Nevada/Northeastern California Sub-Regional Greater Sage-Grouse Draft Land Use Plan Amendment/Environmental Impact Statement	
Sage-Grouse Conservation Issue	**Nevada/NE California Draft LUP/EIS (Preferred Alternative D)**
Priority Sage-Grouse Habitat	
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, *citing* 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; *see* Manier et al. 2013: 25-26). 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).	12,693,500 acres of preliminary priority habitat and 5,039,400 acres of preliminary general habitat were identified on BLM and Forest Service-administered land in the planning area (ch. 1, xii)[1] (which is 49,868,700 acres;[2] ch. 3, 5). Priority habitat in the preferred alternative does not include NDOW category 3 habitat, "habitat of moderate importance" to sage-grouse (ch. 2, 33, Table 2-3; ch. 3, 16). Boundaries of priority and general habitat areas were adjusted in the preferred alternative to reflect existing land uses, authorizations, land allocations and habitat considerations (ch. 1, xxiii; *see* ch. 1, 5; ch. 2, 7). The preferred alternative would allow for up to ten percent adjustment in priority and general habitat areas to adapt to changing conditions (ch. 2, 13; ch. 2, 100, Table 2-5, Action D-SSS-AM 9), including expanding areas based on new science and monitoring data (ch. 2, 61, Table 2-4, Goal D-SSS-AM-1). Adjustments could be made every five years (ch. 2, 100, Table 2-5, Action D-SSS-AM 9).
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 miles[3] (SGNTT 2011: 23).	**Leased, undeveloped fluid minerals:** leased oil, gas, and geothermal resources permitted, disturbance must achieve no net unmitigated loss (ch. 2, 248, Table 2-5, Action D-FFME 6); seasonal restrictions apply on exploratory drilling in sage-grouse seasonal habitats (ch. 2, 248, Table 2-5, Action D-FFME 6); RDFs attach to lease notices (ch. 2, 250, Table 2-5, Action D-FFME 10), although they do not include adequate, year-round lek buffers, a development density cap or sufficiently protective seasonal restrictions (Appendix A, Appendix G), and can otherwise be waived, modified or excepted (Appendix G). Lek buffers, disturbance and density caps, and seasonal stipulations in current land use plans are inadequate to conserve sage-grouse (ch. 3, 109-112, Table 3-49). **Nonenergy leasable minerals:** priority and general habitat areas would be closed to non-energy leasable energy exploration and development (potassium and sodium) (ch. 1, xxvii; ch. 2, 262, Table 2-5, Action D-

[1] *But cf.* ch. 2, 33, Table 2-3 and ch. 3, 19, Table 3-5, presenting different total acreages for priority and general habitat areas.

[2] This total does not appear to be accurate, since the plan also states that the BLM administers 45,360,300 acres and the Forest Service 9,721,600 acres in the planning area (ch. 3, 5) (unless the BLM total includes subsurface estate?).

[3] 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.

	NEL 1); currently leased sites and prospecting permits are outside priority and general habitat (ch. 3, 119). **Locatable minerals:** development allowed in priority habitat[4] in accordance with best management practices and applicable mitigation (ch. 2, 254, Table 2-5, Action D-LOC 1), although BMPs are unenforceable on locatable mineral development (ch. 1, xxii; ch. 3, 119). Mitigation includes minimizing habitat loss within the affected priority habitat area or enhance priority habitat off-site *within the same WAFWA management zone*). **Salable minerals:** no new salable mineral sites would be permitted in priority and general sage-grouse habitat (ch. 2, 260, Table 2-5, Action D-SAL 1). Materials could be mined at existing sites in priority and general habitat; development stipulations apply and mitigation would be required to compensate for any habitat loss (ch. 2, 261, Table 2-5, Action D-SAL 3). **Renewable energy:** priority and general habitat designated as exclusion areas for utility-scale wind energy facilities (ch. 2, 237, Table 2-5, Action D-LR-WED 1; ch. 2, 344, Table 2-8) and solar energy facilities (ch. 2, 239, Table 2-5, Action D-LR-IS 1). **Rights-of-way:** priority habitat designated as "avoidance" areas for new rights-of-way (ch. 2, 220, Table 2-5, Action D-LR-LUA 1[5]). New development must comply with RDFs. New utility corridors would be prohibited in priority and general habitat (ch. 2, 231, Table 2-5, Action D-LR-LUA 18). **Travel management:** travel limited to designated routes in priority and general habitat in accordance with or until new travel management plans are completed (ch. 2, 215, Table 2-5, Action D-CTTM 1).
Identify[6] and protect sage-grouse winter habitat (Braun et al. 2005, *citing* Connelly et al. 2000 and others; Moynahan et al. 2007).	The plan acknowledges the importance of winter habitat to sage-grouse (ch. 3, 16; ch. 8, 99). Priority habitat areas include winter concentration areas (ch. 1, 4; ch. 8, 91), but they are not specifically identified in the plan. Winter habitat in NDOW category 3 habitat are not included in priority habitat areas (ch. 3, 16). Vegetation treatments would seek to enhance and protect winter range (ch. 2, 132, Table 2-5, Action D-VEG 22). There are some seasonal limitations on development in winter habitat in existing plans (ch. 3,

[4] The preferred alternative would propose limited areas for Secretarial withdrawal (??) (Figure 2-55, "Locatable Minerals").
[5] The same management prescriptions are repeated multiple times in Table 2-5. For example, the prescriptions for rights of way are repeated at ch. 2, 273, Table 2-5, Action D-LR-LUA 1.
[6] 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.

	109, Table 3.-49). Stipulations for leasable minerals only require a seasonal limitation on development in winter habitat that could be waived, modified, or granted an exception (G-3). Required design features, *if applied,* would require new power lines to be located at least 3 miles from winter habitat (A-19).
Manage or restore sage-grouse habitat so that at least 70 percent of the land cover is sagebrush sufficient to meet sage-grouse needs[7] (SGNTT 2011: 7; Knick et al. 2013[8]).[9]	The preferred alternative would not require management to maintain and restore sage-grouse habitat so that 70 percent of land cover in sage-grouse habitat is sagebrush. In fact, the sub-regional EIS contends that maintaining or increasing sagebrush cover to at least 70 percent of the planning area "may cause an increase in fire severity and size due to an increase in fuel loading over time" (ch. 2, 337, Table 2-8; ch. 4, 128) (which appears to confuse sagebrush canopy cover as a percentage of sagebrush steppe with the percentage of sagebrush steppe on the landscape).
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.	The preferred alternative includes objectives for rehabilitating and restoring sagebrush steppe (ch. 2, 70, Table 2.4, Obj D-VEG 3 – Obj D-VEG 4). It also has a goal of no unmitigated habitat loss (ch. 1, xxiii; ch. 2, 99, Table 2-5, Action D-SSS-AM 7); mitigation areas would be identified within general habitat where restoration would have reasonable potential to achieve habitat objectives (ch. 2, 93, Table 2-5, Action D-SSS-AM 3; ch. 2, 120, Table 2-5, Action D-SSS-OPM 5). A Conservation Credit System would be established to direct and manage mitigation activities (ch. 2, 100, Table 2-5, Action D-SSS-AM 8). The preferred alternative would use agency maps to prioritize habitat restoration projects in priority habitat to improve and connect habitat areas based on objectives in Table 2-6 (ch. 2, 122, Table 2-5, Action D-VEG 2). Habitat restoration goals are identified (ch. 2, 122-123, Table 2-5, Action D-VEG 2). Areas would be prioritized that have not crossed an ecological threshold (ch. 2, 123, Table 2-5, Action D-VEG 2).

[7] 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.
[8] Seventy-nine percent of the area within 5 km of active sage-grouse leks was in sagebrush cover.
[9] *See also* Karl and Sadowski (2005): 15.

Specially Designated Sage-Grouse Habitat	
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),[10] 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.[11] 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.[12] 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 plan analyzed 12,249,700 acres (Alt. C) for designation as ACECs and Outstanding Natural Areas to conserve sage-grouse, but the preferred alternative proposes to designate none of those areas (ch. 2, 40, Table 2-3). Alternative F would designate 1,473,000 acres as "sagebrush reserves" (ACECs) (ch. 2, 40, Table 2-3). Twenty-three existing ACECs (out of a total of 70) are located within sage-grouse priority or general habitat in the planning area; however, only one—in the Surprise Field Office—is designated specifically for conserving sage-grouse (ch. 2, 31). Current wilderness study areas cover 650,080 acres of priority habitat and 170,220 acres of general habitat (ch. 2, 32).

Fluid Minerals Development **(unleased)**			
	NTT Report Recommendations	**Sage-Grouse Ecology**	**Nevada/NE California Draft LUP/EIS (Preferred Alternative D)**
Lek Buffers	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 a no surface occupancy stipulation; no waivers, exceptions or modifications (ch. 2, 252, Table 2-5, Action D-FM 1). Apply same stipulation upon expiration or termination of existing leases.
Density	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).	N/A
Disturbance	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).	N/A

[10] 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).

[11] More than 350 species of conservation concern occur in sagebrush steppe (Wisdom et al. 2005a: 21 and App. 2).

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

Winter Habitat	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).	N/A
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 ≥ 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).		"[A]ll activities and uses within GRSG habitats will follow existing land health standards" (ch. 1, xix; ch. 1, 20) (except that the Forest Service also requires some grazing standards to support sage-grouse management goals in its California land use plans in sage-grouse range, ch. 2, 28). The preferred alternative would "manage for vegetation composition and structure consistent with ecological site potential and to achieve [sage-grouse] seasonal habitat objectives" as presented in Table 2-6 (ch. 2, 66, Table 2-4, Obj D-VEG 1; ch. 2, 80, Table 2.4, Obj D-LG 1), although Table 2-6 is missing a minimum standard for grass height (ch. 2, 323-324, Table 2-6) (by comparison, Table 3-1, "Characteristics of Sagebrush Rangeland Needed for Productive GRSG Habitat" includes a minimum height for the grass/forb component in nesting habitat; ch. 3, 11, Table 3-1). Objectives for managing lotic and lentic riparian areas to maintain sage-grouse habitat characteristics also refer to standards in Table 2-6 (ch. 2, 71, Table 2.4, Obj D-Veg 5 – Obj D-VEG 6; ch. 2, 80, Table 2.4, Obj D-LG 2), as well as proper functioning condition (ch. 2, 200, Table 2-5, Action D-LG 10). Where grazing is *not* meeting habitat objectives, the preferred alternative would defer grazing or provide for periods of rest; limit grazing to allow for plant growth sufficient to meet objectives; employ herd management techniques to seasonally minimize grazing impacts (ch. 2, 195, Table 2-5, Action D-LG 2). Grazing would be managed so that hot season use does not occur on the same pasture on consecutive years (ch. 2, 195, Table 2-5, Action D-LG 13). Annual grazing management would seasonally avoid use near active leks (ch. 2, 210, Table 2-5, Action D-LG 29 – Action D-LG 30). The preferred alternative does not prescribe maximum utilization for livestock grazing on allotments that meet or are making progress toward rangeland health standards, and the guidelines for use on	

	allotments not meeting/making progress toward sage-grouse habitat objectives would allow between 35-45 percent of herbaceous species in sagebrush steppe habitat (ch. 324, Table 2.7). The agencies committed to developing objectives for managing invasive species within sage-grouse habitat (ch. 1, xix), and the preferred alternative would seek to "limit the expansion or dominance of invasive species…including cheatgrass and medusa head" (ch. 2, 121, Table 2-5, Action D-VEG 1) in both big sagebrush (ch. 2, 135, Table 2-5, Action D-VEG 29) and low sagebrush communities (ch. 2, 136, Table 2-5, Action D-VEG 31). The plan also acknowledges that "grazing that fails to meet standards" contributes to cheatgrass incursion, cites Reisner et al. (2013) (ch. 3, 44; ch. 4, 54) (if also mischaracterizes the research) and promises "active treatments to remove invasive annual grass and maintain sagebrush/perennial grass communities" (ch. 2, 17). However, this could include intensely managed, early season livestock grazing to control cheatgrass; livestock could utilize up to 35 percent of desirable species in these treatments (ch. 2, 141, Table 2-5, Action D-VEG-ISCE 2). Agencies will coordinate and solicit input from National Cattlemen's Association and National Woolgrowers Association on grazing management (ch. 2, 17). Unless current actual grazing use levels are based specifically on sage-grouse habitat management, permitted active use could increase under current grazing permits (ch. 2, 24). Acreage open to livestock grazing in priority habitat areas would increase under the preferred alternative compared to current management; acreage available in general habitat areas would decrease by approximately 200,000 acres (ch. 2, 34, Table 2.3). The preferred alternative would allow for voluntary retirement of grazing privileges in priority and general habitat "where removal of livestock grazing would enhance the ability to achieve [sage-grouse] habitat objectives" (see Table 2-6) (ch. 2, 207, Table 2-5, Action D-LG 23).

Climate Change Effects	
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, *citing* 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 (*see* 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). 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).	Climate change is identified as a management issue (ch. 1, xvi; ch. 1, 8; ch. 2, 11, Table 2.1), although the BLM contends "there is no BLM resource planning program for addressing this threat to [sage-grouse] and its habitat" (ch. 2, 11, Table 2.1). Proposed climate change management is incorporated in other programs (ch. 2, 11, Table 2.1). In comparison, the Forest Service identifies objectives for managing resources affected by climate change (ch. 2, 11, Table 2.1). The preferred alternative would "establish and maintain a resilient sagebrush vegetative community" (ch. 2, Table 2.4, 64, Goal D-VEG 1; ch. 2, Table 2.4, 71, Goal D-VEG-CC 1) and includes general objectives to focus treatments where restoration would have the greatest level of success and manage stressors to maintain existing habitat (ch. 2, Table 2.4, 72, Obj D-VEG-CC 1 - Obj D-VEG-CC 2). "As climate change data become available through [rapid ecological assessments] or other ecological studies, identify areas of unfragmented [sage-grouse] habitat and key habitat linkages that provide the life-cycle and genetic transfer needs for [sage-grouse]. Manage the identified areas as [priority habitat]" (ch. 2, 101, Table 2-5, Action D-SSS-CC 1; ch. 2, 194, Table 2-5, Action D-FFM-CC 2). The preferred alternative includes general prescriptions for identifying priority treatment sites and managing cheatgrass, pinyon-juniper encroachment, and other factors to increase habitat resiliency in sagebrush steppe (ch. 2, 146-149, Table 2-5, Action D-VEG-CC 1 - Action D-VEG-CC 6), including a prescription to consider potential climate change effects in selecting native seed for restoring burned sagebrush steppe (ch. 2, 181, Table 2-5, Action D-FFM-HFM 23).
Wind Energy Development	
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.	"Designate [priority habitat areas] and [general habitat] as ROW exclusion for utility-scale commercial wind energy facilities (facilities that generate large amounts of electricity that is delivered to many users through transmission and distribution systems)" (ch. 2, 237, Table 2-5, Action D-LR-WED 1; ch. 2, 344, Table 2-8).

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