongly affected by habitat loss and fragmentation (Winter et al. 2006). Although conclusive data on minimum patch size is unavailable (Connelly et al. 2011a), conserving large expanses of sagebrush steppe is the highest priority to conserve sage-grouse (Aldridge et al. 2008; Connelly et al. 2011b; <i>see</i> Manier et al. 2013: 25-26).</p> <p>Sage-grouse conservation plans should designate and manage large areas of priority sage-grouse habitat to conserve the species. Priority habitat is generally defined as “having the highest conservation value to maintaining sustainable Greater Sage-grouse populations” (BLM Memo 2010-071) and should include all active sage-grouse leks, and brood-rearing, transitional and winter habitats. “Priority habitat will be areas of high quality habitat supporting important sage-grouse populations, including those populations that are vulnerable to localized extirpation but necessary to maintain range-wide connectivity and genetic diversity” (BLM Memo 2010-071).</p>	<p>The DRMP/EIS designates sage-grouse core population areas and connectivity corridors, and identifies sage-grouse seasonal habitats (lii; 54; Map 33). The core areas and connectivity corridors include fewer than half of sage-grouse leks in the planning area, including leks on BLM land (Map 33). The core areas and connectivity corridors include mostly non-federal land (Map 33). The DRMP/EIS, citing Taylor et al. (2012), noted that core areas designated in the Buffalo Field Office may be inadequate to conserve sage-grouse (30).</p>
<p>Prohibit new surface disturbance in priority sage-grouse habitat. Where new disturbance cannot be avoided (e.g., due to valid existing rights), <b>(A)</b> minimize impacts by limiting preexisting and permitted disturbance to one instance per section of sage-grouse habitat regardless of ownership, <b>(B)</b> with less than three percent surface disturbance per section or priority area (SGNTT 2011: 8; Knick et al. 2013). Disturbances include but are not limited to highways, roads, transmission lines, substations, wind turbines, oil and gas wells, heavily grazed areas, range developments, pipelines, landfills, mines, and vegetation treatments that reduce sagebrush cover. <b>(C)</b> Where possible, buffer active sage-grouse leks against surface disturbance or occupancy by 4 miles<sup>1</sup> (SGNTT 2011: 23).</p>	<p>Surface occupancy associated with fluid mineral development and, <i>to the extent necessary</i>, other activities would be prohibited within 0.6 miles of sage-grouse leks in sage-grouse core/connectivity habitat (110, SS WL-4024; 113, SS WL-4024; 118, SS WL-4025; 120, SS WL-4025). This lek buffer could be waived, modified or excepted for fluid mineral development in core areas (BMPs 1713) (application of BMPs are also discretionary, “may impose,” 1693). For fluid minerals development and, <i>to the extent necessary</i>, other activities, surface disturbance would be limited to an average of one site and no more than five percent surface disturbance per section within analysis area in sage-grouse core areas (110, SS WL-4024; 118, SS WL-4025) (the limitation on a single disturbance per section apparently only applies to mineral extraction, 118, SS WL-4025) (the density cap could be waived, modified or excepted in core habitat, 1718-1719); limit disturbance associated with fluid minerals development and other activities to no more than five percent per section of analysis area in sage-grouse connectivity areas (113, SS WL-4024; 121, SS WL-4025) (the density cap could be waived, modified or excepted in connectivity habitat, BMPs 1720-1721).</p>

<sup>1</sup> Smaller sage-grouse lek buffers may be justified where research demonstrates that most sage-grouse nests (i.e., > 90 percent) would be protected by the smaller buffer (see, e.g., Conservation Plan for Greater Sage-Grouse in Utah, unpublished: 9), although the impacts from continued and future land use (pursuant to valid existing rights) in nesting habitat would still advise adopting larger 4-mile lek buffers to conserve the species.

	Core, connectivity and general sage-grouse habitat open to development of locatable (67, Locatable-2003; Map 8), leasable—coal (68, Coal-2002; Map 11) and non-coal (72, OL-2002)—and salable (73, Salable-2002; Map 10) minerals. Constructing powerlines in sage-grouse core/connectivity areas would be “avoided” (108, SS WL-4022) ( <i>but see</i> 111, SS WL-4024; 119, SS WL-2025, prohibit overhead electric transmission lines in core areas unless within one-half mile of existing transmission line).
Identify <sup>2</sup> and protect sage-grouse winter habitat (Braun et al. 2005, <i>citing</i> Connelly et al. 2000 and others; Moynahan et al. 2007).	The DRMP/EIS recognizes the importance of winter habitat to sage-grouse (366; 1094) and identifies sage-grouse winter habitat in the planning area (Map 33). However, the preferred alternative would only seasonally prohibit surface-disturbing and disruptive activities in winter concentration areas in sage-grouse core/connectivity areas (120, SS WL-4025; 125, SS WL-2025)—and the seasonal restriction may be <i>waived, modified or excepted</i> (BMPs 1717) (application of BMPs are also discretionary, “may impose,” 1693). The DRMP/EIS, citing Doherty et al. (2008), acknowledged that sage-grouse avoid otherwise suitable winter habitat once they have been developed for energy resources (i.e., when development occurs in these areas in spring, summer and autumn). Further, most identified sage-grouse winter range in the Buffalo Field Office is outside core areas and connectivity corridors (Map 33).
Manage or restore sage-grouse habitat so that at least 70 percent of the land cover is sagebrush sufficient to meet sage-grouse needs <sup>3</sup> (SGNTT 2011: 7; Knick et al. 2013 <sup>4</sup> ). <sup>5</sup>	Sagebrush cover and average patch size have decreased in the planning area (365) and the plan fails to prescribe contains no prescription for maintaining or restoring sage-grouse habitat so that at least 70 percent of land cover is sagebrush steppe.
<b><i>Restoration Sage-Grouse Habitat</i></b>	
Designate restoration sage-grouse habitat to focus habitat restoration efforts to extend sage-grouse habitat and mitigate for future loss of priority habitat (BLM Memo MT-2010-017). Restoration habitat may be degraded or fragmented habitat that is currently unoccupied by sage-grouse, but might be useful to the species if restored to its potential natural community. Restoration habitat should be identified in management planning based on its importance to sage-grouse and the likelihood of successfully restoring sagebrush communities (Meinke et al. 2009; Wisdom et al. 2005a). Effective restoration requires a regional approach (e.g., sub/regional EISs) that identifies appropriate options across the landscape (Pyke 2011). Passive restoration should be prioritized over active restoration methods in these areas.	The plan does not identify restoration habitat; it would prescribe restoration in the course of land and resource management, including in sage-grouse brooding habitat (SS WL-012), sage-grouse core/connectivity areas affected by fluid minerals development (112, SS WL-4024) and other activities (119-120, 122, SS WL-4025). Restoration requirements for projects could be waived, modified or excepted (BMPs 1714). The Powder River Basin Restoration Program coordinates restoration efforts in sagebrush habitats (1138).

<sup>2</sup> Failure to map sage-grouse winter habitat could be grounds for remanding an RMP/EIS back to BLM to address the omission. WWP v. Salazar, 4:08-CV-516BLW, Slip Op. at 3.

<sup>3</sup> While  $\geq 70$  percent of land cover is sagebrush, the remainder of the landscape should be other natural habitats or areas that could be restored to sagebrush steppe.

<sup>4</sup> Seventy-nine percent of the area within 5 km of active sage-grouse leks was in sagebrush cover.

<sup>5</sup> See also Karl and Sadowski (2005): 15.

<i><b>Specially Designated Sage-Grouse Habitat</b></i>					
Designate a subset of sage-grouse priority habitat areas as sagebrush reserves (e.g., Areas of Critical Environmental Concern (Bureau of Land Management), Zoological Areas (Forest Service), <sup>6</sup> research natural areas (Bureau of Land Management, Forest Service), or national wildlife refuges (Fish and Wildlife Service), etc.) to be specially managed refugia for sage-grouse and other sagebrush-dependent species. <sup>7</sup> Sagebrush reserves should encompass centers of sage-grouse abundance on the landscape and protect a sufficiently large proportion of habitat in each planning area to sustain biological processes, recover species and mitigate for the systematic effects of climate change, invasion by nonnative plants and unnatural fire. <sup>8</sup> Sagebrush reserves should offer additional conservation benefits for sage-grouse and other sagebrush-dependent species over priority habitat. They may be withdrawn from locatable and leasable minerals development (43 U.S.C. § 1714); closed to new surface disturbance; and prioritized for grazing permit retirement and removal of infrastructure (unneeded oil and gas equipment, roads, range developments, fencing, etc.).					The DRMP/EIS analyzed a Sagebrush Ecosystem Area of Critical Environmental Concern encompassing sage-grouse leks and winter concentration areas and comprising 467,897 acres of BLM-administered surface (171, ACEC-7003) and 2,248,685 acres of federal mineral estate (2131), but the plan did not propose to designate the ACEC in the preferred alternative (171, ACEC-7003).
<i><b>Fluid Minerals Development (unleased)</b></i>					
State of Wyoming		Wyoming BLM	NTT Report Recommendations	Sage-Grouse Ecology	Buffalo FO Draft RMP/EIS
Lek Buffers	No surface occupancy within 0.6 miles of occupied sage-grouse leks in core areas, and “no more than” 0.25 miles from occupied leks outside core areas.	Surface occupancy is “prohibited” on or within 0.6 miles of occupied sage-grouse leks in core areas, and 0.25 miles from occupied leks outside core areas.	No surface occupancy throughout priority habitat; exceptions may be considered if a 4-mile no surface occupancy buffer is applied, and if an entire lease is within priority habitat, then a limitation of one well-pad per section might be applied.	Development negatively affects sage-grouse 1.9 miles from occupied leks (Holloran 2005). Most sage-grouse hens nest within 4 miles of leks (Moynahan 2004; Holloran and Anderson 2005). Effects of drilling on sage-grouse were noticeable out to 12.4 miles from leks (Taylor et al. 2012; Taylor et al. 2013).	Surface occupancy would be prohibited within 0.6 miles of sage-grouse leks in sage-grouse core/connectivity habitat (110, SS WL-4024; 113, SS WL-4024; 118, SS WL-4025; 120, SS WL-4025). This lek buffer could be <i>waived, modified or excepted</i> for fluid mineral development in core areas (BMPs 1713) (application of BMPs are also discretionary, “may impose,” 1693).
	Density	Maximum development density of 1 well per an average of 640 acres.	Maximum development density of 1 well per 640 acres (with some exceptions).	Limit disturbance to 1 well per 640 acres.	Maximum development density of 1 well per 640 acres to 1 well per 699 acres (Holloran 2005; Doherty et al. 2010a; Doherty 2008).

<sup>6</sup> The Sage-Grouse Recovery Alternative referred to specially designated areas on Forest Service lands as “Sagebrush Conservation Areas,” p. 30 ([www.sagebrushsea.org/pdf/Sage-Grouse\\_Recovery\\_Alternative.pdf](http://www.sagebrushsea.org/pdf/Sage-Grouse_Recovery_Alternative.pdf)).

<sup>7</sup> More than 350 species of conservation concern occur in sagebrush steppe (Wisdom et al. 2005a: 21 and App. 2).

<sup>8</sup> See Sage-Grouse Recovery Alternative for criteria for designating sagebrush reserves, p. 50 ([www.sagebrushsea.org/pdf/Sage-Grouse\\_Recovery\\_Alternative.pdf](http://www.sagebrushsea.org/pdf/Sage-Grouse_Recovery_Alternative.pdf)).

Disturbance	In core areas, surface disturbance limited to 5 percent of “suitable sage-grouse habitat” per an average of 640 acres.	Cumulative existing surface disturbance may not exceed 5 percent per 640 acres (with some exceptions).	Surface disturbance may not exceed 3 percent per 640 acres (exceptions may be considered in limited circumstances).	Ninety-nine percent of active sage-grouse leks are in landscapes with less than 3 percent disturbance within 5 km of leks (Knick et al. 2013).	Limit disturbance to no more than five percent surface disturbance per section within analysis area in sage-grouse core areas (118, SS WL-4025) and connectivity habitat (113, SS WL-4024).
Winter Habitat	Activities restricted in sage grouse winter habitat in core areas from December 2 – March 13; “seasonal restrictions should also be considered” in winter habitat outside core areas.	No surface disturbing or disruptive activities in sage-grouse winter habitat from November 30 – March 14.	No surface occupancy in winter habitat during any time of the year; exceptions may be considered if a 4-mile no surface occupancy buffer is applied, and if an entire lease is within priority habitat, then a limitation of one well site per section might be applied.	No surface disturbance in or adjacent to winter habitat any time of year (Walker 2008).	Surface-disturbing and disruptive activities seasonally restricted in winter concentration areas in sage-grouse core/connectivity areas (120, SS WL-4025; 125, SS WL-2025)—and the restriction may be <i>waived, modified or excepted</i> (BMPs 1717) (application of BMPs are also discretionary, “may impose,” 1693).
<b>Livestock Grazing</b>					
<p>For range management, sage-grouse habitat objectives should be based on, in priority order, potential natural community within the applicable Ecological Site Description, Connelly et al. (2000: 977, Table 3), or other objectives that have been demonstrated to be associated with increasing sage-grouse populations. Utilization levels should not exceed 25 percent annually on uplands, meadows, flood plains and riparian habitat (Holecheck et al. 2010). Habitat objectives should be applied to all sage-grouse habitat areas. Management plans should:</p> <ol style="list-style-type: none"> <li>1. Maintain <math>\geq 18</math> cm average grass height in nesting and brood-rearing habitat (Connelly et al. 2000; Braun et al. 2005).</li> <li>2. Control livestock grazing to avoid contributing to the spread of cheatgrass (<i>Bromus tectorum</i>) (Reisner et al. 2013).</li> <li>3. Facilitate voluntary grazing permit retirement in sage-grouse priority habitat (<i>see</i> SGNTT 2011: 17).</li> </ol>					<p>Livestock grazing management objectives in sage-grouse habitat in the DRMP/EIS are not based on potential natural community within the applicable Ecological Site Description or Connelly et al. (2000), although the plan recognizes the importance of maintaining vegetative cover and diversity in seasonal habitats (366). Objectives for conserving sensitive species include managing “vegetation composition, diversity and structure, as determined by ecological site description and WGFD protocols (WY IM-2012–019), to achieve Greater Sage-Grouse habitat management objectives, in cooperation with Stakeholders” (107, SS WL-4013). The Wyoming Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management aspire to achieve or maintain habitat conditions to support listed, candidate and sensitive species (2094, 2096). The DRMP/EIS also hopes to “manage livestock grazing to sustain... special status species” (166, Grazing-6005). None of these objectives and guidelines include minimum standards to achieve their stated goal. Various BMPs alternately seek to manage vegetation to maintain sage-grouse habitat objectives and prevent weed encroachment (BMPs 1616; 1618; 1624; 1625; 1631; 1632) and use livestock to reduce fire fuel loads (BMPs 1612-1613; 1622), which are often conflicting goals.</p> <p>The plan does not limit forage utilization levels in sage-grouse</p>

	<p>habitat. One BMP recommends limiting utilization of sagebrush by livestock and native ungulates to 20 percent (BMPs 1632).</p> <p><b>(1)</b> No specific standard for grass height is included in the plan, although generally stated management goals (see above) may achieve the objective, <i>if applied</i>. <b>(2)</b> Cheatgrass is present in the planning area (308) and is increasingly a management concern (6; 289; 291), including in sagebrush steppe (291; 297). "Invasive species are considered the single most serious threat to natural habitats" in Wyoming (306); cheatgrass poses a major threat to wildlife (327). The DRMP/EIS acknowledges that livestock transport invasive plant seeds and that ground disturbance and areas where native vegetation has been displaced render habitat vulnerable to weed incursion (309). However, and paradoxically, instead of restricting grazing in areas where cheatgrass occurs, the plan (309) and BMPs (BMPs 1622) recommend, without reference to supporting research, using livestock to suppress exotic weeds. <b>(3)</b> The DRMP/EIS would not facilitate grazing permit retirement in sage-grouse habitat.</p> <p>The DRMP/EIS contends that "[o]verall, the management actions for livestock grazing in Alternative D will have major beneficial effects on special status wildlife species in the planning area" (1137).</p>
<b>Climate Change Effects</b>	
<p>Account for the effects of climate change in management planning (Secretarial Order 3289, 02-22-2010; CEQ Memo, 02-18-2010 (draft)). Climate change is a recognized threat to sage-grouse (Connelly et al. 2011b: 556, Table 24.2; Blomberg et al. 2012; van Kooten et al. 2007) that is also predicted to have deleterious impacts on sagebrush steppe (Schlaepfer et al. 2012; Neilson et al. 2005). Most climate change simulations predict sagebrush steppe will contract as mean temperatures increase and the frost line shifts northward (Blomberg et al. 2012; Neilson et al. 2005). In the worst case scenario, sagebrush species are simulated to contract to just 20 percent of current distribution (Wisdom et al. 2005b: 206, <i>citing</i> Neilson et al. 2005). The largest remaining areas will be in southern Wyoming and in the gap between the northern and central Rocky Mountains, followed by areas along the northern edge of the Snake River Plateau and small patches in Washington, Oregon and Nevada (<i>see</i> Miller et al. 2011: 181, Fig. 10.19). Sagebrush steppe may also shift northward in response to increased temperatures (Schlaepfer et al. 2012; Shafer et al. 2001).</p> <p>Measures for ameliorating the effects of climate change on species and landscapes include increasing the size and number of protected areas, maintaining and enhancing connectivity between protected areas, and identifying and protecting areas likely to retain suitable climate/habitat conditions in the future (even if not currently occupied by the species of concern). Management should also repulse invasive species, sustain ecosystem processes and functions, and restore degraded habitat to enhance ecosystem resilience to climate change (Chester et al. 2012; NFWPCAS 2012).</p>	<p>The DRMP/EIS recognizes that climate change is a planning issue (xlii; 10) and briefly notes the potential effects of climate change on shrubland communities (297) and fire management (287). However, the plan lacks a detailed review of climate change effects on natural resources, including sage-grouse, and fails to prescribe conservation measures to support ecosystem resilience and species persistence in the face of climate change.</p>
<b>Wind Energy Development</b>	
<p>Prohibit wind energy development in priority sage-grouse habitat (Jones 2012; SGNTT 2011: 12). If development is permitted, locate turbines and infrastructure at least four miles from sage-grouse leks (Manville 2004; Jones 2012); do not site wind energy development in or adjacent to sage-grouse wintering areas.</p>	<p>The conservation alternative (Alt. B) would "prohibit renewable energy projects" in sage-grouse core areas and connectivity corridors, while the preferred alternative would "prohibit <i>commercial</i></p>



	renewable energy projects” in core and connectivity areas (108, SS WL-4021). The preferred alternative would also make key sage-grouse habitat outside core areas and connectivity corridors “avoidance,” rather than exclusion areas for renewal energy development ( <i>compare</i> Map 33 and Map 49).
<b><i>Bureau of Land Management Sensitive Species Management</i></b>	
Greater sage-grouse are a candidate species for listing under the Endangered Species Act (ESA) and a designated Bureau of Land Management “sensitive species” across their range. BLM policy directs that actions authorized, funded or implemented by BLM do not contribute to the need to list a candidate species under the ESA (BLM WO IM 97-118; BLM Manual 6840). “As a federal agency, the BLM is obligated to develop and implement a strategy to avoid having its management activities contribute to the need to list greater sage-grouse under the [Endangered Species Act] (Lander RMP/FEIS: 1282). This includes “[p]rioritizing Bureau sensitive species and their habitats for conservation action based on considerations such as human and financial resource availability, immediacy of threats and relationship to other BLM priority programs and activities (BLM Manual 6840.2(C)(5)).	Sage-grouse populations have declined rangewide (365), and particularly in northeast Wyoming (368-369; <i>see also</i> Taylor et al. 2012). Habitat loss and degradation from energy development in the Powder River Basin is so pervasive that it is questionable whether core areas could be designated that are large enough and with high enough quality habitat to sustain remaining populations (368, <i>citing</i> Taylor et al. 2012). Most sage-grouse habitat in the planning area is leased for fluid minerals development (366; Map 12); mineral development is expected to continue on federal and non-federal lands in the planning area (29; 1137-1138); stipulations for drilling would not apply to existing leases or in general habitat (lii); and where they are applied, they are not expected to stem continued population declines (367-368; Copeland et al. 2013). The preferred alternative, which will only apply (modest) protections to 15 percent of sage-grouse nesting habitat and 29 percent of the breeding population in the planning area (1127), is expected to have significant impacts on greater sage-grouse (1126-1127). Development of leasable minerals (1129-1130), renewable energy and rights-of-way (1135) would fragment and eliminate sage-grouse habitat (1138), including in core/connectivity areas. “Implementing any of the alternatives would contribute to the cumulative adverse effects to the Threatened, Endangered, Proposed, Candidate, and sensitive species in the planning area” (1137).

<b><i>Sage-Grouse Recovery Alternative</i></b>	
Conservation organizations submitted the Sage-Grouse Recovery Alternative as a complete alternative to be analyzed and considered in management plans affecting sage-grouse in accordance with the National Environmental Policy Act (42 U.S.C. §§ 4321- 4347). The recovery alternative seeks to maintain and increase sage-grouse abundance and distribution by conserving, enhancing and restoring sagebrush steppe. It is comprehensive, reasonable and feasible to implement, and prescribes scientifically valid conservation measures to provide the best opportunity to conserve and recover sage-grouse. BLM policy directs the agency to “[e]nsure[] that land use and implementation plans fully address appropriate conservation of BLM special status species” (6840.04(E)(6)).	The DRMP/EIS did not analyze the Sage-Grouse Recovery Alternative. The conservation alternative (Alt. B) analyzed occupancy restrictions and prohibitions recommended in the NTT report within 4 miles of leks and winter habitat, but that is not equivalent to analyzing the full Recovery Alternative, which also prescribed additional and more protective measures than the NTT report.

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