



Northwest Colorado Greater Sage-Grouse Draft Land Use Plan Amendment and Environmental Impact Statement	
Sage-Grouse Conservation Issue	NW CO DLUP/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 NW CO DLUP/EIS identifies the same amount of preliminary priority habitat (priority habitat) (1,576,900 acres/926,700 surface acres), preliminary general habitat (general habitat) (1,134,800 acres/742,000 surface acres) and linkage/connectivity habitat (181,900 acres/82,000 surface acres) on federal public lands (including subsurface estate) for all three action alternatives in the plan (42, Table 2-2; 7). Priority habitat is intended to protect 84 percent of sage-grouse on all land ownerships in northwest Colorado (Rocky Mountain Wild).</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>No sage-grouse habitat is recommended for mineral withdrawal; only very small areas are closed to fluid mineral leasing, mineral materials sales, and nonenergy mineral leasing (43, Table 2-2). The preferred alternative does not include a density cap on development in sage-grouse habitat (<i>see</i> 163).</p> <p><b>Leased, undeveloped fluid minerals:</b> Seasonal restriction on development within 4 miles of lek (162, Table 2-4, NTT 47, GRSG PPH COA-47-51d); disturbance limited to 5 percent of surface within management zone (162, Table 2-4, NTT 47, re. PPH COA-47-51d) (although <i>see</i> 166, Table 2-4, NTT 55, GRST PPH COA-55d, “surface disturbance cannot exceed 5 percent for <i>ecological sites</i> that support sagebrush in [priority habitat] for that [management. zone]” (emphasis added)). These prescriptions also apply to uranium development (188).</p> <p><b>Leased, undeveloped solid minerals:</b> (coal) encourage lessees to voluntarily follow recommended development prescriptions (169, Table 2-4, NTT 62).</p> <p><b>Unleased, solid minerals:</b> (coal) find unsuitable all surface mining of coal in sage-grouse habitat; manage development within 5 percent</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.

	<p>disturbance cap, although this disturbance standard may be waived (169, Table 2-4, NTT 63).<sup>2</sup> Require that surface disturbance associated with new underground coal mining is placed outside priority habitat (169, Table 2-4, NTT 64) (although exceptions available, 169-170, Table 2-4, NTT 69); manage development within 5 percent disturbance cap, although the disturbance standard may be waived (169, Table 2-4, NTT 64). Oil shale and tar sands development is excluded in priority habitat (188).</p> <p><b>Nonenergy leasable minerals:</b> Consider allowing expansion of existing leases; manage disturbance under 5 percent of surface, although the disturbance cap could be waived (175-176, Table 2-4, NTT 69). Prescriptions and recommendations applied to fluid mineral development also apply to existing nonenergy leasable mineral leases (176, Table 2-4, NTT 70).</p> <p><b>Locatable minerals:</b> The preferred alternative would not recommend any areas for mineral withdrawal (43, Table 2-2), including for locatable minerals (174, Table 2-4, NTT 65). Mitigation and seasonal restrictions may be applied in plans for operations to develop minerals (175, Table 2-4, NTT 67).</p> <p><b>Salable minerals:</b> Consider allowing expansion of existing leases; manage disturbance under 5 percent of surface, although the disturbance cap could be waived (176, Table 2-4, NTT 71).</p> <p><b>Renewable energy:</b> The preferred alternative would not prohibit wind energy development or industrial solar projects in priority habitat (149-150, Table 2-4, NTT 18b-18d).</p> <p><b>Rights-of-way:</b> Avoid granting new rights-of-way; exclude construction of large transmission lines in priority habitat, except for 68,000 acres (146, Table 2-4, NTT 10). Newly developed rights-of-way would be subject to 5 percent disturbance cap (146, Table 2-4, NTT 10), although an exception may be granted (147, Table 2-4, NTT 10).</p> <p><b>Travel management:</b> Limit motorized travel to existing roads, primitive roads and trails at a minimum (143, Table 2-4, NTT 1). Newly constructed roads may be excepted from 5 percent disturbance cap (144, Table 2-4, NTT 5). No prohibition on constructing new roads within 4 miles of active leks (145, Table 2-4).</p>
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<sup>2</sup> See 43, Table 2-2: why would more acres be found unsuitable for surface mining of coal under Alternative A (current management) than the preferred alternative? See also 189, Table 2-6.

<p>Identify<sup>3</sup> and protect sage-grouse winter habitat (Braun et al. 2005, <i>citing</i> Connelly et al. 2000 and others; Moynahan et al. 2007).</p>	<p>“Winter concentration areas” is defined in the NW CO DLUP/EIS (1029-1030). Priority habitat generally includes sage-grouse winter concentration areas (xxii), and winter habitat is described (12-14) and mapped (B-29, Fig. 3-4) in the planning area. However, except for protections associated with priority habitat designation or seasonal restrictions, sage-grouse winter habitat is not specially protected in the plan.</p>
<p>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>4</sup> (SGNTT 2011: 7; Knick et al. 2013<sup>5</sup>).<sup>6</sup></p>	<p>The preferred alternative would, as part of range management and fuels management, “[r]etain in sagebrush habitat, for each [management zone], a minimum of 70 percent of ecological sites capable of supporting 12 percent canopy cover of Wyoming sagebrush or 15 percent canopy cover of Mountain sagebrush. Manage for a total disturbance cap of less than 30 percent, to include all loss of sagebrush from all causes, including anthropogenic disturbance, wildfire, plowed field agriculture, and vegetation treatments” (155, Table 2-4, NTT 32; 178, Table 2-4, NTT 77; 185-186, Table 2-4, NTT 95).</p>
<p><b><i>Restoration Sage-Grouse Habitat</i></b></p>	
<p>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.</p>	<p>The preferred alternative does not designate restoration habitat. It does include a number of prescriptions for restoring habitat (184-186, Table 2-4, NTT 90-93, 95-97), although it fails to adopt ecological standards and management restrictions intended to ensure that restoration benefits sage-grouse (186-187, Table 2-4).</p>

<sup>3</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>4</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>5</sup> Seventy-nine percent of the area within 5 km of active sage-grouse leks was in sagebrush cover.

<sup>6</sup> *See also* Karl and Sadowski (2005): 15.

<b><i>Specially Designated Sage-Grouse Habitat</i></b>					
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>7</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>8</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>9</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.).				Priority habitat areas (926,800 acres) were found to meet relevance and importance criteria for designation as ACECs (40; 187, Table 2-4), <sup>10</sup> but the preferred alternative would not designate new ACECs to conserve sage-grouse (43, Table 2-2).	
<b><i>Fluid Minerals Development (unleased)</i></b>					
	<b>State of Wyoming</b>	<b>Wyoming BLM</b>	<b>NTT Report Recommendations</b>	<b>Sage-Grouse Ecology</b>	<b>NW CO DLUP/EIS (Preferred Alternative D)</b>
<b>Lek Buffers</b>	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).	Apply no surface occupancy stipulation to development of unleased fluid minerals development in priority habitat (161, Table 2-4, NTT 46, GRSG PPH NSO-46d) (0.6-mile protective lek buffer required for active leks in all designated habitat, 161, Table 2-4, NTT 46, GRSG ADH NSO-46d). These stipulations may be waived, modified, or excepted (E-5 – E-6).  Seasonal limitation on development within a minimum of 4 miles of active leks in all designated habitat (161, Table 2-4, NTT 46, GRSG ADH TL-46d). This stipulation may be waived, modified, or excepted (E-6).

<sup>7</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>8</sup> More than 350 species of conservation concern occur in sagebrush steppe (Wisdom et al. 2005a: 21 and App. 2).

<sup>9</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)).

<sup>10</sup> The Federal Register notice announcing the availability of the Northwest Colorado Draft LUP/EIS stated that the ACEC analyzed in the EIS was approximately 910,000 acres. 78 Fed. Reg. 50089.

<b>Density</b>	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).	The preferred alternative would not impose a density cap on fluid minerals development ( <i>see</i> 163).
<b>Disturbance</b>	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).	Surface disturbance “within ecological sites that support sagebrush in [priority habitat] would not exceed 5 percent” (161, Table 2-4, NTT 46, re. PPH CSU-46d). This stipulation may be waived, modified, or excepted (E-7).
<b>Winter Habitat</b>	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).	Except for protections associated with priority habitat designation, sage-grouse winter habitat is not specially protected from fluid minerals development.

***Livestock Grazing***

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:

1. Maintain  $\geq$  18 cm average grass height in nesting and brood-rearing habitat (Connelly et al. 2000; Braun et al. 2005).
2. Control livestock grazing to avoid contributing to the spread of cheatgrass (*Bromus tectorum*) (Reisner et al. 2013).
3. Facilitate voluntary grazing permit retirement in sage-grouse priority habitat (see SGNTT 2011: 17).

Objectives for range management include “maintain[ing] residual herbaceous cover to reduce predation during nesting” and “avoid[ing] [sage-grouse] habitat changes due to herbivory” (150, Table 2-4).

The preferred alternative would incorporate sage-grouse “habitat objectives” in all designated sage-grouse habitat in grazing management planning (150, Table 2-4, NTT 19). Objectives based on “Ecological Site/Range Site Descriptions” would be developed in future planning (151, Table 2-4, NTT 23); range management would be consistent with “ecological site potential and within the reference state subject to successional stage objectives” (151, Table 2-4, NTT 24). Terms and conditions would be included on grazing permits/leases that assure plant growth and residual vegetation remains for sage-grouse hiding cover” (152, Table 2-4, NTT 25). Various grazing "guidelines" generally support sage-grouse habitat objectives (K-6 - K-7).

The preferred alternative does not prescribe a forage utilization standard for livestock grazing and levels allowed in some current plans are too high to support vegetation recovery (see 85-86, Table 2-3). Notes associated with Standard 3 in Appendix K, BLM Standards for Public Land Health and Guidelines for Livestock Grazing Management in Colorado, suggest that the goal of maintaining “vigorous” plant community might provide needed cover for sage-grouse, although the same notes also admit Standard 3 “covers so many ecological process that proper interpretation is required” (K-5). Standard 3 may not be properly interpreted now, as a majority of grazed public lands for which data exists fails to meet rangeland standards and guidelines (see 280).

[1] The NW CO DLUP/EIS fails to include standards for grass height in sage-grouse seasonal habitats (including in riparian zones, 153, Table 2-4, NTT 28). Notes associated with Standard 4 in Appendix K, BLM Standards for Public Land Health and Guidelines for Livestock Grazing Management in Colorado, claim that land managers would consult Appendix A in the Colorado Greater Sage-grouse Conservation Plan (2008) (which is not included in the NW CO DLUP/EIS) for habitat characteristics important to sage-grouse (K-5). The appendix includes a range of grass heights in sage-grouse habitats, some of which might achieve habitat objectives for sage-grouse, if they are in fact applied in grazing management (152, Table

	<p>2-4, NTT 25; <i>but see</i>, K-5, managers may substitute recommended grass heights with other standards).</p> <p><b>[2]</b> The NW CO DLUP/EIS does not limit or restrict livestock grazing in areas invaded by cheatgrass, even though inappropriate grazing has contributed to cheatgrass invasion in the planning area (280). In fact, the NW CO DLUP/EIS, citing the Fish and Wildlife Service, claims that weed infestations are not considered a top threat to sage-grouse in northwest Colorado (189, Table 2-6). Grazing guidelines even recommend using livestock as a tool to inhibit or stop the spread of noxious weeds, where feasible (K-7). (In contrast, the preferred alternative would manage free-roaming horses to avoid increasing incidence of cheatgrass, 159, Table 2-4).</p> <p><b>[3]</b> When a permittee or lessee voluntarily relinquishes their grazing preference in sage-grouse habitat, managers may consider converting the associated allotment to a reserve allotment (grass bank) that will remain available for use on a temporary, nonrenewable basis for the benefit of sage-grouse. Managers may authorize temporary nonrenewal permits in reserve allotments to meet resource objectives elsewhere such as rest or deferment due to fire (159, Table 2-4). The preferred alternative would close no areas to livestock grazing (42, Table 2-2).</p>
<p><b><i>Climate Change Effects</i></b></p>	
<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 NW CO DLUP/EIS claims there is no resource program in an RMP for addressing effects of climate change to sage-grouse and its habitat (190, Table 2-6).</p> <p>The preferred alternative would not implement a number of prescriptions for emergency stabilization and rehabilitation intended to restore damaged habitat and support resiliency (183, Table 2-4). It also fails to adopt measures proposed in other alternatives that would consider potential effects of climate change in management (<i>see, e.g.</i>, 185, Table 2-4, NTT 94).</p>

<b><i>Wind Energy Development</i></b>	
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.	The preferred alternative would not prohibit wind energy development in priority habitat (149, Table 2-2, NTT 18b-18c).

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