



Wyoming Greater Sage-Grouse Draft Land Use Plan Amendment and Draft Environmental Impact Statement

Sage-Grouse Conservation Issue	Wyoming Greater Sage-Grouse Draft LUP/EIS (Preferred Alternative E)
Priority Sage-Grouse Habitat	
<p>Greater Sage-grouse are a landscape species (Connelly et al. 2011a). Migratory populations have large annual ranges that can encompass >2,700 km² (1,042 mi²/667,184 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 mi² 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>Greater sage-grouse habitat within the planning area consists of 9,929,450 acres of core (priority) habitat, 17,011,300 acres of general habitat, and 105,530 acres of connectivity habitat (3-329, Table 3-239). Some highly productive areas for sage-grouse were excluded from core habitat, often in exchange for less productive areas (anon. pers. comm.). Core habitat also only partially includes Important Bird Areas identified by Audubon for conservation of sage-grouse and other species (H-5, Map H-1).</p>
<p>Prohibit new surface disturbance in priority sage-grouse habitat. Where new disturbance cannot be avoided (e.g., due to valid existing rights), (A) minimize impacts by limiting preexisting and permitted disturbance to one instance per section of sage-grouse habitat regardless of ownership, (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. (C) Where possible, buffer active sage-grouse leks against surface disturbance or occupancy by 4 miles¹ (SGNTT 2011: 23).</p>	<p>Development associated with fluid minerals development and (some) mining activities would be limited to an average of 1 site per section per analysis area, subject to valid existing rights (2-133 – 2-134, Table 2-1, Action 126), while surface disturbance associated with all anthropogenic activities would be restricted to 5 percent of core habitat within the analysis area (2-134 - 2-135, Table 2-1, Actions 126, 127). Burned areas containing less than 5 percent sagebrush canopy cover would be considered “disturbed” until recovery was underway (2-118, Table 2-1, Action 115); some vegetation treatments could also contribute to the 5 percent threshold (2-181, Table 2-5). Surface occupancy and surface disturbing activities would be prohibited within 0.6-miles of occupied leks in core habitat (2-138, Table 2-1, Action 129).</p> <p>Rights-of-way: Sage-grouse core habitat would be managed as avoidance areas for new rights-of-way or special use authorizations (2-18, Table 2-1, Action 30). New transmission projects would be permitted in core/connectivity habitat within the 2-mile wide corridor in south-central/southwestern Wyoming and within 0.5</p>

¹ 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.

mile of existing 115kV or larger transmission lines, and not be counted against the 5 percent disturbance cap (2-21, Table 2-1, Action 32). New electric distribution lines to be buried, where feasible; where not feasible, overhead lines must be located at least 0.6 miles from occupied leks (2-21, Table 2-1, Action 32).

Unleased fluid minerals: Leasing would generally be permitted in core habitat areas, consistent with timing, distance, disturbance, and density restrictions (2-63, Table 2-1, Action 60). No new areas would be closed to leasing (2-172 -2-173, Table 2-5). Exceptions, modifications and waivers to lease stipulations for minerals development would continue to be considered on a case-by-case basis consistent with approved land management plans (2-62, Table 2-1, Action 58).

Leased fluid minerals: Development may proceed in core habitat with 0.6-mile no surface occupancy lek buffers, a density of 1 well site per an average of 640 acres, and total surface disturbance limited to 5 percent of core habitat within the analysis area (2-174, Table 2-5). Exceptions, modifications and waivers to lease stipulations for minerals development would continue to be considered on a case-by-case basis consistent with approved land management plans (2-62, Table 2-1, Action 58).

Solid leasable minerals: Coal leasing would continue in accordance with existing plans (2-80 – 2-86, Table 2-1, Actions 75-76); applications for coal leasing in core habitat would be found to be “suitable” (2-80 – 2-81, Table 2-1, Action 75), including for sub-surface mining with impacts to core habitat (2-83, Table 2-1, Action 76). Coal exploration could be allowed in core habitat, provided activities can be completed in compliance with surface occupancy, disturbance and density stipulations (2-86, Table 2-1, Action 77). Other solid non-energy mineral leasing would also be considered in core habitat, provided development can be completed in compliance with surface occupancy, disturbance and density stipulations (2-86, Table 2-1, Action 78).

Locatable mineral development: Withdrawal of areas from mineral entry “would be considered” based on risk to sage-grouse and their habitat from development impacts (2-88, Table 2-1, Action 79). Agencies may recommend non-compulsory measures to operators to minimize development impacts on sage-grouse (2-90, Table 2-1, Action 79).

	<p>Saleable minerals development: Development would be considered in core habitat, provided it can comply with surface occupancy, seasonal restrictions, and disturbance and density caps (2-91, Table 2-1, Action 80).</p> <p>Travel management: Motorized travel would be limited to existing roads, primitive roads, and trails at a minimum, until such time as travel management planning is complete and routes are either designated or closed (2-95, Table 2-1, Action 87). New primary and secondary roads would be “avoided” within 1.9 miles of occupied sage-grouse leks in core habitat; other new roads would be “avoided” within 0.6 miles of occupied leks in core habitat (2-96 – 2-97, Table 2-1, Action 88).</p>
Identify ² and protect sage-grouse winter habitat (Braun et al. 2005, <i>citing</i> Connelly et al. 2000 and others; Moynahan et al. 2007).	The plan includes a map depicting sage-grouse winter habitat (Map 3-19). Surface disturbing and/or disruptive activities would be seasonally prohibited in winter concentration areas in core habitat (2-162 – 2-163, Table 2-1, Action 134) (and potentially in winter habitat outside core habitat (2-163, Table 2-1, Action 134). As the plan notes, seasonal restrictions on disturbance are less protective than prohibiting disturbance in wintering areas (4-242).
Manage or restore sage-grouse habitat so that at least 70 percent of the land cover is sagebrush sufficient to meet sage-grouse needs ³ (SGNTT 2011: 7; Knick et al. 2013 ⁴). ⁵	Alternative B includes an objective for managing at least 70 percent of land cover in in sage-grouse habitat as sagebrush steppe sufficient to support sage-grouse (2-13); the preferred alternative does not.
Restoration Sage-Grouse Habitat	
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.	Habitat restoration projects in core habitat would be prioritized based on habitat variables that improve chances for success in areas most likely to benefit sage-grouse and/or areas that are thought to be limiting sage-grouse distribution and/or abundance (2-108 – 2-109, Table 2-1, Action 101). Habitat restoration would be conducted in accordance with existing plans (2-109 – 2-110, Table 2-1, Action 102); native seeds would be used where appropriate (2-109 – 2-110, Table 2-1, Action 102). Areas invaded by non-native grasses in/adjacent to core habitat would be prioritized for restoration (2-111, Table 2-1, Action 105). Burned areas in core habitat would also be restored (2-118, Table 2-1, Action 115).

² 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.

³ While ≥ 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.

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

⁵ *See also* Karl and Sadowski (2005): 15.

<i>Specially Designated Sage-Grouse Habitat</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), ⁶ 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. ⁷ 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. ⁸ 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 preferred alternative would not designate new sagebrush reserves to conserve sage-grouse (2-95, Actions 84, 85).
<i>Fluid Minerals Development (unleased)</i>					
	State of Wyoming	Wyoming BLM	NTT Report Recommendations	Sage-Grouse Ecology	Wyoming Greater Sage-Grouse Draft LUP/EIS (Preferred Alternative E)
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).	Future leasing would generally be permitted in core habitat areas, consistent with timing, distance, disturbance, and density restrictions (2-63, Table 2-1, Action 60). No new areas would be closed to leasing (2-172 -2-173, Table 2-5). Surface occupancy and surface disturbing activities associated with fluid minerals development would be prohibited within 0.6-miles of occupied leks in core habitat (2-138, Table 2-1, Action 129). Exceptions, modifications and waivers to lease stipulations for minerals development would continue to be considered on a case-by-case basis consistent with approved land management plans (2-62, Table 2-1, Action 58).

⁶ 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).

⁷ More than 350 species of conservation concern occur in sagebrush steppe (Wisdom et al. 2005a: 21 and App. 2). Conservation planning for a suite of sagebrush species now could avoid land use conflicts in the future.

⁸ See Sage-Grouse Recovery Alternative for criteria for designating sagebrush reserves, p. 50 (www.sagebrushsea.org/pdf/Sage-Grouse_Recovery_Alternative.pdf).

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).	Development associated with fluid minerals development and would be limited to an average of 1 site per section per analysis area, subject to valid existing rights (2-133 – 2-134, Table 2-1, Action 126). Exceptions, modifications and waivers to lease stipulations for minerals development would continue to be considered on a case-by-case basis consistent with approved land management plans (2-62, Table 2-1, Action 58).
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 or project area (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 the lek (Knick et al. 2013).	Surface disturbance associated with all anthropogenic activities would be restricted to 5 percent of core habitat within the analysis area (2-134 - 2-135, Table 2-1, Actions 126, 127). Exceptions, modifications and waivers to lease stipulations for minerals development would continue to be considered on a case-by-case basis consistent with approved land management plans (2-62, Table 2-1, Action 58).
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/or disruptive activities would be seasonally prohibited in winter concentration areas in core habitat (2-162 – 2-163, Table 2-1, Action 134) (and potentially in winter habitat outside core habitat (2-163, Table 2-1, Action 134). Exceptions, modifications and waivers to lease stipulations for minerals development would continue to be considered on a case-by-case basis consistent with approved land management plans (2-62, Table 2-1, Action 58).
Livestock Grazing					
<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.</p> <p>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.</p> <p>Management plans should:</p> <ol style="list-style-type: none"> 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 (<i>Bromus tectorum</i>) (Reisner et al. 2013). 3. Facilitate voluntary grazing permit retirement in sage-grouse priority habitat (<i>see</i> SGNIT 2011: 17). 				<p>Grazing management would be conducted in accordance with existing policies (2-34, Table 2-1, Action 44; 2-39, Table 2-1, Action 49) and resource management plans (2-36 – 2-38, Table 2-1, Action 46). The Wyoming Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management refers generally to ecological site potential (standard #1) and “plant communities appropriate to the site” (standard #3). The agencies would manage for “vegetation composition and structure that reflects [ecological site description] or other methods that reference site potential or comparable standard to achieve sage-grouse and other resource objectives” (2-101, Table 2-1, Action 93). Further, “[w]ithin sage-grouse core habitat, as appropriate, site specific sage-grouse habitat objectives and management considerations would be incorporated into all BLM and Forest Service</p>	

	<p>grazing allotments through Allotment Management Plans (AMPs), permit renewals, Forest Service Annual Operating Instructions, and/or equivalent planning processes” (2-38, Table 2-1, Action 48).</p> <p>The preferred alternative would not limit forage utilization by livestock.</p> <p>The preferred alternative does not prescribe an average minimum grass height in sage-grouse nesting and brood-rearing habitat. To the contrary, the plan indicates that grass height can average just 10 cm at time of nest site selection by hens, though the plan also states that grass should grow to at least 18 cm by early June (3-240, citing others).</p> <p>Over 20 million acres of sage-grouse habitat in Wyoming is suitable for cheatgrass incursion (3-376), and the plan acknowledges that cheatgrass degrades sage-grouse habitat (3-398, Medicine Bow National Forest). However, the preferred alternative would not require management that prevents livestock grazing from contributing to the spread of cheatgrass in sage-grouse range.</p> <p>“When livestock grazing permits and/or grazing preference are voluntarily relinquished, the relinquishment of grazing preference would be managed according to appropriate BLM and Forest Service regulations” (2-42 – 2-43, Table 2-1, Action 50). “Retirement of grazing privileges would be maintained as an option in sage-grouse core habitat areas when the current permittee is willing to retire grazing on all or part of an allotment” (2-182, Table 2-5).</p>
<p>Wind Energy Development</p>	
<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>“Wind energy development would be prohibited in sage-grouse core habitat areas...unless it can be sufficiently demonstrated that the development activity would not result in declines of sage-grouse core habitat populations” (2-30, Table 2-1, Action 36; 2-178, Table 2-5).</p>
<p>Climate Change Effects</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,</p>	<p>“There is no resource program in [a resource management plan] or [land and resource management plan] for addressing this threat to Greater Sage-Grouse and its habitat. However, BLM Standards for Public Land Health and Guidelines for Livestock Grazing Management in Wyoming include provisions for altering grazing management practices in response to drought conditions. In addition, several programs have contingency plans for management during drought conditions” (2-187, Table 2-5).</p>

Fig. 10.19). Sagebrush steppe may also shift northward in response to increased temperatures (Schlaepfer et al. 2012; Shafer et al. 2001).

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).

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