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DEFENDERS OF WILDLIFE
HIGH COUNTRY CONSERVATION ADVOCATES
ROCKY MOUNTAIN WILD
SHEEP MOUNTAIN ALLIANCE
SAN JUAN CITIZENS ALLIANCE

Leah Waldner, Sage-Grouse Coordinator
Bureau of Land Management
Grand Junction Field Office
2815 H Rd
Grand Junction, CO 81506

August 22, 2022

Comments submitted via eplanning website

Re: Notice of Intent to Amend Multiple Resource Management Plans Regarding Gunnison Sage-Grouse (Centrocercus minimus) Conservation and Prepare an Associated Environmental Impact Statement, Colorado and Utah

Dear Ms. Waldner:

On behalf of the undersigned organizations that represent millions of members and supporters including residents of western Colorado and southeast Utah, please accept these comments in response to the Federal Register notice announcing the launch of the development of the Gunnison Sage-Grouse (GuSG) conservation plan and resource management plan amendments. See 87 Fed. Reg. 40262 (Wednesday, July 6, 2022).

We appreciate that BLM is developing a rangewide conservation plan for the federally-listed GuSG and associated resource management plan amendments. There is widespread concern for this unique bird that, despite ongoing conservation efforts, continues to decline. We are hopeful that this planning effort will increase the pace and scale of conservation of sagebrush habitats in western Colorado and eastern Utah and ultimately reverse the declining population trend.

A major cause of decline is the loss and degradation of native sagebrush habitats. Recovering the GuSG will require strongly protecting the remaining habitat coupled with a concerted effort to restore lost habitat especially that adjacent to and connecting existing occupied habitat. As climate change continues to warm and dry the region, we will also need to protect higher elevation habitats that in the future may transform to sagebrush dominated systems.

Recognizing this imperative, we are nominating a network of Areas of Critical Environmental Concern (ACEC) for consideration in this planning process.[1] This network, if adopted with the proposed management prescriptions, would protect the last remaining habitat for this imperiled bird. The adoption of the ACEC network is absolutely necessary but not sufficient. Therefore, in addition to the

[1] We are also incorporating by reference the nominations Dry Creek and the Northdale Areas submitted in 2016 as part of the Tres Rios ACEC plan amendment process, available at eplanning as DOI-BLM-CO-S010-2016-0045-RMP-EA.

ACEC nomination we are offering the following management recommendations for your consideration in the EIS alternatives and impact analysis.

Decision area. The decision area for the planning process should be all lands and federal minerals within the affected Field Offices and not limited to GuSG habitat. This will allow BLM to consider management requirements and strategies for managing activities outside of habitat boundaries that affect habitat condition, bird populations and connectivity between populations. This can include lands within four-mile buffers of leks[2], and areas important for connectivity. It will ensure that BLM can address the potential for indirect and cumulative effects of development in non-habitat (e.g., development of and oil and gas field outside of habitat/lek buffers that results in increase traffic on existing routes through GuSG habitat).

Objectives. It is important to set clear, measurable and ambitious goals and objectives for GuSG habitat conservation. We ask that BLM consider the following goals and objectives:

- GuSG habitat and movement corridors are managed to bring vegetation communities to their ecological site potential and increase the abundance of GuSG.
- Within 5-10 years, at least 200,000 acres of degraded occupied and/or unoccupied habitat (e.g., areas of historic sagebrush with potential for restoration and areas with sparse sagebrush/lack of hiding cover, high surface disturbance or road density, invasive annual grasses) have been improved through changes in management or restoration activities to meet habitat objectives.
- Within 5 years, there will be at least a 10% net reduction in infrastructure (roads, powerlines, fences) in occupied and unoccupied GuSG habitat.
- Within 3 years, GuSG productivity, survival, or use of seasonal habitats will be increased above the level they are at currently.
- Within 5 years, GuSG populations will be above current levels.

Habitat buffers require protection. In addition to protecting lands within four miles of leks, BLM should establish protective management stipulations on lands located within one mile of any type of GuSG habitat (whether it be on public or private land) to assure that activities located proximal to habitat do not degrade habitat or impact birds. Research on greater sage-grouse suggests that birds may avoid otherwise suitable winter habitat within 1.9 km (1.2 miles) of infrastructure (Carpenter et. al. 2010). Dzialak et. al (2011) found that annual survival of greater sage-grouse chicks reared near gas field infrastructure was lower than those reared away from infrastructure. This research supports the idea that a buffer is needed to protect seasonal habitats from development, including winter and brood rearing habitat.

Connectivity. BLM should include measures aimed at maintaining and restoring connectivity between GuSG populations and subpopulations. This should include avoiding placing major development and infrastructure in areas that will reduce or preclude connectivity between subpopulations and developing a strategy to maintain and restore connectivity between populations in consultation with the U.S. Fish and Wildlife Service and Colorado Parks and Wildlife. This strategy should include acquisitions of key parcels.

[2] This includes all leks (inactive, historic, current, unknown) and those located on public and private lands.

Framework for Implementation. The updated rangewide conservation plan and RMP amendments should provide a framework for implementation that sets clear objectives and priorities for conservation and restoration actions for each population, identifies funding strategies, addresses research needs, and sets clear timelines for implementation. In the seven years since BLM published the previous draft Gunnison Sage-Grouse Rangewide Conservation Plan, BLM has made very little progress towards implementing the regulatory measures and conservation actions needed to stem the ongoing decline of GuSG. It is crucial for BLM to have a plan that facilitates efficient and effective implementation of the conservation measures necessary to increase GuSG populations.

Regional leadership and partnerships. Numerous plans and strategies have been developed over the past few decades to conserve and recover the GuSG. The most recent of these is the US Fish and Wildlife Service's Recovery Plan and Recovery Implementation Strategy.[3] By our observation, there are many stakeholders that support GuSG conservation and have resources to offer, but an absence of consistent leadership around the collaborative implementation of the conservation strategies. We urge BLM to build into its RMPs an increased leadership role for coordinating implementation of the recovery implementation strategy for each population. BLM for FY22 received a 42% increase in its appropriated funding for the threatened and endangered species program; BLM could use these additional appropriated funds to support this leadership and partnership function.

Mineral withdrawal. BLM should submit an application to the Secretary of the Interior to withdraw, for the maximum period of time allowed by law,[4] all lands within GuSG habitat from all forms of mineral location and development for the conservation and restoration of GuSG and other native wildlife species. The withdrawal should be both:

1. *from* certain uses that are harmful to the conservation of GuSG (e.g. mineral development of any kind (location [hardrock], leasing [fluid, coal, and other minerals, including geothermal), or sale (common minerals such as sand and gravel); and
2. *for* the conservation of GuSG and other native wildlife and plants and the sagebrush-steppe and adjacent ecosystems on which they depend.

Please refer to Section IX of the attached ACEC nomination for an explanation of the science supporting the need for a mineral withdrawal.

Consistency with Greater Sage-Grouse Conservation

Given that GuSG are federally protected as threatened and declining, BLM must adopt conservation measures for GuSG that are more comprehensive and protective than those implemented for greater sage-grouse (including the Bi-State population of greater sage-grouse).

Thank you very much for considering these comments. We look forward to working with you on this very important planning effort.

With regards,

[3] Available at https://ecos.fws.gov/ecp/species/6040.

[4] 43 USC 1417

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Founded in 1947, Defenders of Wildlife is a national non-profit conservation organization focused on conserving and restoring native species and the habitat upon which they depend. Based in Washington, DC, the organization also maintains six regional field offices, including those covering the Rockies and Plains, Southwest, California, and Northwest regions. Defenders is deeply involved in public lands management and wildlife conservation, including the protection and recovery of sage-grouse and the Sagebrush Sea. We submit these comments on behalf of more than 1.8 million members.

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Sheep Mountain Alliance ("SMA") is a grassroots organization dedicated to conservation of the natural and human environment of southwest Colorado. SMA provides protection to and education about regional ecosystems, wildlife habitats, and watersheds, serving nearly 20,000 residents and visitors to the San Juan Mountains and the San Miguel and central Dolores River watersheds. SMA works directly to improve policy and management across the public lands and natural resources that these landscapes encompass.

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San Juan Citizens Alliance (SJCA) is a non-profit organization headquartered in Durango, Colorado and advocates for clean water, pure air, and healthy lands in the San Juan Basin. San Juan Citizens Alliance has more than 1,000 members largely in the Four Corners area. SJCA is actively involved in monitoring and scrutinizing management of public lands and wildlife, overseeing government decision-making and compliance with environmental laws, advocating for better stewardship of natural systems, addressing root causes of climate change, and working for improvements to community health.

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Rocky Mountain Wild is a non-profit organization that works to protect, connect and restore wildlife and wild lands in the Southern Rocky Mountain Region. We envision a biologically healthy future for our region – one that includes a diversity of species and ecosystems, thriving populations of wildlife, and sustainable coexistence between people and nature. Using research and advanced geospatial analysis, community science, collaboration, and legal action, we offer solutions for conserving our most at-risk animal and plant species and landscapes. We have more than 7,000 members and supporters who care deeply about the management of public lands and the future of Gunnison sage-grouse.

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The mission of High Country Conservation Advocates (HCCA) is to protect the health and natural beauty of the land, rivers, and wildlife in and around Gunnison County now and for future generations. HCCA was founded in 1977 to challenge a proposed molybdenum mine on Mt. Emmons, known by locals as

Red Lady, just west of Crested Butte. Since our founding we have become Gunnison County's environmental leader, emphasizing grassroots advocacy, applying sound science, and upholding applicable environmental laws and regulations to protect public lands, waters, and wildlife in an area covering more than 3,500 square miles. HCCA has about 900 members who live, recreate, and enjoy the rural and wild character of Gunnison County and its public lands.

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The Center for Biological Diversity is a national, nonprofit conservation organization with more than 1.7 million members and online activists dedicated to the protection of endangered species and wild places.

NOMINATION FOR AREAS OF CRITICAL ENVIRONMENTAL CONCERN TO BENEFIT THE GUNNISON SAGE-GROUSE AND SAGEBRUSH HABITAT

I. Introduction

Historically, the Gunnison Sage Grouse (GuSG) lived in southwestern Colorado, northwestern New Mexico, northeastern Arizona, and southeastern Utah (Schroeder et al. 2004, p. 370). Today, it occupies less than ten percent of its historic range (primarily in Colorado) with a total estimated population of about 2,785 birds in eight populations.[1] See Figure 1. A primary reason for the species' decline is habitat loss and degradation, which has led to small and disconnected populations.[2] The Gunnison Basin population contains over 85% of the remaining birds. The remaining populations (referred to as the satellite populations) occupy small and disconnected patches of habitat. At least two of the satellite population areas may no longer be occupied.[3]

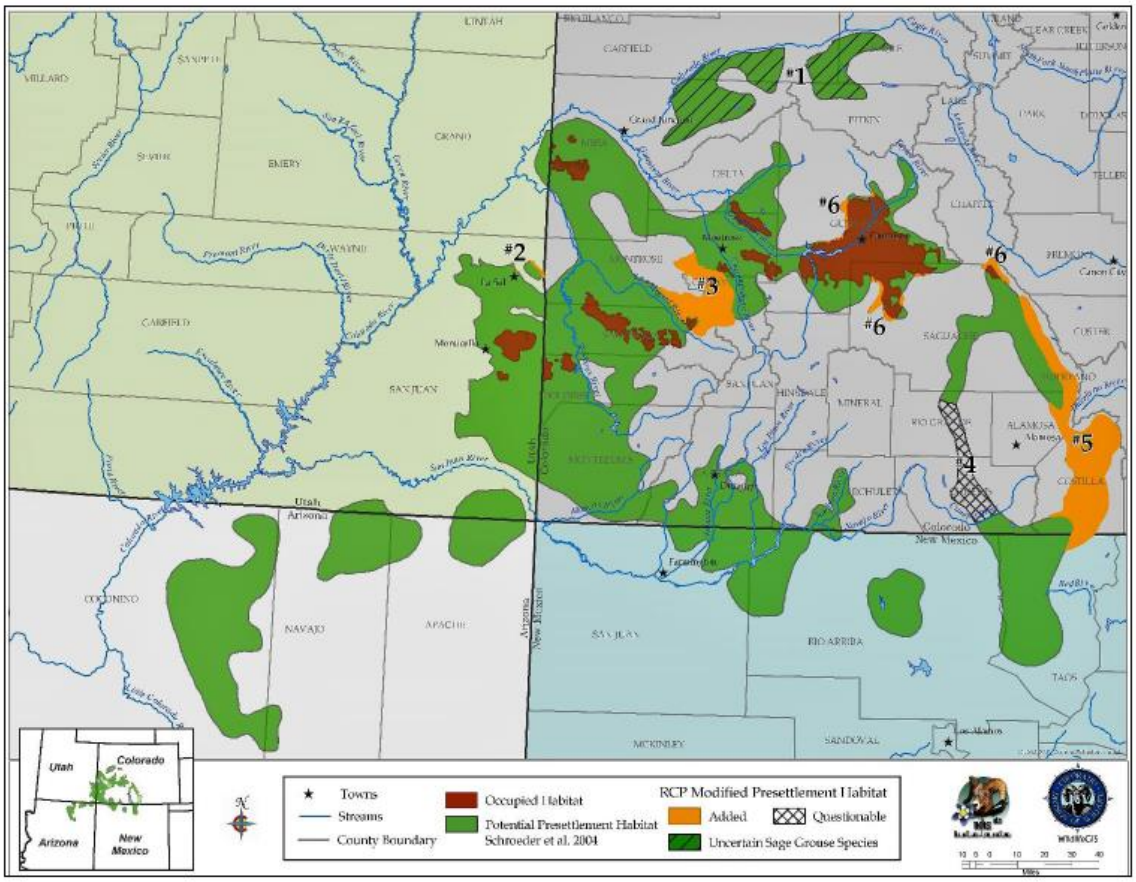
Conserving and recovering GuSG requires major changes in how the Bureau of Land Management (BLM) manages the approximately forty-two percent of remaining habitat (occupied and unoccupied) under its control.[4] To address this need, we nominate a network of Areas of Critical Environmental Concern (ACEC) in response to BLM's Notice of Intent to Amend Multiple Resource Management Plans Regarding Gunnison Sage-grouse. We identified these potential ACECs based on the criteria set out in applicable laws, regulations, and BLM Manual 1613. The proposed ACECs collectively will protect key habitat for the GuSG and contribute to its conservation and recovery. The nominated units capture occupied and suitable habitat and lands within four miles of GuSG leks on public land.

GuSG has been a species of conservation concern for over two decades. In 2005 BLM in collaboration with other agencies developed a Rangewide Conservation Plan (BLM 2005) and in 2014 the GuSG was listed as threatened under the Endangered Species Act (ESA). The U.S. Fish and Wildlife Service (Service) produced a recovery plan for the species in 2020. Despite these efforts, the bird continues to decline. See Figure 2.

The Species Status Assessment (USFWS 2019) and the recovery plan (USFWS 2020a) concluded that to avoid extinction and ultimately recover, the GuSG must have multiple highly resilient populations distributed across the range with ecological and genetic diversity that can withstand catastrophes and adapt to environmental change (USFWS 2019). Conserving and restoring habitat and connectivity within and between satellite populations and assuring that the Gunnison Basin population remains stable is necessary to meet these goals (USFWS 2019). Yet some of the satellite populations are so small and isolated that they are at significant risk of extirpation even in the absence of further threats (USFWS 2019).

[1] High male count data was provided by Colorado Parks and Wildlife in August 2022. We calculated the total population using the formula provided in the BLM (2005): ((HMC/.52) x 1.6) + (HMC/.52).
[2] USFWS (2019); 79 Fed. Reg. 69192 (November 20, 2014)
[3] Source of data is Colorado Parks and Wildlife (August 2022).
[4] The state of Colorado, the US Forest Service and private entities manage the majority of the remaining habitat.

Figure 1. Gunnison Sage Grouse likely historic (green, orange, hatched) and current (brown) occupied habitat. Excerpted from US Fish and Wildlife Service (2019), page 16.



Current management of the GuSG range is not curbing the trend toward extinction. BLM controls a meaningful fraction of GuSG habitat and can influence management of proximal and adjacent habitat through partnerships and purchases. Further, Section 7 of the Endangered Species Act (ESA) requires BLM to conserve and recover listed species, including managing its surface and subsurface estates to facilitate recovery of GuSG populations.

The 2020 GuSG recovery plan set a recovery vision of maintaining at least four resilient populations and improved habitat in three populations.[5] Key to achieving this vision will be ameliorating threats, commitments to increasing quality and quantity of habitat, and stronger regulatory mechanisms.[6] Further, the recovery plan establishes a Priority 1 Action of conserving existing habitats, especially occupied and suitable habitat within four miles of all leks (active, inactive, and historical) in all populations.[7]

[5] Fish and Wildlife Service Recovery Plan for the Gunnison Sage Grouse, 2019, page 8.
[6] *Id.* at 13-14.
[7] *Id.* at 21. Priority 1 Actions, #3.

II. BLM Requirements for ACEC Designation

The Federal Land Policy and Management Act (FLPMA) obligates BLM to "give priority to the designation and protection of [ACECs]."[8] ACEC inventory and evaluation criteria are set forth in regulation and agency guidance (BLM Manual 1613). A potential ACEC must possess relevance (significant value(s) in historic, cultural or scenic values, fish and wildlife resource, other natural systems/processes, or natural hazards) and importance (special significance and distinctiveness by being more than locally significant or especially rare, fragile or vulnerable). BLM Manual 1613 states that for an area to be considered as an ACEC, it must meet at least one criterion for both relevance and importance.

In addition, the potential ACEC must require "special management attention" to protect the relevant and important values where current management is not sufficient to protect these values or where the needed management action is considered unusual or unique. All ACECs meeting at least one relevance criterion and at least one importance criterion must be considered as potential ACECs under at least one alternative in the upcoming environmental impact statement (EIS) to further amend the resource management plans (RMPs) for GuSG.

The BLM Manual also sets out more specific requirements for evaluating ACECs during the land use planning process. The BLM Manual requires that each area recommended for consideration as an ACEC—including when externally nominated—be considered by BLM, through collection of data on relevance and importance and evaluation by an interdisciplinary team. If proposed ACECs are not designated, the analysis supporting the negative conclusion "must be incorporated into the plan and associated environmental document." BLM Manual 1613.21.

III. GuSG Status and Trends that Support Designating an ACEC and Implementing Special Management

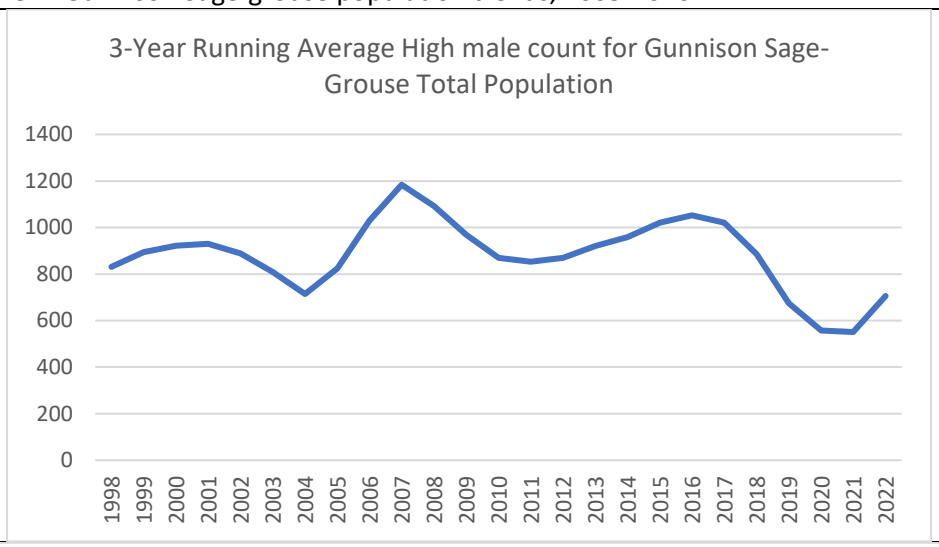
a. Despite a slight uptick in 2022, overall GuSG population trends are negative

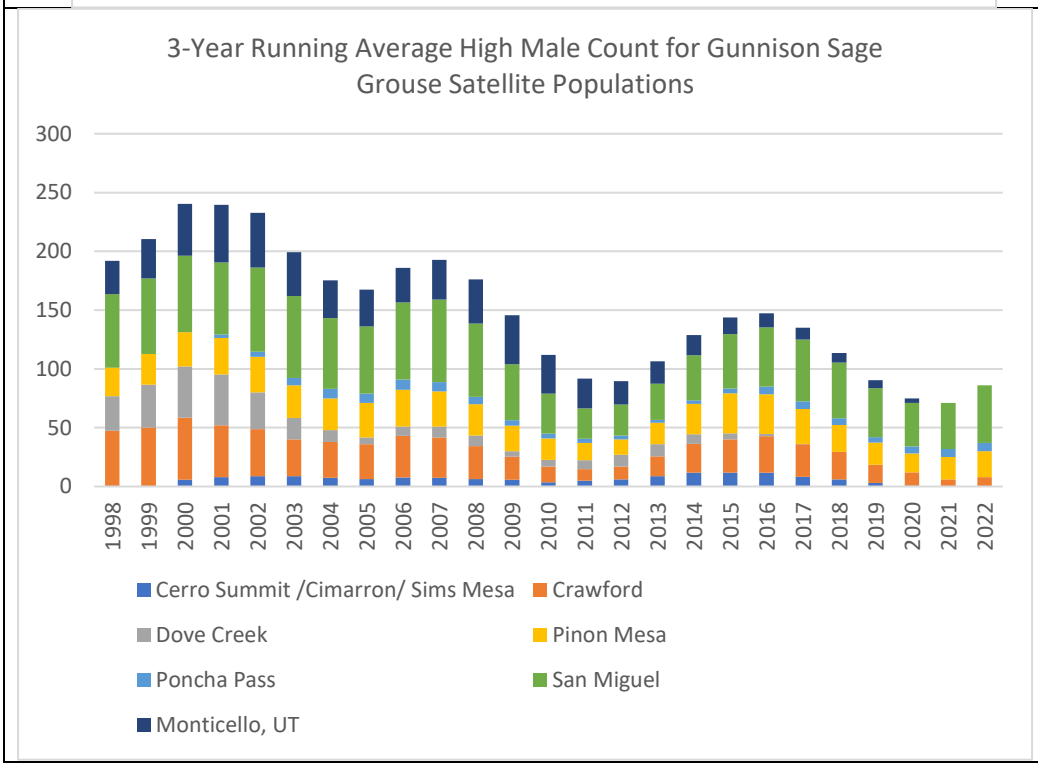
GuSG populations in the satellite and core populations are in decline and considerably below the recovery targets established in the 2020 recovery plan. See Figure 2.[9]

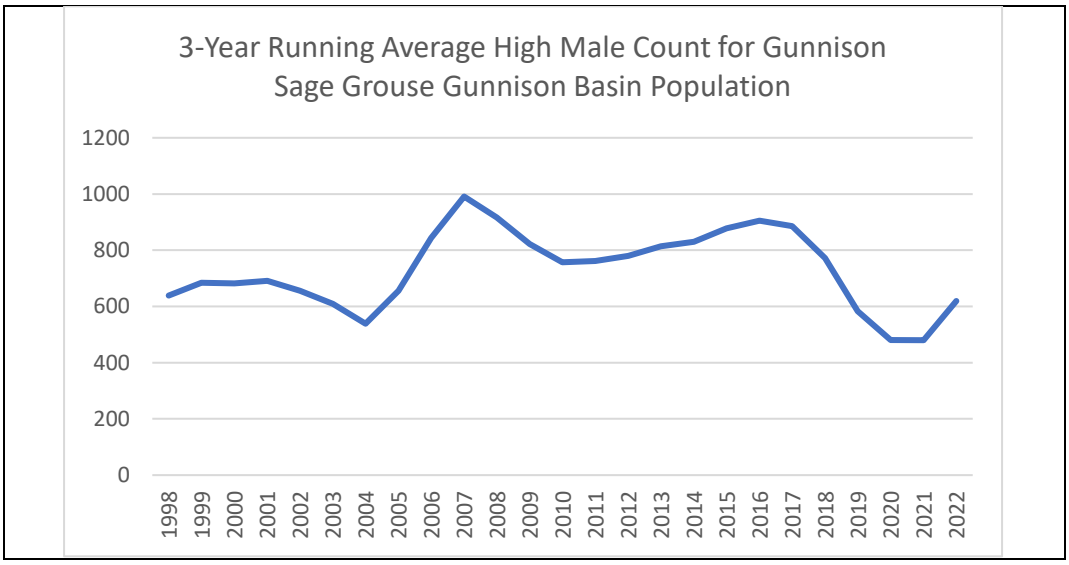
[8] 43 U.S.C. 1712(c)(3).

[9] Source of data is Colorado Parks and Wildlife (August 2022).

Figure 2. Gunnison Sage-grouse population trends, 2005-2020



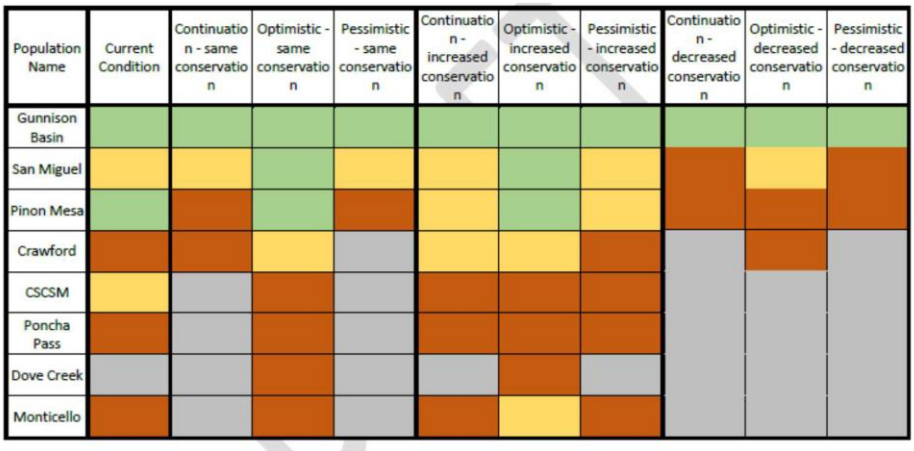




b. Scenarios for GuSG Outcomes

In 2019, the U.S. Fish and Wildlife Service identified nine possible future scenarios for the GuSG using three condition scenarios based on climate and residential growth (continuation of current conditions, optimistic, pessimistic) and three conservation scenarios (current level of conservation, less conservation, more conservation). See Figure 3. The 2050 scenarios paint a dismal picture for the GuSG. The best two scenarios – optimistic conditions with the current level of conservation and optimistic conditions with increased conservation – show the Gunnison Basin, San Miguel, and Pinon Mesa populations as healthy and the remaining five populations as a combination of critical, unhealthy, and moderate. No scenario – not even the optimistic conditions and increased conservation – predicts more than two satellite populations with high health. Seven of the nine scenarios result in some satellite populations in critical condition and five scenarios have at least four populations in critical condition. The only 2050 scenario that would have a chance of achieving the recovery criteria for delisting (that is, four resilient populations) is the Optimistic, Increased Conservation scenario, highlighting the need for improved management.

Figure 3. Summary of future population conditions in 2050 as presented in the SSA, page 80. Green represents healthy, yellow represents moderate, red represents low, and grey represents critical.



IV. Proposed ACECs

All units depicted in Figure 4 meet the criteria for designation as ACECs. The shapefile and metadata used to produce these maps are available at https://drive.google.com/drive/folders/1n3V9hjJFv3wOMQgxoOmovGUE1-Pxnv74?usp=sharing.

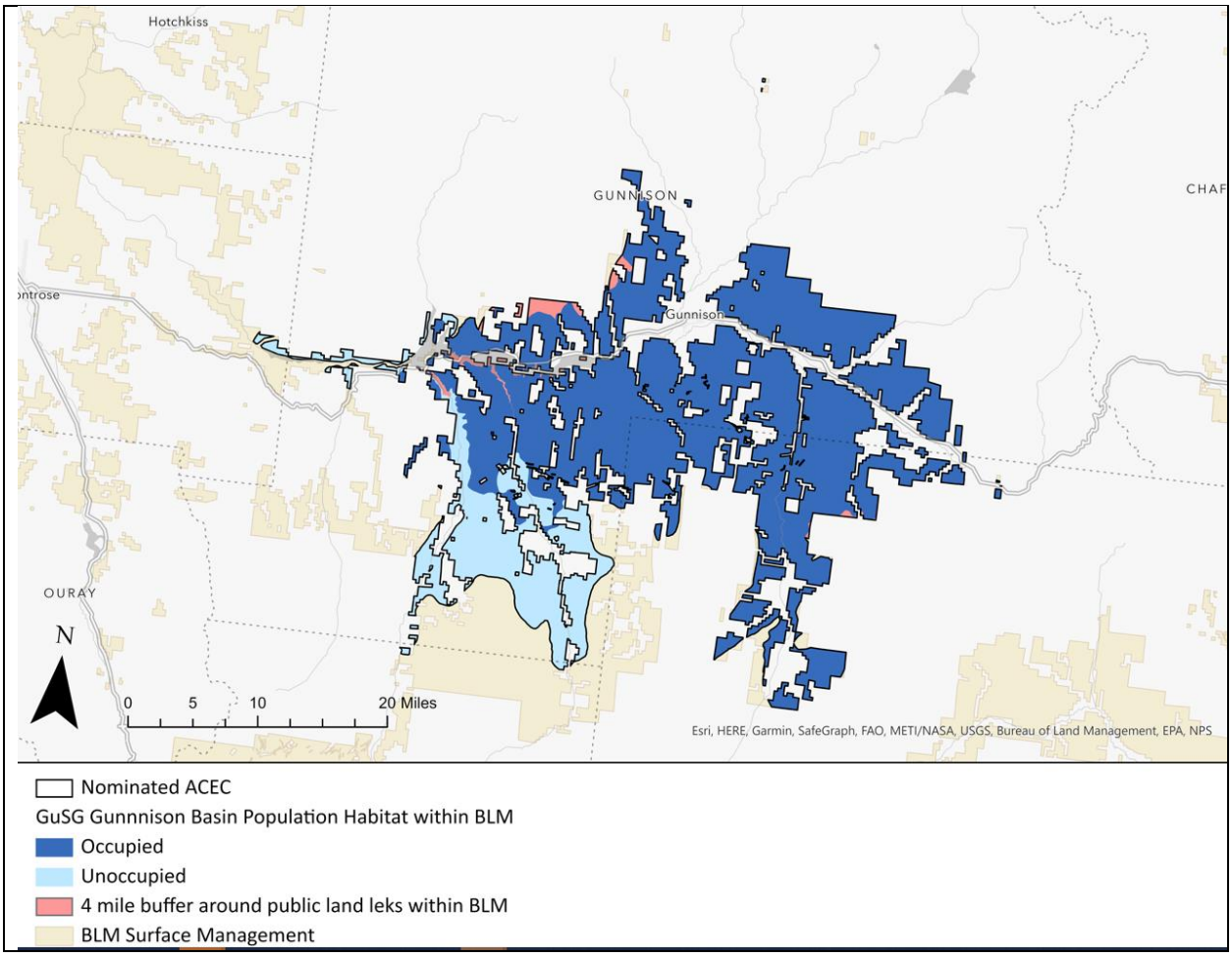
a. Gunnison Basin Core Population

For the core population in the Gunnison Basin, we nominate all occupied and unoccupied habitat mapped by Colorado Parks and Wildlife (CPW) on BLM lands, and all BLM land within four miles of GuSG leks for ACEC designation. We generated the accompanying map and shapefile of the proposed ACECs by 1) delineating all unoccupied and occupied habitat mapped by CPW, 2) buffering public lands lek locations by four miles,[10] 3) aggregating 1 and 2, and 4) cutting to BLM lands. We used all leks – active, inactive, historic, and unknown status – in support of the premise that recovery of the GuSG will require the birds to start re-using historic and inactive leks. We were unable to include buffers around leks located on private land because CPW could not share these lek locations. However, we ask BLM to modify the proposed boundary to include BLM surface lands within four miles of leks located on private lands and consider these added acres as part of our nomination even though it is not reflected in the map and GIS data.

b. Satellite Populations

For the satellite populations outside of the Gunnison Basin, we nominate all occupied and unoccupied habitat as mapped by CPW on BLM lands, all BLM lands within a one-mile buffer of occupied habitat on BLM lands, and all BLM lands within four miles of GuSG leks. We generated the accompanying map and shapefile of the proposed satellite ACECs by 1) delineating all unoccupied and occupied habitat on BLM surface estate, 2) buffering occupied habitat by one mile, 3) buffering all leks located on public land by four miles, 4) aggregating 1-3, and 5) limiting the aggregate of 1 through 3 to BLM surface estate. The rationale for the one-mile occupied habitat buffer is to protect GuSG habitat from external surface disturbances (e.g., transmission lines, energy development). The rationale for the four-mile lek buffer is the same as that applied in the Gunnison Basin and is based on the 2005 Rangewide Conservation Plan (BLM 2005) and Ouren et al. 2019. Because some non-federal lands in the satellite populations have protections (e.g., they are state wildlife refuges or under conservation easement), protecting even small BLM parcels can meaningfully increase protected patches. We were unable to include buffers around leks located on private land because CPW could not share these lek locations. However, we ask BLM to modify the boundary to include BLM surface lands within four miles of leks located on private lands and consider these added acres as part of our nomination even though it is not reflected in the map and GIS data.

[10] The four-mile buffer is supported by the approach in the Rangewide Conservation Plan (BLM 2005) and Ouren et al. (2014),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Nominated ACEC
GuSG Gunnnison Basin Population Habitat within BLM
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4 mile buffer around public land leks within BLM
BLM Surface Management

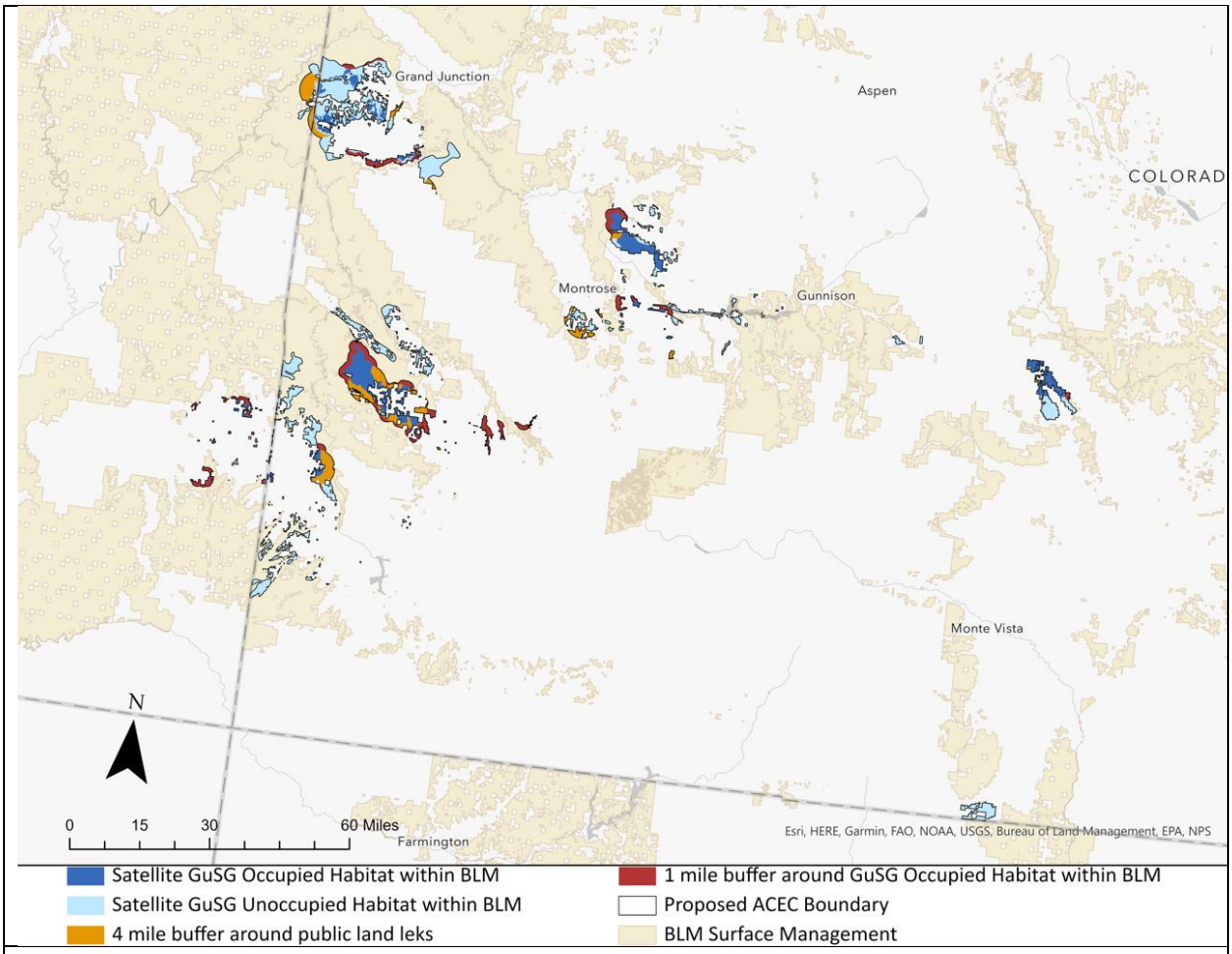


Figure 4. Maps of nominated ACECs in Gunnison Basin (top) and satellite populations (bottom).

V. The ACEC Proposal Meets BLM's Relevance and Importance Criteria

a. The proposed network of ACECs meets one or more of BLM's Relevance criteria

BLM Criterion: *Fish and wildlife resource (including but not limited to habitat for endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity)*. The nominated network of GuSG ACECs (Figure 4) contains crucial habitat for GuSG across its range and habitat for many other sensitive and threatened native species that rely on healthy sagebrush (Attachment 1). The proposed network of ACECs would protect occupied and unoccupied habitat crucial to the conservation and recovery of GuSG (USFWS 2019, USFWS 2020b, USFWS 2020c, USFWS 2014a, USFWS 2014b) and lands within four miles of leks. The four-mile buffer is necessary to prevent avoidance of otherwise suitable habitat due to infrastructure and is consistent with findings from Ouren et al. (2019) and the approach used in the Rangewide Conservation Plan (BLM 2005).

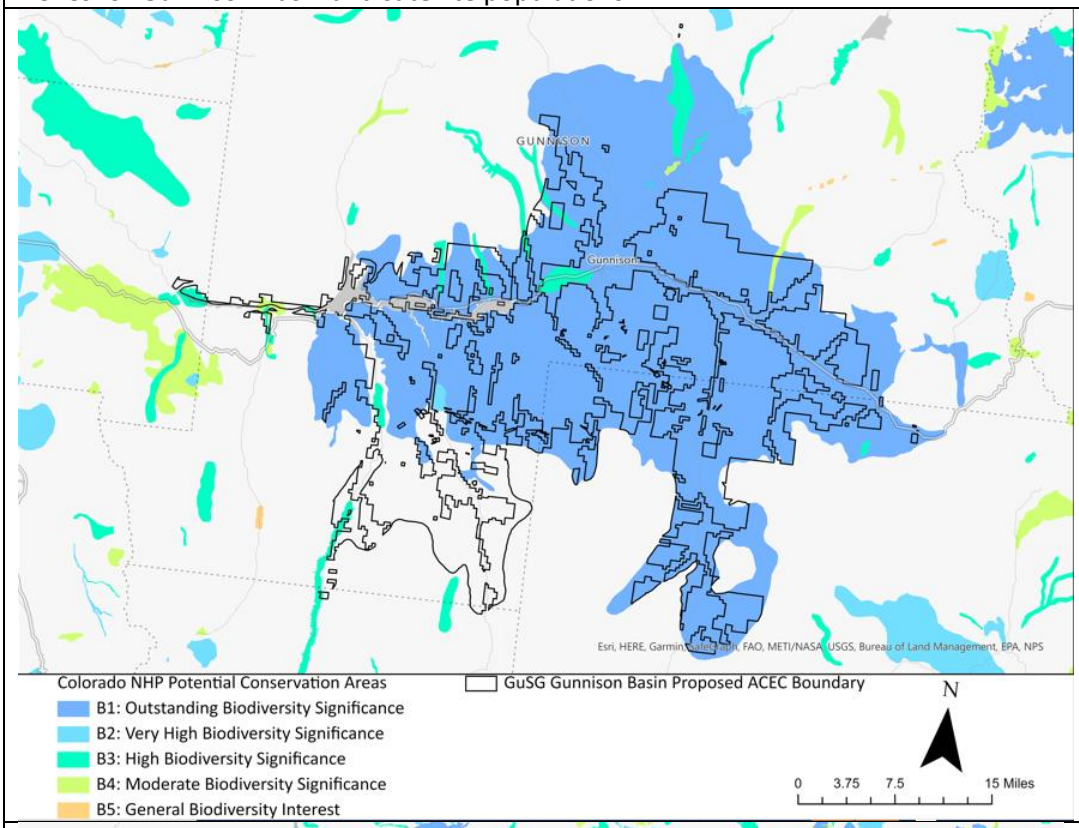
Sagebrush in Colorado provides shelter for many small mammals and birds, including species like Brewer's sparrow and sage-sparrow that are found almost exclusively in sagebrush habitats (https://cnhp.colostate.edu/projects/biodiversity-status). Sagebrush is weakly conserved in Colorado, and several vertebrate species that need conservation attention in Colorado depend on sagebrush (https://cnhp.colostate.edu/projects/biodiversity-status). Conservation of large areas of intact

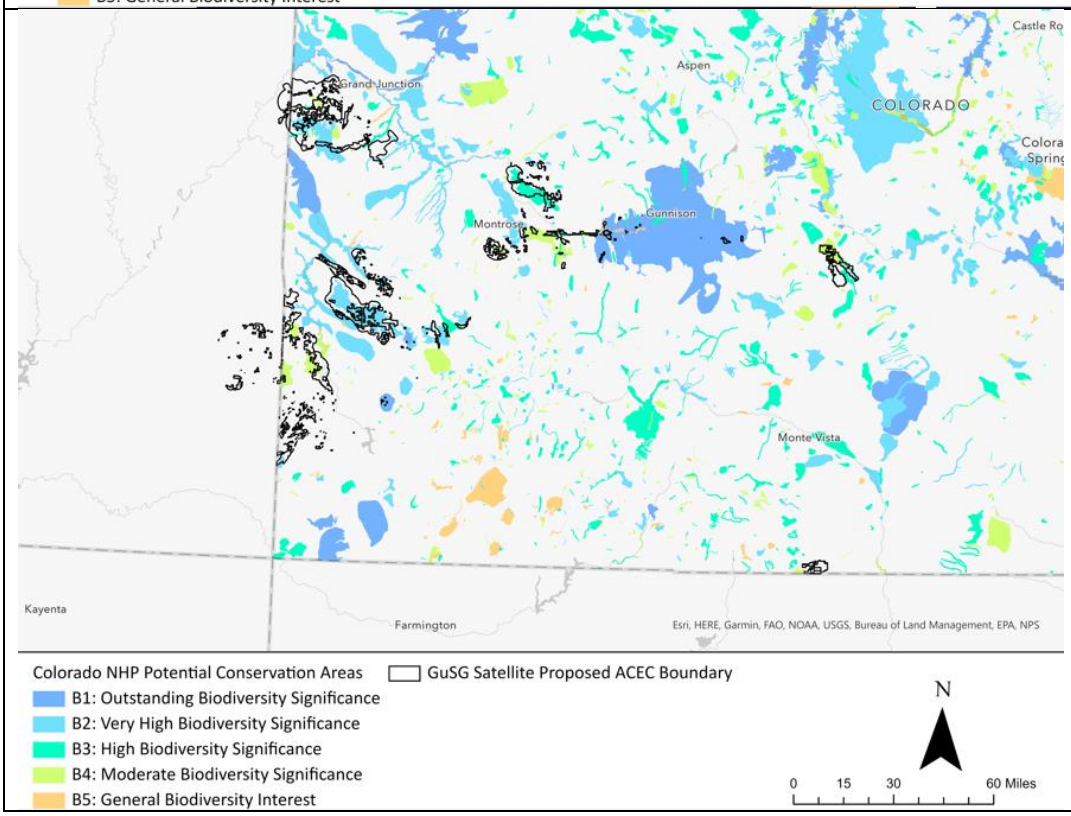
sagebrush is essential for maintaining species diversity in Colorado. GuSG are sensitive to loss, fragmentation and degradation of sagebrush habitat, and currently occupy areas of sagebrush that are relatively intact, contiguous, and healthy compared with the sagebrush elsewhere in the species' historic range in Southwest Colorado. Areas with GuSG therefore are also important refuges for a variety of other at risk species, including 27 rare plant species (including 7 BLM sensitive species and 1 USFWs candidate species, and five rare animal species ranked as critically imperiled, imperiled or vulnerable either in Colorado or globally (see details in Attachment 1) as mapped by Colorado Natural Heritage Program (CNHP). In addition, these areas contain important habitat mapped by CPW for peregrine falcons, bald eagles, Columbian sharp-tailed grouse, and cutthroat trout (see details in Attachment 1).

BLM Criterion: *Natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features)*. The proposed ACEC network will protect sagebrush communities, including many rare plant species that depend on the sagebrush ecosystem within the ACECs. The proposed ACEC network will also protect sufficient land to support natural processes necessary to maintain a healthy sagebrush ecosystem across the range of the GuSG. Many models currently indicate that sagebrush cover is vulnerable to a drying and warming climate (Neely et al., 2010; Palmquist et al. 2016). Limiting discretionary disturbance and managing for native vegetation and natural processes will help buffer against these trends (Neely et al, 2010; National Fish, Wildlife and Plants Climate Adaptation Partnership. 2012). Further, a portion of the nominated ACEC network contains ponderosa pine/sagebrush intermix lands. Given the warming and drying trend, these ecosystems may be very important in the future for providing GuSG habitat.

The proposed ACECs overlap considerably with CNHP Potential Conservation Areas. See Figure 5 and Attachment 1. Potential Conservation Areas are those places that contribute to Colorado's biodiversity. See https://cnhp.colostate.edu/ourdata/pca-reports/. PCAs are assigned biodiversity significance ranks using a 1-5 ranking system with 1 being globally outstanding to 5 being locally significant.

Figure 5. Overlap of Colorado Natural Heritage Program Potential Conservation Areas and proposed ACECs for Gunnison Basin and satellite populations.





b. The proposed ACEC network meets one or more of BLM's importance criteria.

BLM Manual 1613 requires that the value, resource, system, process, or hazard that meet(s) the "relevance" criteria must also have substantial significance and values in order to satisfy the "importance" criteria. Collectively, and individually, the units of our GuSG ACEC nomination meet the following criteria:

BLM Criterion: *The proposed GuSG ACECs have more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource.* The nominated proposed GuSG ACECs contain the remaining GuSG habitat managed by BLM, habitat that is necessary for the survival of the species (USFWS 2019, USFWS 2020b, USFWS 2020c, USFWS 2014a, USFWS 2014b, BLM 2005). With minor exceptions, the ACECs overlap designated critical habitat which is defined as essential for the conservation of the species (USFWS 2014b). The nominated ACECs have significance regionally and nationally in preventing further decline of the GuSG and preventing extinction, and making delisting the species more likely. Further, to assure resilience, representation and redundancy, it is necessary to protect the entire network of nominated ACECs (not just parts of it) for the long-term conservation of the sage grouse.

BLM Criterion: *The proposed ACEC has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.* The current proposed network of ACECs has already been identified by CPW and the USFWS (2019, USFWS 2014) to contain habitat that is valuable and necessary for the GuSG. Collectively, this network encompasses fragile ecosystems that are degrading in their functionality for GuSG, and many other species that depend on sagebrush, including Brewer's sparrow, sage-sparrow, and several of Colorado's rare plant species (https://cpw.state.co.us/learn/Pages/SagebrushSpeciesConservationStrategy.aspx, https://cnhp.colostate.edu/projects/biodiversity-status/). If current trends continue, GuSG and other species that depend on sagebrush may be profoundly impacted by increased habitat loss and degradation caused by land use activities (e.g., overgrazing, recreation, development) and stressors (e.g., drought, invasives, climate change). The USFWS scenario planning in the Species Status Assessment (2019) showed that without aggressive conservation action, the plight of the GuSG is dim. The habitat encompassed by the proposed ACEC network is irreplaceable given the paucity of remining habitat and the location of leks.

BLM Criterion: *The proposed ACEC has been recognized as warranting protection in order to satisfy national priority concerns to carry out the mandates of FLPMA*. In addition to protecting the last remaining habitat for the threatened GuSG (habitat deemed essential for the conservation of the species), establishing the proposed GuSG ACECs is also in line with national priorities, such as those outlined by President Biden's Executive Order 14008, "Tackling the Climate Crisis at Home and Abroad." Specifically, Section 216 of EO 14008 speaks to the necessity of conserving our lands and waters and the biodiversity they contain and lays out steps that the United States should take to achieve the goal of conserving at least 30 percent of our lands and waters by 2030. The establishment of GuSG ACECs, along with a concurrent withdrawal from mining, mineral location, and leasable minerals for the primary purpose of bolstering conservation for GuSG, would significantly further these efforts.

In addition, establishing this network of connected, protected ACECs aligns with Secretary Zinke's 2018

Secretarial Order 3362 (Improving Habitat Quality in Western Big-Game Winter Range and Migration Corridors) which emphasizes the importance of conserving and improving elk, mule deer, and pronghorn habitat. In particular, S.O. 3362 directs that the BLM apply site-specific management activities that conserve or restore habitat necessary to sustain local and regional big-game populations. Figure 6 shows the spatial relationship of crucial/high-priority big game (pronghorn, elk, mule deer, and bighorn sheep) habitats with the proposed ACECs. Attachment 1 shows acreage of overlap of specific big game habitat types with the proposed ACECS. There is substantial overlap between the ACECs and crucial/high-priority winter and production habitat for big game, and with high-priority habitat for big game migration; by protecting ACECs, BLM will advance protections to key ungulate habitats.

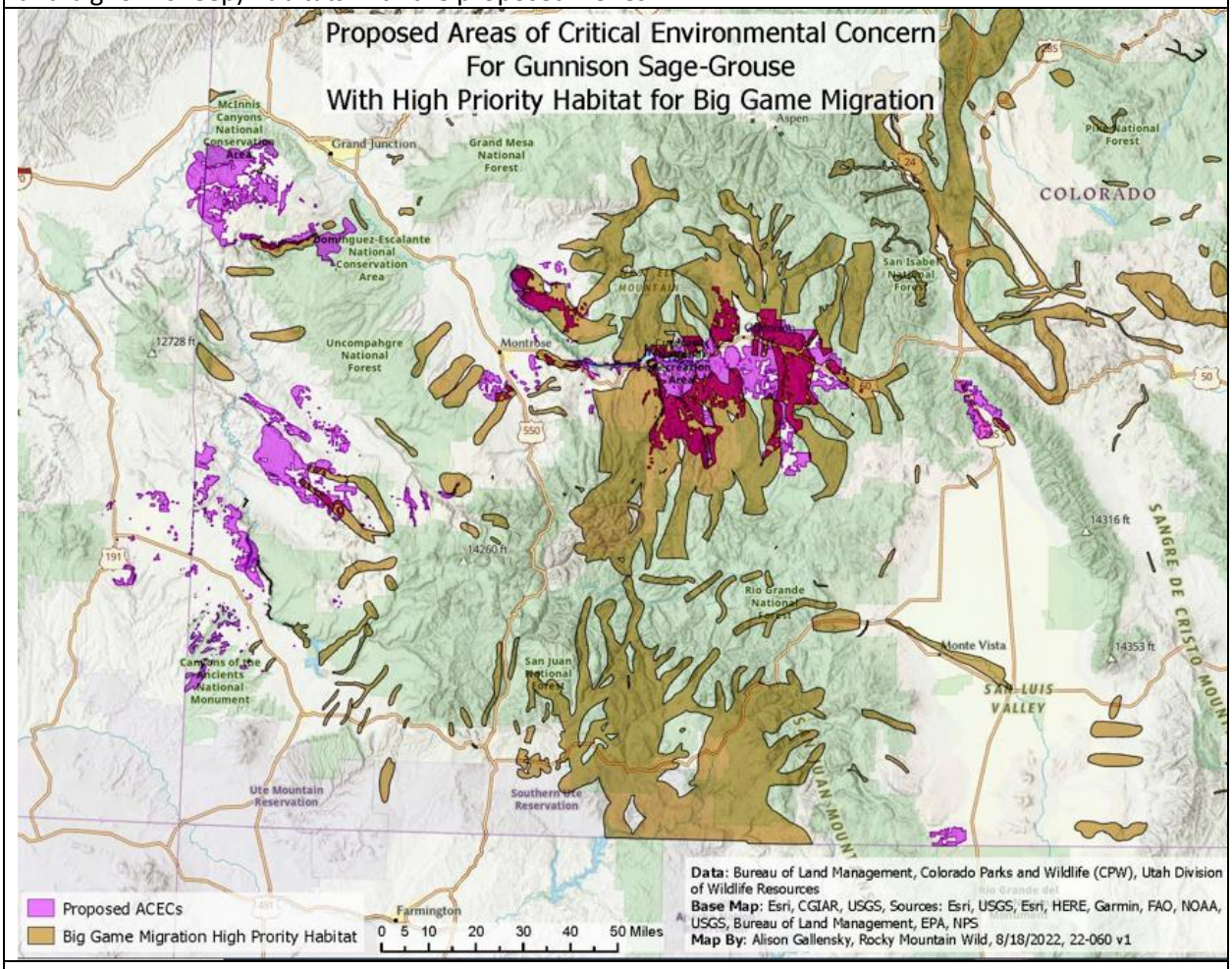
Protecting the proposed GuSG ACECs will significantly further BLM's FLPMA mandate to manage our public lands in a manner "that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values."[11] Additionally, BLM is expected to preserve "certain lands in their natural condition; that will provide food and habitat for fish and wildlife."[5] Because of these mandates, FLMPA encourages the designation of ACECs.[12]

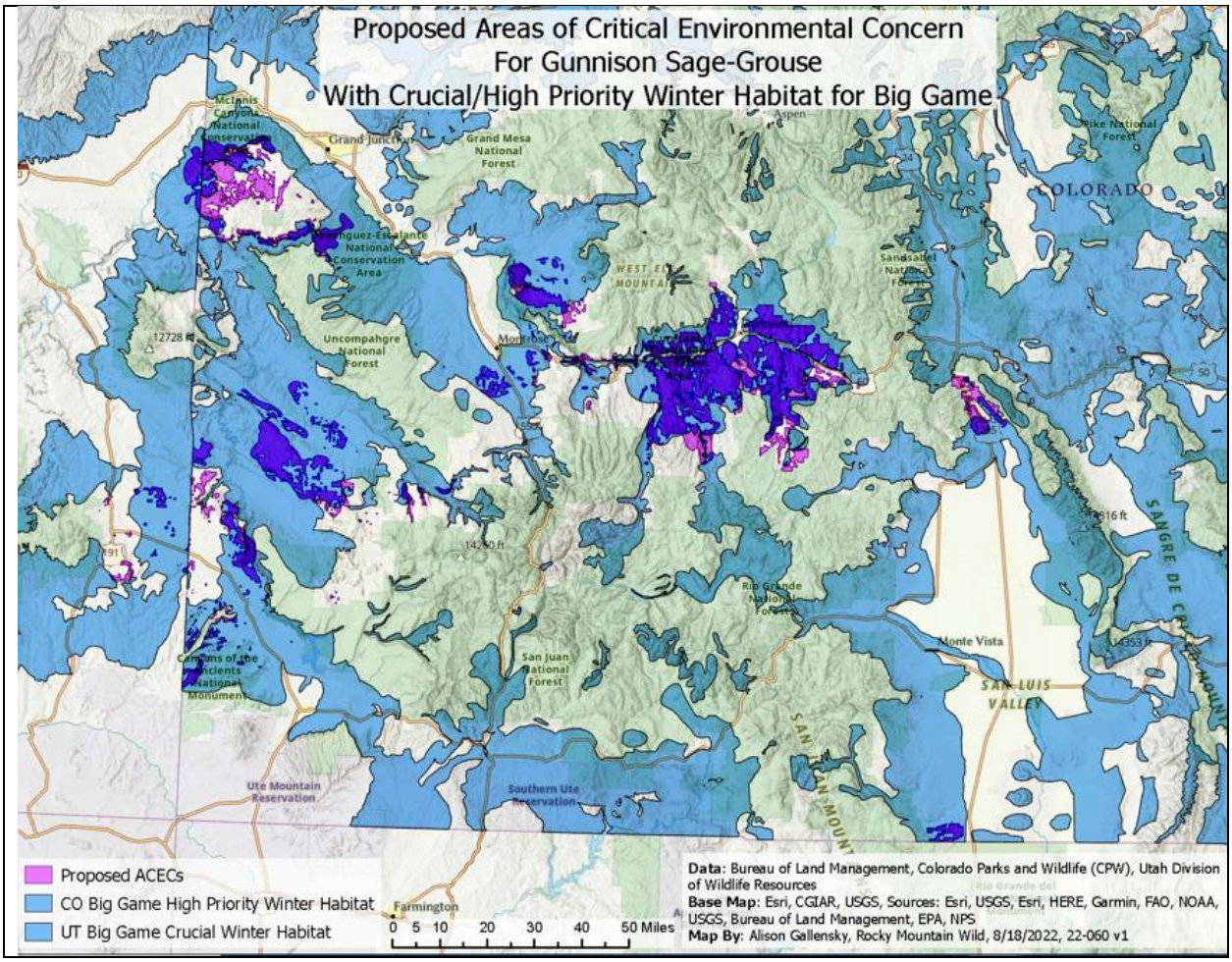
Under FLPMA's multiple use mandate, within which wildlife habitat is a "use," the agency must balance resources to take into account "the long-term needs of future generations for renewable and nonrenewable resources, including… wildlife and fish" to achieve the "harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment."[13] The designation of GuSG habitat as ACECs will go a long way toward achieving this important mandate of FLPMA – "FLPMA balancing." The basic principle of FLPMA balancing is that the agency cannot plan for all the multiple uses at once on all the lands (Feller et al. 1996). Conserving a portion of western BLM lands as ACECs to ensure persistence of GuSG (and other at-risk sagebrush-dependent species as we outline below) will help the BLM achieve FLMPA balancing across BLM lands.

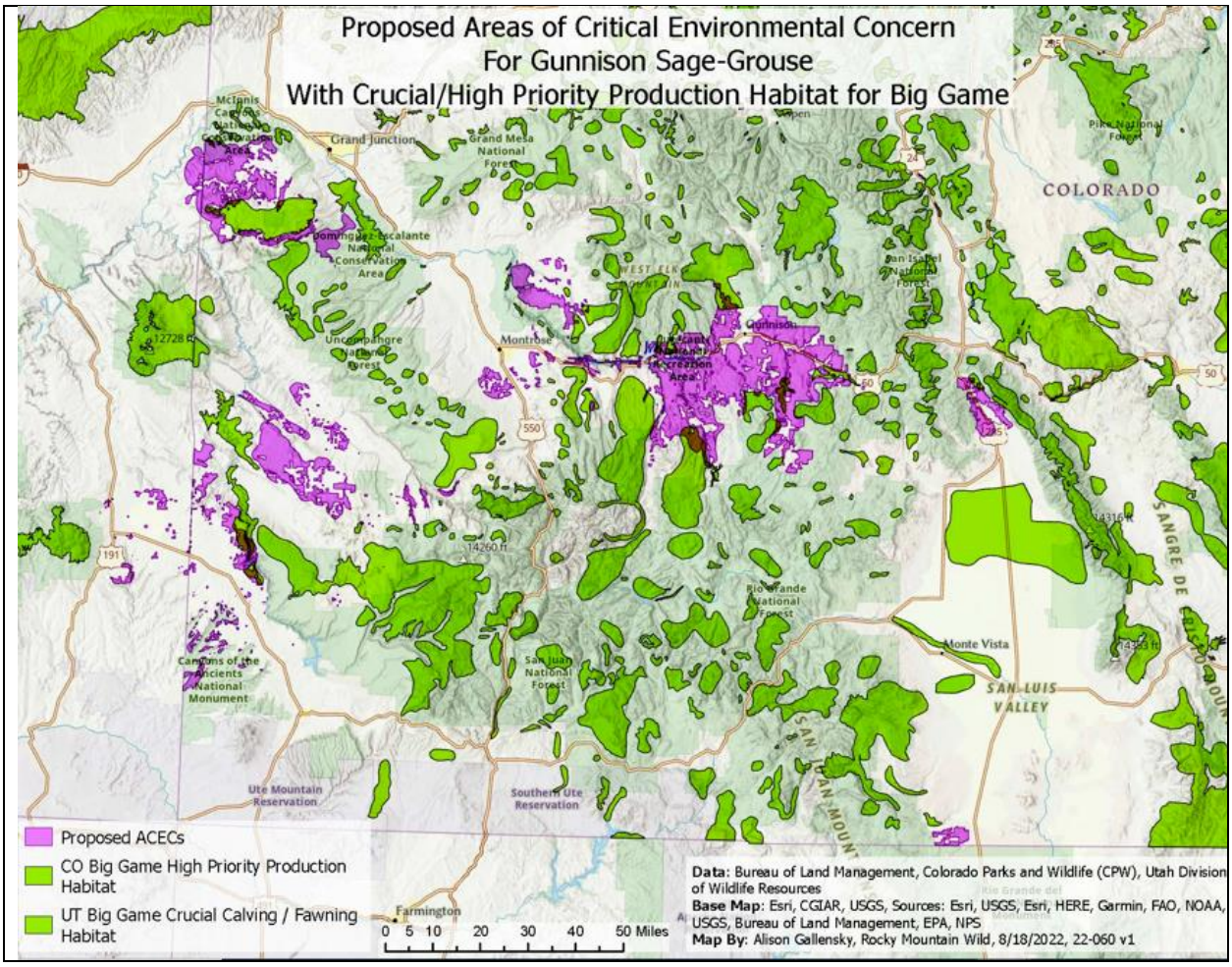
In summary, designating GuSG ACECs would satisfy current national priorities and enable the BLM to better meet the mandates of FLPMA. This designation and related special management attention would balance the resources in a way that benefits GuSG and its ecosystem as well as other species by protecting and preserving the quality of the habitat in a natural condition, while continuing to allow many other multiple uses outside the ACECs across the Resource Areas.

[11] 43 U.S.C. § 1701(a)(8))
[12] 43 U.S.C. § 1701(a)(11)
[13] 43 U.S.C. § 1702(c)

Figure 6. The spatial relationship of crucial/high-priority big game (pronghorn, elk, mule deer, and bighorn sheep) habitats with the proposed ACECs.




Proposed Areas of Critical Environmental Concern
For Gunnison Sage-Grouse
With Crucial/High Priority Winter Habitat for Big Game
McInnis Canyons National Conservation
Grand Junction
Grand Mesa National Forest
Aspen
Pike National Forest
COLORADO
Dominguez-Escalante National Conservation Area
Uncompahgre National Forest
Montrose
Sandsatel National Forest
12728 ft
14250 ft
14353 ft
Rio Grande National Forest
Monte Vista
San Juan National Forest
SAN LUIS VALLEY
Canyons of the Ancients National Monument
Ute Mountain Reservation
Southern Ute Reservation
Farmington
Proposed ACECs
CO Big Game High Priority Winter Habitat
UT Big Game Crucial Winter Habitat
0 5 10 20 30 40 50 Miles
Data: Bureau of Land Management, Colorado Parks and Wildlife (CPW), Utah Division of Wildlife Resources
Base Map: Esri, CGIAR, USGS, Sources: Esri, USGS, Esri, HERE, Garmin, FAO, NOAA, USGS, Bureau of Land Management, EPA, NPS
Map By: Alison Gallensky, Rocky Mountain Wild, 8/18/2022, 22-060 v1



VI. All proposed ACECs Require Special Management Attention

"Special management attention" refers to management prescriptions developed during preparation of an RMP expressly to protect the important and relevant values of an area from the potential effects of actions permitted under the RMP. These are management actions that would not be necessary if the relevant and important values were not present.[14] The proposed GuSG ACECs require special management attention because current management is not adequately supporting the GuSG population, land health standards are not being met, and recovery is not likely without more aggressive conservation measures. The US Fish and Wildlife Service found that the most substantial threats to the GuSG currently and in the future include habitat decline due to human disturbance, small population size and structure, drought, climate change, and disease.[15]

a. Special management attention is required because the GuSG population is declining

As discussed in a previous section, GuSG populations, overall but especially in the satellite populations, are in decline. Current management, which allows for a variety of activities that stress

[14] 43 CFR § 1601.0-5(a)

[15] 79 Fed. Reg. 69192 (November 20, 2014).

the GuSG (e.g., grazing, recreation, energy development, transmission) is not adequately protective to curb population declines.

b. Land health evaluations show that GuSG habitat is not meeting standards or has not been evaluated.

54% of allotment acres that fall within GuSG habitat are not meeting land health standards.[16] In addition, 12% of the allotment acres that fall within GuSG habitat have not been evaluated. See Figure 7. Special management attention is needed to achieve land health standards.

c. Grazing permits in GuSG habitat are mainly being renewed without benefit of environmental analysis

FLPMA Section 402(c)(2) allows the BLM to renew permits without National Environmental Policy Act (NEPA) environmental review. The section was added to FLPMA in 2014 in acknowledgement of BLM's grazing permit renewal backlog but also with the expectation that BLM would reduce its backlog and ultimately conduct environmental assessments on permit renewals. With limited capacity, BLM should prioritize environmental assessments of grazing permit renewals in habitat for species listed under the ESA such as the GuSG.

An analysis completed by the Western Watersheds Project (2022) shows that many of the grazing allotments within GuSG habitat have not been renewed with benefit of an environmental assessment and instead have been renewed using Section 402(c)(2).[17] See Figure 8. Viewed in concert with the fact that most of the allotment acres in GuSG habitat are not achieving land health standards, it is clear that special management attention for the proposed GuSG ACECs is needed to assure sage-grouse habitat objectives are being met.

[16] Data sources: BLM Rangeland Health Status (2020) - The Significance of Livestock Grazing on Public Lands
BLM's allotment Land Health Standards (LHS) assessment records (1997 - 2019)
BLM LAND HEALTH STATUS (2020) (https://mangomap.com/peer/data/blm_natl_grazing_allot_lhs2020.shp)

[17] See Western Watersheds Project Story Map *Renew or Review* (2022) at https://mangomap.com/peer/data/blm_natl_grazing_allot_lhs2020.shp. Accessed August 16, 2022.

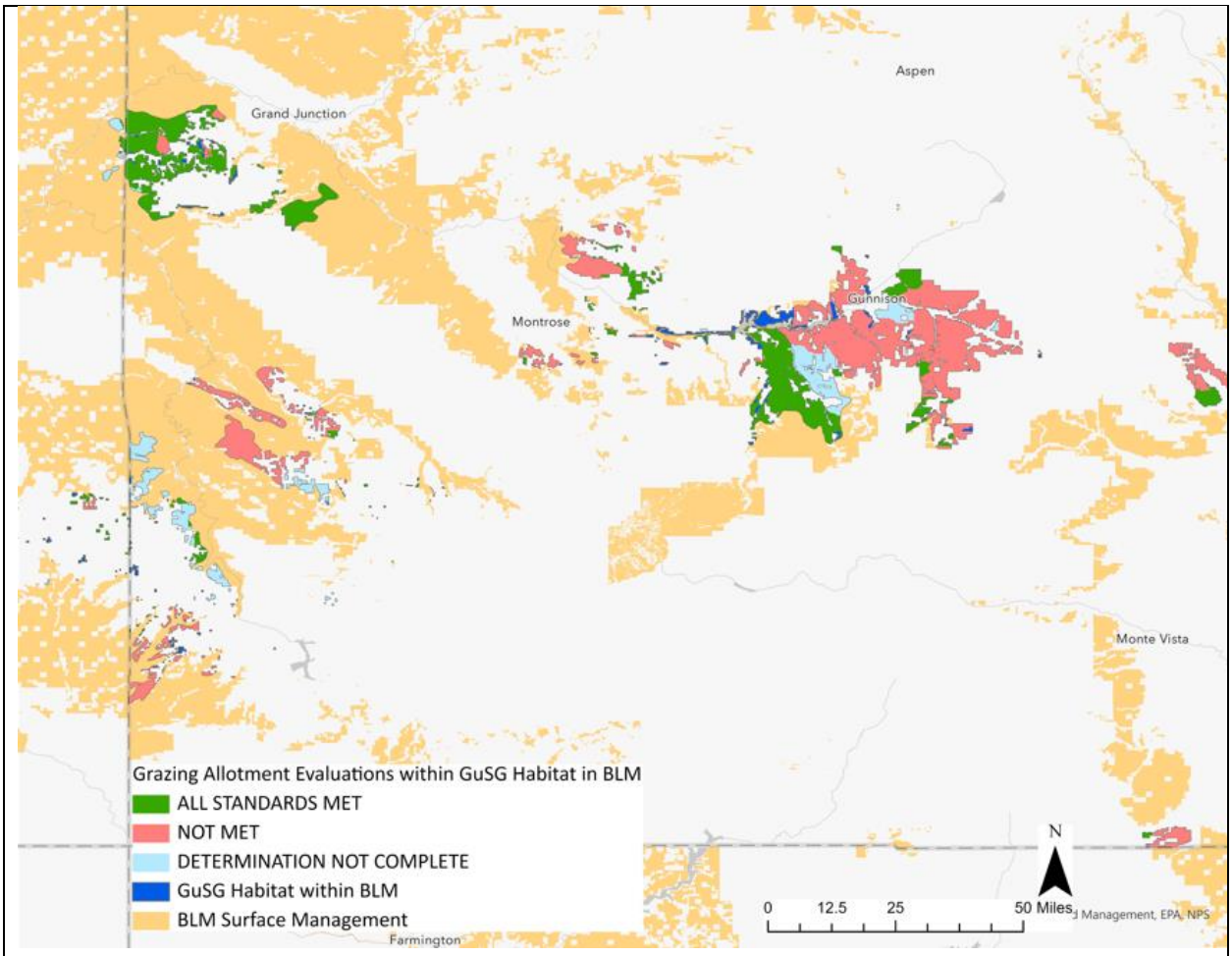


Figure 7. Areas (representing BLM grazing allotments or portions of allotments) that are currently meeting the federal rangeland health standards, are not currently meeting standards or have yet to be assessed for rangeland health.

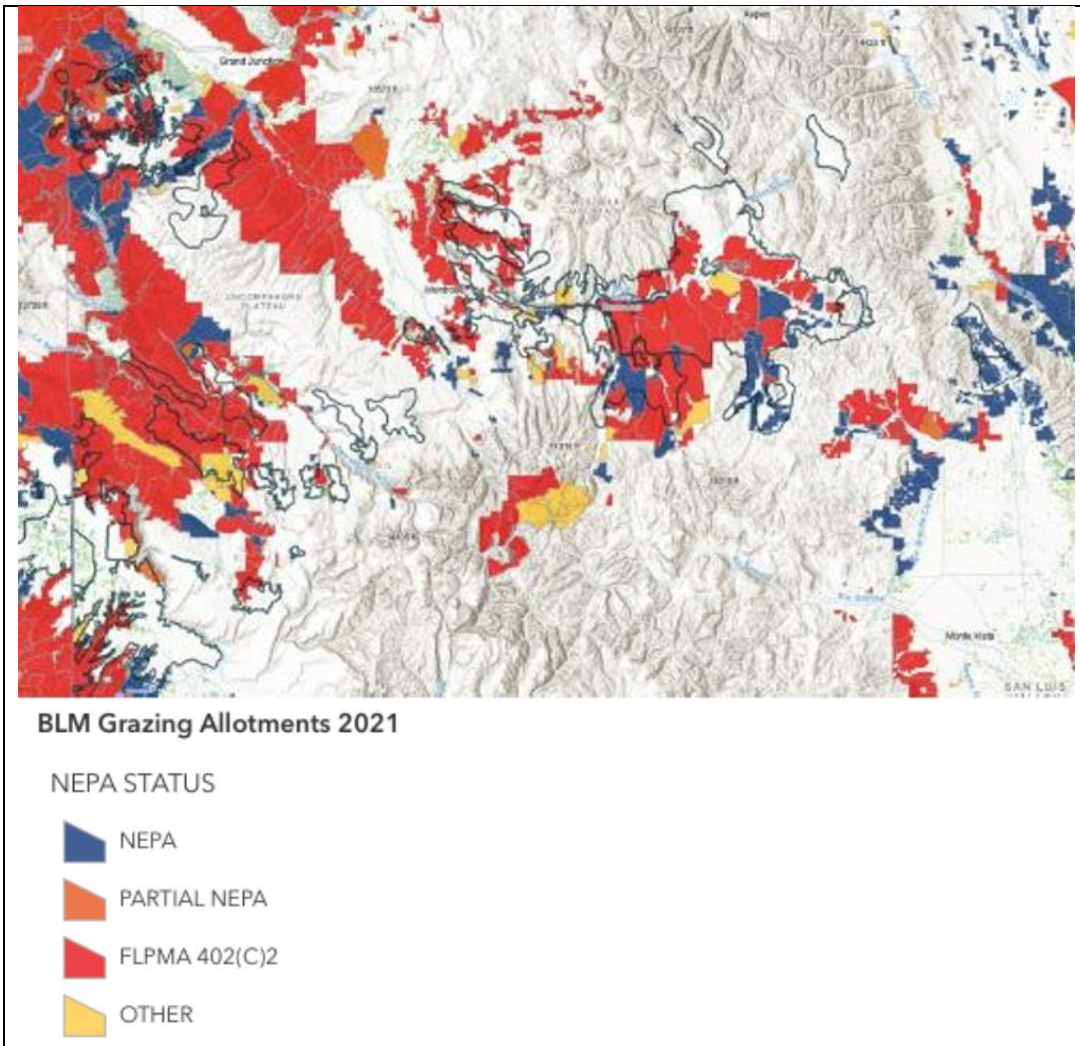


Figure 8. Permit renewal status of allotments in western Colorado. GuSG habitat is demarcated by the black line. Many of the allotments within GuSG habitat have been renewed without the benefit of an environmental analysis. Source: Western Watersheds Project (2022). See https://storymaps.arcgis.com/stories/45ea3ebe6ef54bd0840bb41e63a79174.

d. USFWS scenario planning demonstrates that without special management attention the likelihood of recovery and viability is low

As discussed above, the USFWS scenario planning demonstrates that without special management attention the likelihood of recovery and viability is low. See Figure 3.

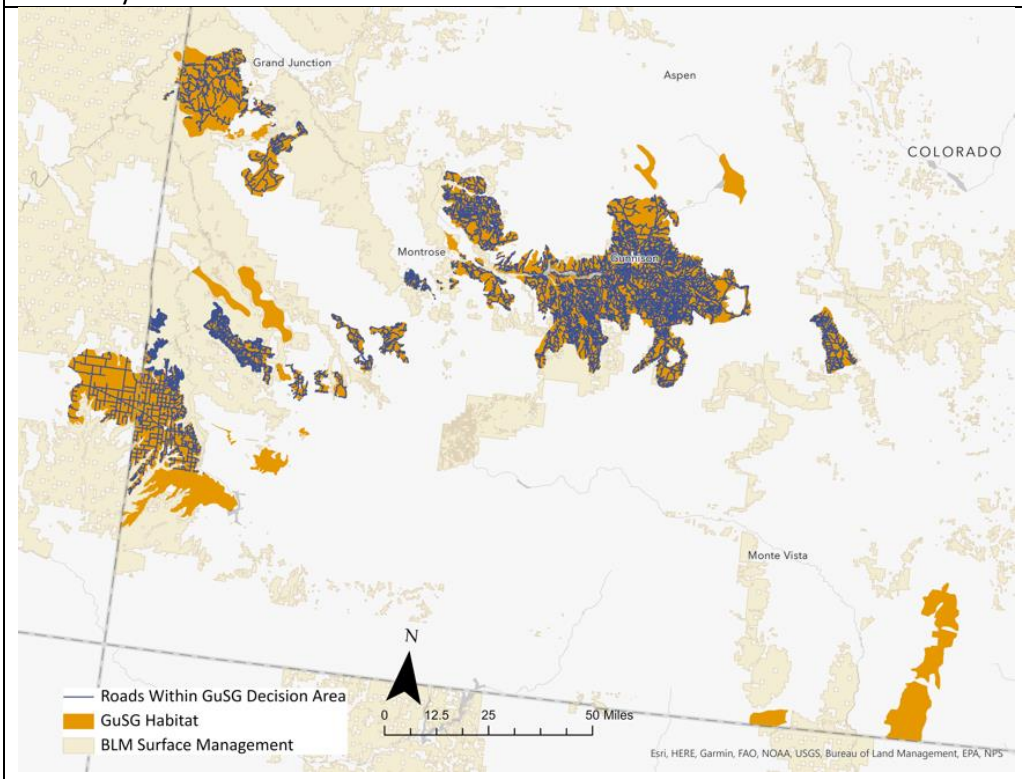
e. BLM 2016 surface disturbance data shows that GuSG habitat is degrading

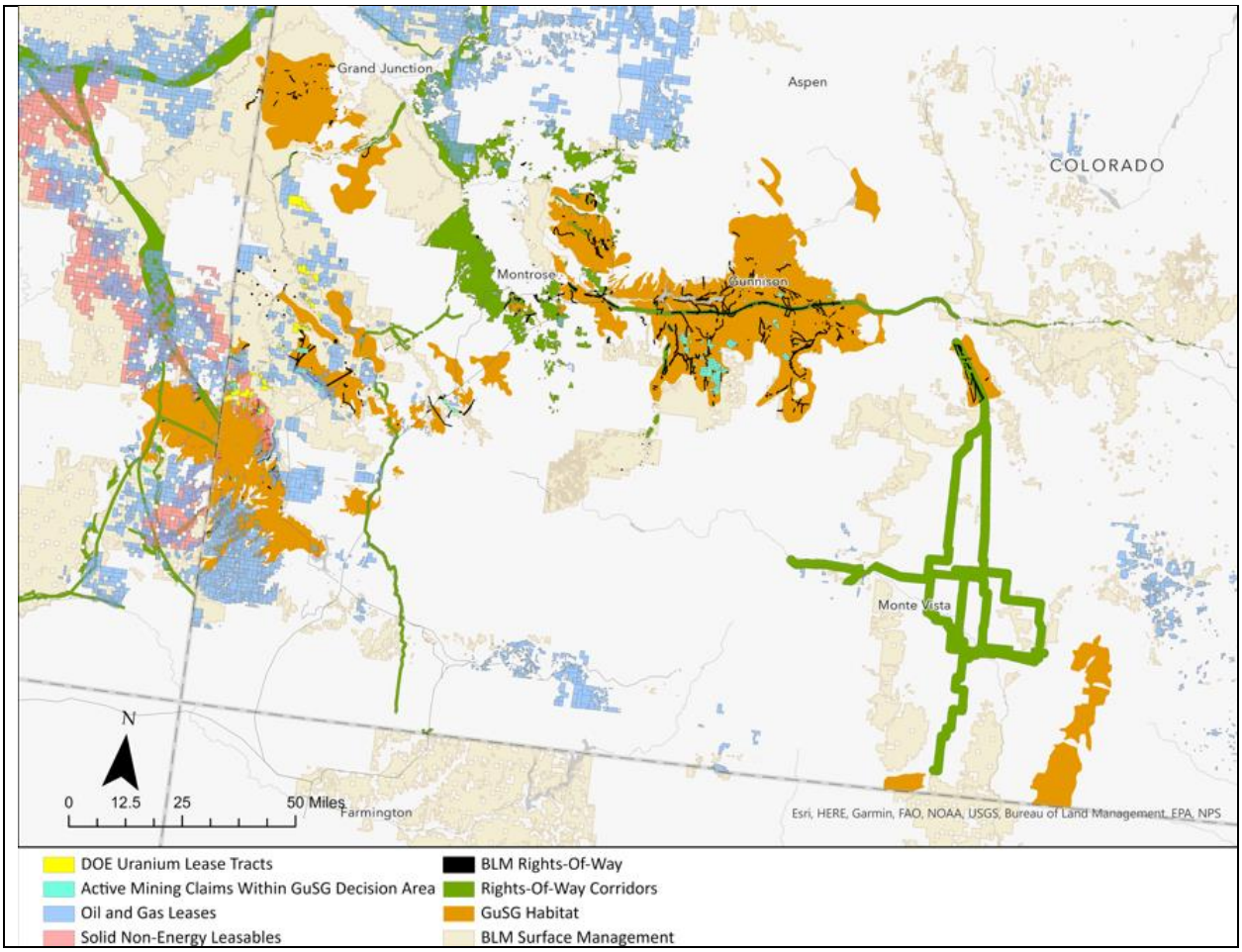
As part of the 2014-2016 rangewide conservation planning effort (halted), BLM made surface disturbance spatial data available. Figure 9 shows surface disturbance as of 2016 from roads, rights of way and mineral and energy development in and near GuSG habitat.[18] Given that more acres have

[18] Note that disturbances >4 miles from habitat impact GuSG adversely (Ouren et al., 2018; BLM 2005)

experienced disturbance in the intervening six years, it is reasonable to presume that these maps underestimate current disturbance. Special management attention is needed to prevent further discretionary disturbances to habitat.

Figure 9. Maps depicting specific types of surface disturbance in and near GuSG habitat as of 2016. Top map: roads with the decision area boundary. Bottom map: mineral and energy activity and leases within the decision area boundary. The maps use BLM data shared as part of the 2014-2016 BLM Rangewide Plan Amendment Process (started in 2014 and later abandoned). The decision area boundary is defined in the 2016 draft EIS.



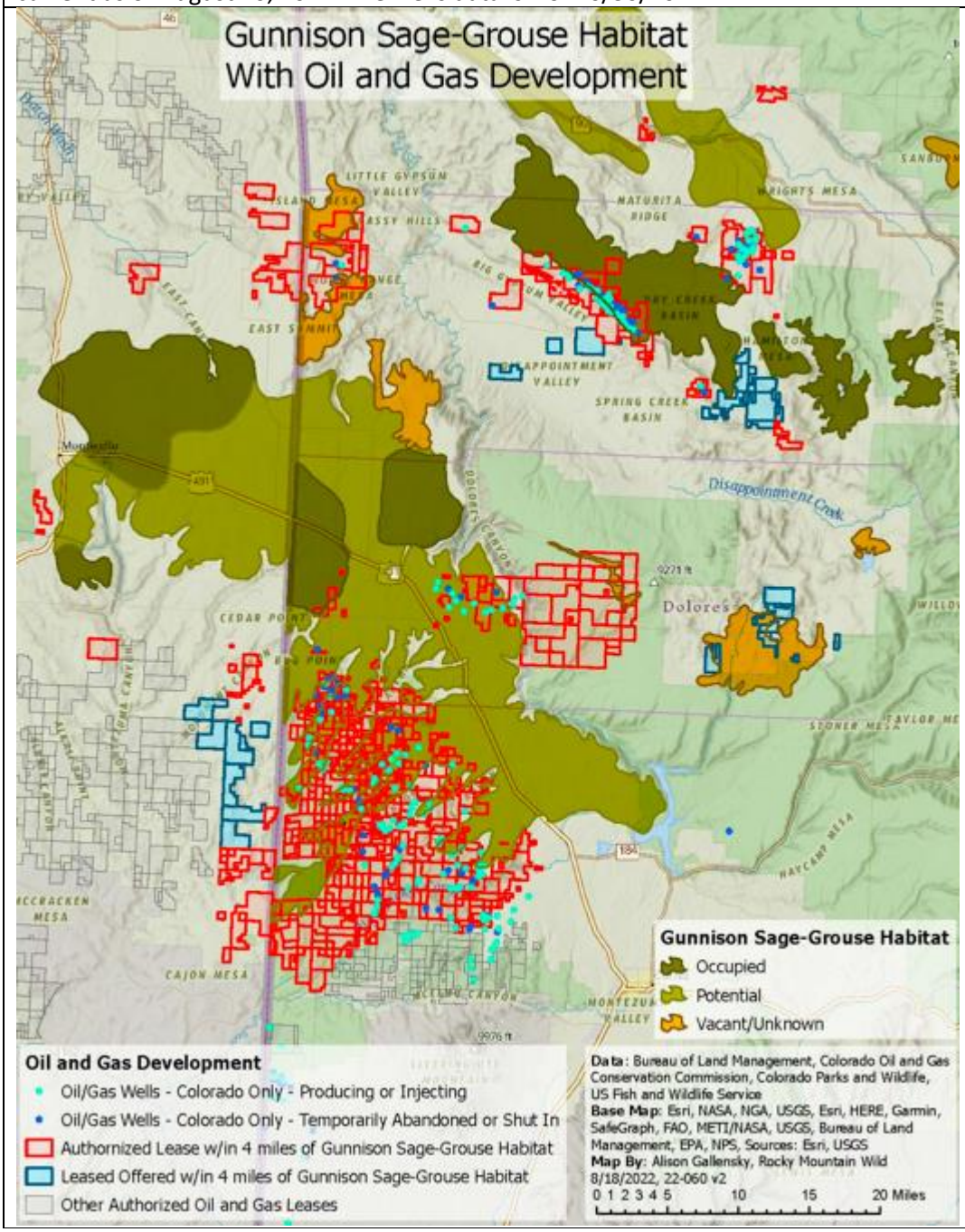


f. Oil and gas leasing and drilling data show recent energy development in and around GuSG habitat.

Figure 10 shows the extensive oil and gas leasing (offered since 2017 and currently authorized) and current activity in and around GuSG habitat. Special management attention is needed to prevent unnecessary disturbance from oil and gas surface activity to GuSG habitat and populations, and to reduce infrastructure associated with existing oil and gas development. Oil and gas activity and infrastructure that is located outside of GuSG habitat or lek buffers can still impact habitat and populations (e.g., increased traffic on roads near leks, reduced connectivity between populations and subpopulations).[19]

[19] The Colorado Federal District Court recently set aside two sets of oil and gas leases offered in the Tres Rios Field Office finding BLM violated federal law for failure to consider all the reasonably foreseeable impacts at the earliest practicable point. Bd. of Cty. Comm'rs of San Miguel v. United States BLM, 2022 U.S. Dist. LEXIS 30122, at *55-56 (D. Colo. Feb. 9, 2022) (finding 2018 lease sale violated NEPA and ESA).

Figure 10. Oil and gas leasing and drilling in and around GuSG habitat. The leases offered data shows leases that were offered but are not currently authorized 2017 and later. The authorized lease data is current as of August 10, 2022. The wells data is from 6/30/2022.



g. ACEC designation provides options for special management attention that cannot be implemented through general plan provisions

i. ACEC designation makes funding available to purchase land and conservation easements from willing landowners to conserve important GuSG habitat

ACEC designation makes funding more available to purchase land and conservation easements from willing landowners to conserve resources both within and outside ACECs.[20] Such authority and purchases can help BLM to address the USFWS-identified threats of residential and other development on private land and small, isolated populations outside the Gunnison Basin (Final Threatened Rule, 79 Fed. Reg. at 69238, USFWS 2020b). There are many private landowners across the range of the species who have expressed interest in conservation easements or selling land that contains important GuSG habitat, and the ability to secure easements or purchase land for conservation is limited in large part by the availability of funding (pers. comm., Gunnison County). BLM can make an important contribution to the larger collaborative effort by designating ACECs and supporting GuSG conservation across various land ownerships.

Approximately 43 percent of GuSG occupied and critical habitat is on private land. In addition, land ownership patterns are patchy in large portions of the occupied and unoccupied critical habitat for the species, and active GuSG leks and other crucial seasonal habitats are found on private land adjacent to public land. Habitat on private land may be at risk of loss to residential development and other activities either imminently or over the long-term. Conservation of private lands through conservation easements or acquisition from willing landowners is important for long-term protection of sufficient habitat for the persistence of the six satellite populations outside of the Gunnison Basin. The same strategies may also be important to protect habitat that is of particularly high value for conservation in the Gunnison Basin.

ACEC designation can also function to draw public attention and increase support, funding, and other resources for conservation. ACEC designation is a public declaration of the importance of protecting certain areas to conserve natural resources. BLM Manual 1613 notes that "[t]he ACEC designation indicates to the public that the BLM recognizes that an area has significant values and has established special management measures to protect those values. In addition, a designation also serves as a reminder that significant value(s) or resource(s) exist which must be accommodated when future management actions and land use proposals are considered near or within an ACEC. A designation may also support a funding priority." ACEC designation can thus elevate public recognition of significant values that require support and resources for their protection.

[20] National Landscape Conservation System funding is available for the purchase of conservation easements or acquisition of land from willing landowners on lands within or adjacent to ACECs. Further, BLM is receives funding from the Land and Water Conservation Fund (LWCF) through annual Congressional appropriations. These funds are generally targeted to specific projects, including the National Landscape Conservation System (NLCS), Areas of Critical Environmental Concern (ACEC) or Special Recreation Management Areas (SRMA), to purchase land and interests in land for natural resource benefits, including open space, wildlife habitat and recreation. The LWCF program allows the BLM to purchase land needed to manage key natural resources, to acquire legal ownership of land to enhance the management of existing public land and resources, and to provide public access. First authorized in 1970, funding is limited to specific project areas. (https://www.blm.gov/programs/land-and-water-conservation-fund). The BLM Acquisition Handbook (H-2100-1) also provides an overview of the Land and Water Conservation Fund (LWCF) programming and budget in Chapter IV, Sections III and IV. The handbook indicates that lands within Areas of Critical Environmental Concern are eligible for funding to purchase land and interests in non-federal land.

Drawing public attention to the conservation needs of an ACEC can also help leverage funding from private foundations and nonprofits to purchase land or conservation easements; restore habitat; and implement other on-the-ground conservation actions. For example, conservation organizations succeeded in securing private foundation funding to purchase private lands of high value for conservation that were then added to BLM ACECs (e.g., http://www.tuolumnecountylandtrust.org/history.html and http://publicland.org/awards/save-the-redwoods-league/). In addition, private foundations are also interested in directing funding for habitat restoration efforts in ACECs (pers. comm., Watermolen Foundation and PEW Charitable Trusts). ACEC designation can be an integral part of efforts to leverage funds for and interest in conservation and make significant conservation gains, as exemplified by the collaborative effort to manage the Snake River ACEC and Important Bird Area (http://www.audubon.org/important-bird-areas/snake-river-area-critical-environmental-concern).

ii. ACEC designation can facilitate mineral withdrawal and increase protection of leks and other crucial GuSG habitat from hard rock mining

Finally, ACECs are often withdrawn from mineral location and entry, including to protect ESA-listed and sensitive species (e.g., BLM Southern Nevada District ROD 2009, *Locatable Mineral Entry Withdrawal for Areas of Critical Environmental Concern within the Southern Nevada District Office,* NEPA NV-052-2008-438, withdrawing 944,343 acres from for 20 years). While withdrawal from mineral location and entry is possible in areas not designated as ACECs, designation highlights the conservation value and sensitivity of a given area and can help to focus mineral withdrawal where it is most needed to protect sensitive resources.

Further, in areas that have not been withdrawn from mineral location and entry, BLM may also give ACECs additional protection from hard rock mining development beyond what is possible through provisions established in an RMP. For example, if proposed within an ACEC, small-scale hard rock mining operations that would ordinarily only require Notice instead must submit a Plan of Operations (https://www.blm.gov/co/st/en/fo/rgfo/minerals/locatable_minerals.html), providing BLM with greater opportunity to work with the operator to ensure protection of sensitive resources. Small-scale mining operations could have a significant impact on GuSG, particularly if they destroy active leks. It is unclear whether general plan provisions to protect leks can be applied to small-scale hard rock mining activities. ACEC designation could provide important protection from hard rock mining, particularly in the satellite population areas, and in areas with the largest active leks in the Gunnison Basin.

VII. Additional species that live within the proposed ACEC areas are at risk and would benefit from designated ACECs.

Sagebrush ecosystems are weakly conserved in Colorado and many species that depend entirely or in part on sagebrush are declining. CPW has identified 11 'species of conservation need' that depend on sagebrush (https://cpw.state.co.us/learn/Pages/SagebrushSpeciesConservationStrategy.aspx. Ten of these species (Green-tailed towhee, black-throated sparrow, Brewer's sparrow, lark sparrow, Merriam's shrew, northern harrier, sage-sparrow, vesper sparrow, lark sparrow, and kit fox) occur in sagebrush in the planning area. In addition, sagebrush in the planning area supports many of Colorado's rare plant species (https://cnhp.colostate.edu/projects/biodiversity-status/). Conserving and restoring expanses of functioning sagebrush habitat is important to the conservation of all of these species

((https://cpw.state.co.us/learn/Pages/SagebrushSpeciesConservationStrategy.aspx, https://cnhp.colostate.edu/projects/biodiversity-status/).

The proposed areas also support many additional at-risk species in need of management attention, including CNHP-mapped high precision occurrences of 27 rare plant species (including 7 BLM sensitive species and 1 USFWS candidate species, and five rare animal species ranked as critically imperiled, imperiled or vulnerable either in Colorado or globally (see details in Attachment 1). In addition, these areas contain important habitat mapped by CPW for peregrine falcons, bald eagles, Columbian sharp-tailed grouse, and cutthroat trout (see details in Attachment 1). These sensitive habitats also need special management attention.

Conserving and restoring large expanses of functioning sagebrush habitat in southwest Colorado is also important to maintaining herds of big game in southwest Colorado. There is substantial overlap between the ACECs and crucial/high-priority winter and production habitat for big game, and with high-priority habitat for big game migration; by protecting ACECs, BLM will advance protections to key big game habitats. Figure 6.

VIII. BLM found that all GuSG habitat meets nomination criteria for ACECs

BLM's document entitled *Summary of Gunnison Sage-Grouse Resource Management Plan Amendment Areas of Critical Environmental Concern* that is posted to the eplanning site for this project describes previously nominated and designated ACECs. In the previous (now halted) rangewide conservation planning effort[21], all GuSG habitat (occupied and unoccupied) was nominated and found to meet relevance and importance criteria. See Summary at 16-18. Proposed management direction limited travel to existing roads and trails, prohibited designation of new Recreation Management Areas, and only allowed Special Recreation Permits that have neutral or beneficial effects to Gunnison sage-grouse and their habitat. It made the ACEC a right of way exclusion area and closed it to fluid mineral leasing and recommended withdrawal from locatable mineral entry.

IX. Recommended Management Prescriptions for Proposed ACEC units

a. Mineral Withdrawal

Protecting GuSG habitat in the proposed ACEC requires limiting activity by withdrawing, for the maximum period of time allowed by law,[22] all lands within GuSG habitat:

1. *from* certain uses harmful to the conservation of GuSG (e.g. mineral development of any kind (location [hardrock], leasing [fluid, coal, and other minerals, including geothermal), or sale (common minerals such as sand and gravel); and
2. *for* the conservation of GuSG and other native wildlife and plants and the sagebrush-steppe and adjacent ecosystems on which they depend.

We urge that the withdrawal be initiated as soon as possible. Some previous resource management plans establishing ACECs have included a statement that BLM will seek a withdrawal without the

[21] Gunnison Sage-Grouse Rangewide Draft Resource Management Plan Amendment/Draft Environmental Impact Statement. August 2016.
[22] 43 USC 1417

withdrawal taking place.

b. Management Prescriptions

In addition, we recommend the following mandatory (no exceptions, waivers, or modifications) management prescriptions be required for the nominated ACECs. Rationales based on best available science are provided in the next section.

Development, Infrastructure & Surface Disturbances

- Disallow new mineral leasing or sales within the ACECs. Pursue initiatives for early relinquishment of existing fluid mineral leases. Ensure that all existing grandfathered leases comply fully with existing stipulations and are subject to the most protective conditions of approval permitted by law. Ensure careful scrutiny of any requests for suspension of grandfathered leases to avoid improper extension of the primary lease term. Cancel leases issued unlawfully since 2015 within the nominated ACECs. Consider buying back undeveloped leases within the nominated ACECs.
- Prohibit new rights-of-way unless they are within an established ROW-developed footprint, and no reasonable alternative located outside of habitat exists. Existing rights-of-way permits should only be renewed upon a finding that the need for the continued right-of-way is in the public interest and that no reasonable alternative exists.
- Implement a cumulative surface disturbance cap of 0.5% in occupied habitat for the satellite populations, and a cumulative disturbance cap of 1% in occupied habitat for the Gunnison Basin.
- Prioritize the removal of infrastructure (including unneeded energy development equipment, roads, fencing and other range developments).
- Make ACECs renewable energy exclusion areas.

Travel and Recreation

- Do not construct new roads and routes[23] , subject to valid existing rights or except where realignment/rerouting is needed to benefit sage-grouse habitat. Prioritize unnecessary roads and trails for decommissioning and restoration to achieve the route density standard of less than 0.5 mile/square mile. The timeline for identifying illegal or redundant routes for closure and decommissioning should be two years. Where road systems are not yet designated, complete travel plans within five years.
- Limit Motorized and mechanized use to designated roads and trails.
- Roads shall be seasonally closed from March 1-July 15th in nesting and brood-rearing habitat and in non-habitat within 3 miles of a lek, and from November 1 to March 15th in winter habitat. Seasonal closures within 3 miles of leks for the satellite populations are absolutely critical and non-negotiable. In the Gunnison Basin BLM should consider seasonal closures within 3 miles of leks in at least one alternative. If BLM determines seasonal closures within 3 miles of all leks in the Gunnison Basin is not feasible, BLM should consider applying this buffer to particularly important leks and consider other strategies to ensure that leks are provided with the maximum protection possible from disturbance during the season of use.

[23] Routes refers to tracks and trails that are available for mechanized or motorized travel.

- Manage recreational uses as necessary so that they do not conflict with the conservation of GuSG and its habitat. Only issue special recreational permits if they have demonstrated neutral or beneficial effects to priority habitat areas, and do not issue permits for activities within 4 miles of an active lek during breeding and nesting seasons. Restrict camping within 4 miles of leks in mating and nesting time periods.

Grazing

- Ensure that all grazing allotments have incorporated applicable rangeland health standards as a term and condition of the permit and are meeting or exceeding applicable rangeland health standards. If not, adjust allotment management plans until rangeland health standards are met and monitor allotments annually to assure that the utilization and site-specific grass height standards are being met.
- Develop and implement best management practices to reduce livestock's facilitation of the spread of invasive species.
- Prioritize grazing permits and associated allotment management plans for full environmental review, including an assessment of whether an allotment is meeting BLM rangeland health standards, and subsequently monitor all allotments within designated ACECs.
- Facilitate the voluntary relinquishment of grazing permits and leases.
- Establish large grazing exclosures or reference areas in representative habitats that are currently not being actively grazed to use as a baseline to measure sagebrush habitat health in the absence of grazing.

Fire

- Following assuring the protection of life and property from wildfire, prioritize fire suppression to conserve GuSG habitat in the ACECs. Develop fire response plans so that equipment and personnel can be readily mobilized, and unnecessary surface disturbance is avoided.

Protection and Restoration of GuSG Habitat

- Manage or restore the portions of the ACEC area that were historically sagebrush, so that on average at least 70% of the land cover is sagebrush steppe sufficient to support sage-grouse.
- Prioritize protection and restoration of riparian and wetland areas and wet meadows.
- Use best practices for ecological restoration of degraded lands including using only genetically appropriate native seeds and plants. Monitor and continue restoration activities as needed until project objectives are met and at least for three years. Livestock grazing should be excluded from restored or rehabilitated areas until woody and herbaceous plants achieve sage-grouse habitat objectives. Develop revegetation plans so that native seed supplies are developed and available when needed.
- To maximize protection, ACECs should remain in public ownership with the possible exception of land exchanges that allow for additional or more-contiguous federal ownership patterns within the priority sage-grouse habitat area. The agency should also seek to acquire state and private lands adjacent to designated ACECs with intact subsurface mineral estate by donation, purchase, or exchange to best conserve, enhance or restore GuSG habitat.

c. Justification for Management Prescriptions

The literature is replete with studies that demonstrate that the above proposed management prescriptions are necessary to allow GuSG, and many other native sagebrush-dependent species, to persist for the long-term, as well as being reasonable, actionable and science-based. We draw on research and reports related to Greater sage-grouse when research specific to GuSG is not available.

Development, Infrastructure, and Surface Disturbance

- Disallow new mineral leasing or sales within the ACECs. Pursue initiatives for early relinquishment of existing fluid mineral leases. Ensure that all existing grandfathered leases comply fully with existing stipulations and are subject to the most protective conditions of approval permitted by law. Ensure careful scrutiny of any requests for suspension of grandfathered leases to avoid improper extension of the primary lease term. Cancel leases issued unlawfully since 2015 within the nominated ACECs. Consider buying back undeveloped leases within the nominated ACECs.

The report titled "National Greater Sage-Grouse Conservation Measures" produced by the Sage-Grouse National Technical Team (NTT) underscores the profound impact of energy and mineral development:

> "There is strong evidence from the literature to support that surface disturbing energy or mineral development within priority sage-grouse habitats is not consistent with a goal to maintain or increase populations or distribution. None of the published science reports a positive influence of development on sage-grouse populations or habitats. Breeding populations are severely reduced at well pad densities commonly permitted (Holloran 2005, Walker et al. 2007a). Magnitude of losses varies from one field to another, but findings suggest that impacts are universally negative and typically severe" (SGNTT 2011, emphasis added).[24]

More recent studies confirm the NTT findings, especially regarding fluid mineral development. See Green et al. (2017), Gamo and Beck (2017: 190), Kirol et al. (2020).

Similar to fluid mineral development, surface and subsurface mining has profound negative impacts on sage-grouse. New studies confirm the damaging effects of mining on sage-grouse and sagebrush habitat and underscore the need for conformance with the NTT Report recommendation to disallow and "[f]ind unsuitable all surface mining of coal under the criteria set forth in 43 CFR 3461.5 [and]…[g]rant no new mining leases unless all surface disturbances (appurtenant facilities) are placed outside of the priority sage-grouse habitat area…." (SGNTT 2011). A similar need to keep mining disturbance out of the most important Gunnison sage grouse habitat can be found in the COT Report: "Surface mining and appurtenant facilities within sage-grouse habitats result in the direct loss of habitat, habitat fragmentation, and indirect impacts from disturbance (e.g., noise, dust) …Surface facilities supporting underground mining activities can have similar impacts." (USFWS 2013). The COT Report went further, calling for management to "[a]void new mining activities and/or any associated facilities within occupied habitats, including seasonal habitats" (USFWS 2013).

- Prohibit new rights-of-way unless they are within an established ROW-developed footprint, and no reasonable alternative located outside of habitat exists. Existing rights-of-way permits should

[24] The goal of the NTT was to "[m]aintain and/or increase sage-grouse abundance and distribution by conserving, enhancing or restoring the sagebrush ecosystem upon which populations depend in cooperation with other conservation partners." https://www.biologicaldiversity.org/species/birds/pdfs/GrSG_NTT_Report.pdf at 6.

only be renewed upon a finding that the need for the continued right-of-way is in the public interest and that no reasonable alternative exists.

ROWs lead to infrastructure development (e.g., power and transmission lines, roads). ROWs have multiple impacts on sage-grouse (e.g., see SGNTT 2011; see discussion above), and sage-grouse may be affected by roads up to 6.9 km (4.2 miles) away (Connelly et al. 2004). Power lines are detrimental to sage-grouse because of increased predation risk (Steenhof et al. 1993; Lammers and Collopy 2007) due to perching of raptors and corvids. Deaths resulting from collisions with power lines are also a source of mortality for sage-grouse (Beck et al. 2006; 75 FR 13910). Power lines negatively affect lek trends up to 2.8 km, and nest and brood success were negatively affected by transmission lines up to distances of 2.6 and 1.1 km, respectively (Kohl et al. 2019). Negative effects of power lines, depending on the behavior or demographic rate, extended 2.5–12.5 km, which exceeds current recommendations for the placement of structures in areas around sage-grouse leks (Gibson 2018). The NTT report concluded that overhead power lines cause sage-grouse to avoid habitat and increase the risk of mortality due to both predation and collisions (SGNTT 2011). The BLM should follow the guidance of the NTT report, making priority habitat exclusion areas for new rights-of-way, as well ensuring that obsolete power lines be removed, and existing power lines be buried or modified (SGNTT 2011).

- Implement a cumulative surface disturbance cap of 0.5% in occupied habitat for the satellite populations, and a cumulative disturbance cap of 1% in occupied habitat for the Gunnison Basin.

Surface disturbance directly and indirectly diminishes habitat. It can have significant negative impacts on GuSG. For example, the USGS recently recognized that infrastructure (for example, processing facilities and roads) has similar impacts to the sagebrush ecosystem and wildlife as mining (Remington et al. 2021). According to the USFWS' COT Report, "surface mining and appurtenant facilities within sage-grouse habitats result in the direct loss of habitat, habitat fragmentation, and indirect impacts from disturbance (e.g., noise, dust)." Recent research confirms the COT report findings on negative impacts of surface disturbance to sage grouse; Kirol et al. (2020), found that ongoing surface disturbance from energy development within 8 km (4.97 miles) of sage grouse nests decreased the likelihood of nest success, and broods within 1 km (0.62 miles) of ongoing surface disturbance were less likely to survive than broods exposed to less disturbance. As ongoing disturbance increased, sage-grouse nests had an increasing rate of failure. Furthermore, female sage-grouse avoided habitat with higher levels of disturbance in favor of habitat with lower levels of disturbance (Kirol et al. 2020).

- Prioritize the removal of infrastructure (including unneeded energy development equipment, roads, fencing and other range developments).

In the ACECs, BLM should follow NTT Report guidance to remove obsolete power lines (as well as other obsolete infrastructure such as fences) and bury or modify existing power lines within one mile of ACECs. In particular, it is important to prioritize removal of unnecessary tall structures of any sort because predators such as raptors can perch and hunt from these structures (Utah Department of Natural Resources 2010). As Holloran (2005) found that road densities greater than 0.7 linear miles per square mile within 2 miles of leks resulted in significant negative impacts to sage grouse populations, protecting GuSG within the ACEC requires removing roads as needed to meet this standard on a per-square-mile-section basis.

Travel and Recreation

- Do not construct new roads and routes[25] subject to valid existing rights or except where realignment/rerouting is needed to benefit GuSG habitat. Prioritize unnecessary routes for decommissioning and restoration to achieve the route density standard of 0.5 mile/square mile. The timeline for identifying illegal or redundant routes for closure and decommissioning should be two years. Where road systems are not yet designated, complete travel plans within five years.

Roads have multiple impacts on sage-grouse, including mortality from vehicle collisions and behavioral disruption due to traffic, noise, and human presence (NTT 2011). Holloran (2005) found that road densities greater than 0.5 linear miles per square mile within 2 miles of leks resulted in significant negative impacts to sage-grouse populations. Aldridge et al. 2012 confirmed similar results for Gunnison sage-grouse, but found that the target route density should not exceed .5mi/mi2 (Aldridge et al. 2012). Roads destroy and fragment sage-grouse habitat and alter habitat as a consequence of edge effect (changes to aridity, dust pollution, noise, increased activities, increased garbage and roadkill) and facilitate the spread of invasive, non-native plant species (NTT 2011). Connelly et al. (2004) found that greater sage grouse may be affected by roads up to 6.9 km (4.2 miles) away. Restricting new roads in the ACECs comports with the 2011 NTT recommendation that motorized travel be restricted to designated roads and routes in priority sage-grouse habitat.

Roads and routes are also the primary vectors by which human impacts are dispersed over the landscape. Most human impacts harmful to ecosystems are contingent on access, even where these impacts occur away from the roadbed. Human activity and associated impacts on or near roads disturb and displace a wide range of wildlife species, especially those that are hunted or are on mating grounds or nesting (Bowles 1995). New power lines, pipelines, and even railroad tracks are often constructed alongside these roads, further reducing and fragmenting habitat (Weller 2002).

More generally, roads are associated with negative effects on biotic integrity in both terrestrial and aquatic ecosystems, and that these effects include wildlife mortality from road construction, mortality from collision with vehicles, modification of animal behavior, alteration of the physical environment, alteration of the chemical environment, spread of exotic weeds, and increased use of areas by humans. (Trombulak and Frissell (2000, and The Wilderness Society 2014). Roads have abiotic effects as well (WildEarth Guardians 2020 and references therein). For example, roads almost always lead to accelerated erosion (Burroughs and King 1989). And there is a growing body of science that shows that fires can be more prevalent in areas with higher road density; wildland fire ignition is much more likely to occur in a roaded area than in a roadless area (USDA 2000, Morrison 2007; Hann 1997, TWS 2000). Roadbeds and associated construction disturb or remove native vegetation and act as vectors for non-native exotic plants. Furthermore, vehicles create seedbeds for weeds and promote their dispersal.

In no circumstances should a new route be constructed within four miles of an active lek or in priority habitat (Wakkinen et al. 1992; Connelly et al. 2000; Holloran 2005, Holloran and Anderson 2005; Moynahan 2004). Additionally, all undesignated routes should be restored to their natural, pre-development state. When reseeding, BLM should use native seed and transplant sagebrush.

- Limit motorized and mechanized use to designated roads and routes, and seasonally close roads and routesto motorized and mechanized travel from March 1-July 15th in nesting and

[25] Routes refers to tracks and trails that are available for mechanized or motorized travel.

brood-rearing habitat, and in non-habitat within 3 miles of a lek; and from November 1 to March 15th in winter habitat. Seasonal closures within 3 miles of leks for the satellite populations are absolutely critical and non-negotiable. In the Gunnison Basin BLM should consider seasonal closures within 3 miles of leks in at least one alternative. If BLM determines seasonal closures within 3 miles of all leks in the Gunnison Basin is not feasible, BLM should consider applying this buffer to particularly important leks and consider other strategies to ensure that leks are provided with the maximum protection possible from disturbance during the season of use.

Motorized vehicles that travel off road (ORVs) pose risks to sage-grouse and their habitat (SGNTT 2011, Knick et al. 2011). In addition to noise impacts, ORVs are known to disturb soil, destroy vegetation, and spread invasive plants.

The ecological effects of ORVs, including impacts to wildlife and wildlife habitat, are well studied. One of the most comprehensive literature reviews on the topic was conducted by the USGS (Ouren et al. 2007 and references therein). Ouren et al. describe the primary effects of ORV activity on soils and overall watershed function including altered soil structure (soil compaction in particular), destruction of soil crusts (biotic and abiotic) and desert pavement (fine gravel surfaces) that would otherwise stabilize soils, and soil erosion. Ouren et al. (2007) also review the literature on ORV impacts to vegetation, in which soil compaction from ORVs affects plant growth by reducing moisture availability and precluding adequate taproot penetration to deeper soil horizons. Above-ground portions of plants also may be reduced through breakage or crushing, potentially leading to reductions in photosynthetic capacity, poor reproduction, and diminished litter cover. Likewise, blankets of fugitive dust raised by ORV traffic can disrupt photosynthetic processes, thereby suppressing plant growth and vigor, especially along OHV routes. In turn, reduced vegetation cover may permit invasive and/or non-native plants—particularly shallow-rooted annual grasses and early successional species capable of rapid establishment and growth—to spread and dominate the plant community (Ouren et al. 2007 and references therein).

Ouren et al. also reviewed the literature on ORV impacts to native wildlife, including habitat fragmentation and reduced habitat connectivity as ORV roads and trails proliferate across the landscape. Reduced habitat connectivity may disrupt plant and animal movement and dispersal, resulting in altered population dynamics and reduced potential for recolonization if a species is extirpated from a given habitat fragment. Wildlife is also directly affected by excessive noise (decibel levels/noise durations well above those of typical background noise) and other perturbations associated with ORV activities. Disturbance effects range from physiological impacts—including stress and mortality due to breakage of nest-supporting vegetation, collapsed burrows, inner ear bleeding, and vehicle-animal collisions—to altered behaviors and population distribution/dispersal patterns, which can lead to declines in local population size, survivorship, and productivity (Ouren et al. and references therein).

Lastly, ORVs create new routes and trails when they leave established roads. As BLM recognized in past NEPA analysis, "[e]ach year new trails are being created by a wide range of OHV users including, but not limited to, recreational users. Once a new trail becomes established it is considered by the public to be an existing route." (BLM 2015d at 3-340).

- Manage recreational uses as necessary so that they do not conflict with the conservation of GuSG and its habitat. Only issue special recreational permits if they have demonstrated neutral

or beneficial effects to priority habitat areas, and do not issue permits for activities within 4 miles of an active lek during breeding and nesting seasons. Restrict camping within 4 miles of leks in mating and nesting time periods.

While outdoor recreation provides wonderful benefits to those who engage in it, like other human activities, some forms of recreation can adversely impact sage grouse habitat (Joslin and Youmans 1999). Hence, it is vital to manage outdoor recreation, through the placement of facilities and infrastructure and the allowance of certain types of activities, to ensure that it does not unduly impact GuSG.

In addition, new opportunities for recreation tend to further increase demand. As the BLM Gunnison Field Office stated:

> "Human activities related to roads and trails have varying effects on wildlife species depending on many factors including the level of human use, the type of activities, habitats involved, time of day or season, and the species affected. Basically all activities related to roads and trails will have an effect on wildlife species. The widespread, detrimental impacts of human disturbance on wildlife are well documented in the literature. No positive benefits to wildlife have been identified from increases in travel management access. Direct and indirect effects on wildlife that have been identified in the literature indicate negative impacts on all studied species as motorized, mechanized, foot, and horse uses increase (Joslin and Youmans 1999; Wisdom et al. 2004; Kaseloo 2005; USFS 2008; Naylor et al. 2008; Francis et al. 2009). Loss of quality or quantity of habitat, disturbance or displacement of species, physiological reactions to stress, and exploitation of specific wildlife species are examples of general effects of human activities related to roads and trails on wildlife species." (BLM and US Forest Service 2010 at 112)

Consistent with recommendations in COT (USFWS 2013: 50), recreational facilities should not be constructed within 4 miles of a lek and should only be constructed if they help reduce impacts on sage grouse. Additionally, camping and other recreational pursuits should be seasonally prohibited within 4 miles of a lek during the breeding and nesting seasons.

Grazing

- Ensure that all grazing allotments have incorporated applicable rangeland health standards as a term and condition of the permit and are meeting or exceeding applicable rangeland health standards. If not, adjust allotment management plans until rangeland health standards are met and monitor allotments annually to assure that the utilization and grass height standards are being met.

Livestock grazing, "especially if done in a manner not consistent with local ecological conditions, … can reduce the suitability of breeding and brood-rearing habitat, negatively affecting sage-grouse populations." Threatened Status for Gunnison Sage-Grouse, 79 Fed. Reg. 69,192, 69,244 (Nov. 20, 2014) (Final Threatened Rule). Thus, livestock must be managed in such a way to allow for the healthy vegetative communities. *Id.* Yet hundreds of thousands of acres of GuSG habitat are not meeting the applicable rangeland health standards set by the 2005 Rangewide Conservation Plan (BLM 2005).

Despite this, livestock management within the GuSG's range has maintained a business-as-usual approach. Instead of automatically adjusting livestock management when rangeland health standards

are not being met, currently, livestock grazing will only be modified if the reason is "due in part or whole to current livestock grazing." *See* Gunnison Basin Candidate Conservation Agreement Programmatic Biological Assessment: Gunnison Sage-Grouse (Centerocercus minimus) at 54–57. I.e., if something other than livestock grazing is causing an allotment to not meet applicable standards—such as drought—grazing need not be adjusted.

However, as some stressors contributing to the failure to meet standards are outside of BLM's control—again, like drought—BLM must use the tools it has—like adjusting livestock management—to alleviate stressors on GuSG habitat. During drought periods specifically, BLM should prioritize evaluating the effects of drought in GuSG habitat as well as drought effects on ungrazed reference areas. This will inform how and when BLM should adjust livestock grazing in response to drought to protect GuSG and to ensure rangeland health standards are being achieved. It is important to note that, since there is a lag in vegetation recovery following drought (Thurow and Taylor 1999; Cagney et al. 2010), BLM must ensure that post-drought management allows for vegetation recovery that meets sage-grouse needs in sage-grouse habitat areas based on sage-grouse habitat objectives.

Although we do not advocate for specific modifications here, changes in season, timing, and or frequency of livestock use, AUM reductions, and distribution and intensity of livestock use could help meet sage-grouse habitat objectives and land health standards.

Numerous studies recommend reducing livestock utilization to support rangeland restoration objectives (Van Poolen and Lacey 1979; Holecheck et al. 1999), and stocking rates (rather than grazing systems) are the primary factor affecting rangeland production (Van Poolen and Lacey 1979; Holechek et al. 1998; Briske et al. 2008). For instance, many studies and agency sources demonstrate that best practices for maintaining functioning sage-grouse habitats include utilization levels that do not exceed 25 percent annually on occupied sage-grouse habitats, including uplands, meadows, flood plains and riparian habitat (BLM & USFS 1994, Galt et al. 2000, Braun 2006, Holecheck et al. 2010). A lower utilization rate is more likely to support sage-grouse habitat objectives for vegetation height, cover and diversity in sage-grouse seasonal habitats. Holechek et al. (2010), citing Gregg et al. (1994) and Sveum et al. (1998) noted that grazing must be kept at conservative levels (25 to 35 percent use) "for high nesting success by sage-grouse." Braun (2006, unpublished) similarly recommended limiting grazing use to 25–30 percent utilization in occupied sage-grouse habitat.

While definitions of light grazing use vary, numerous references have settled on a general 25 percent harvest coefficient for allocating forage for livestock (Troxel and White 1989; Lacey et al. 1994; NRCS 1997; White and McGinty 1997; Galt et al. 2000; Holechek et al. 2010). Although this rate is more conservative than others prescribed for light grazing, it allows both forage species and livestock to maximize their productivity, allows for error in forage production estimates, accounts for the potential effects of drought, and supports multiple use values (Holechek et al. 2010). Holechek et al. (2010) also noted that, because most ranchers have difficulty monitoring and measuring annual grazing utilization (and the BLM often does not regularly monitor and collect utilization information), use of grazing coefficients higher than 25 percent "invariably leads to land degradation . . . when drought occurs because of rancher reluctance [to reduce livestock numbers]." Limiting livestock grazing to 25 percent utilization would also support other sage-grouse habitat objectives, such as maintaining a minimum stubble height (see Holechek et al. 2010; Manier et al. 2013). A case study of the Antelope Springs

Allotment in southern Idaho demonstrates that ranching operations can be successful and improve sage-grouse habitat using a 20 percent utilization standard (Stuebner, Times-News, 12/29/13).

In addition, BLM could alter the timing of livestock grazing within ACECs to avoid the critical lekking, nesting, and brood rearing phases when GuSG are most vulnerable. This too would reduce stressors on GuSG during critical phases of development and help GuSG habitat recover. Regardless of what action BLM takes, BLM must take some action to address the stressors under its control whenever a given allotment is not meeting applicable standards.

- Develop and implement best management practices to reduce livestock's facilitation of the spread of invasive species.

Livestock grazing corresponds with increased cheatgrass occurrence and prevalence, regardless of variation in climate, topography, or plant community composition. Williamson et al. (2019). Invasive species, such as cheatgrass, in turn have been shown to be detrimental to GuSG. Final Threatened Rule, 79 Fed. Reg. at 69,251. Changes in vegetation composition and structure associated with invasive annual grasses may indirectly affect local Gunnison sage grouse populations by outcompeting native perennial plants after wildfires, reducing this important part of sage-grouse habitat. Pre-laying and nesting females selectively feed on herbaceous forage (e.g., Barnett and Crawford 1994), and broods initially feed almost entirely on a variety of native forbs and associated insects (Klebenow and Gray 1968; Drut et al. 1994; Gregg and Crawford 2009, Dumroese et al. 2015). Remington et al. (2021) comprehensively reviewed the existing literature documenting the negative correlation between increased incidence or abundance of cheatgrass and greater sage grouse microsite habitat selection (citing Lockyer et al. 2015); nest-site selection (citing Kirol et al., 2012); recruitment and annual survival (citing Blomberg et al. 2012); male sage-grouse lek attendance (citing Johnson et al.2011 and Blomberg et al. 2012); survival of adult males (citing Blomberg et al. 2012); and general habitat occupation (Arkle et al. 2014). In some of the above studies cited by Remington et al. that documented negative impacts of cheatgrass on GrSG, cheatgrass cover in the area studied was as low as 5% (Remington et al. 2021, and references therein).

The role of livestock grazing in leading to and/or exacerbating cheatgrass invasion has also been well studied. For example, Reisner et al. (2013, 2015) found that, even after controlling for other factors that may contribute to the spread of cheatgrass, there is a strong correlation between grazing effects and cheatgrass incursion. Cattle grazing increases cheatgrass dominance in sagebrush steppe by decreasing bunchgrass abundance, altering and limiting bunchgrass composition, increasing gaps between perennial plants, and trampling biological soil crusts (Knick et al. 2003; Reisner et al. 2013; Pyke et al. 2015; Chambers et al. 2017; Chambers et al. 2019). Bock et al. (2007) similarly found that livestock grazing facilitated the invasion of exotic grasses into native grasslands, such that the proportion of total grass cover consisting of exotics was 2.5-fold greater on grazed than on ungrazed areas, in a 22-year study. Their results demonstrated what many other researchers have found: that livestock grazing serves as an exogenous disturbance on the landscape that can favor exotics (Milchunas et al. 1988; Milchunas 2006; Bock et al. 2007). The latest research by Williamson et al. (2019) further supports these findings; it suggests a strong positive relationship between the presence and prevalence of cheatgrass and livestock grazing.

Reisner et al. (2013) found that, even after controlling for other factors that may contribute to the spread of cheatgrass, there is a strong correlation between grazing effects and cheatgrass incursion.

Cattle grazing increases cheatgrass dominance in sagebrush steppe by decreasing bunchgrass abundance, altering and limiting bunchgrass composition and coverage, increasing gaps between perennial plants, and trampling biological soil crusts. These annual grasses tended to fill vacant spaces among native perennial plants creating a continuous fuel for wildfires to burn and spread, especially in areas where perennial herbs had been depleted by inappropriate livestock grazing.

Livestock trampling can also reduce and fragment biological soil crust in sagebrush steppe, increasing the susceptibility of the landscape to invasion by Bromus and other weedy species in arid ecosystems. "Cheatgrass, however, may be less effective at invading areas with an intact biological soil crust. This notion is supported by field observations and growth chamber experiments that indicate that the presence of certain types of biological soil crusts decreases cheatgrass germination compared to bare soil. Damage to the soil crust by livestock hooves can lead to an increase in the number of safe sites in which annual grasses can emerge and establish. As summarized by Chambers et al. (2016a):

> Biological soil crusts, which are an important component of plant communities in warmer and drier sagebrush ecosystems, can reduce germination or establishment of cheatgrass (Eckert et al. 1986; Kaltenecker et al. 1999). Disturbances or management treatments that reduce abundance of native perennial grasses and biological soil crusts and increase the distances between these perennial grasses often are associated with higher resource availability and increased competitive ability of cheatgrass (Chambers et al. 2007; Reisner et al. 2013, 2015; Roundy et al. 2014).

Excessive grazing may eventually lead to reductions in perennial plants, increases in B. tectorum dominance, and ultimately result in the conversion of sagebrush steppe habitats to (annual) grasslands. Loeser et al. (2007: 87) found that high-intensity grazing had "strong directional effects that led to a decline in perennial forb cover and an increase in annual plants, particularly B. tectorum" in grasslands near Flagstaff, Arizona. In managing for "fire fuels" (including native plants), Chambers et al. (2016b: 294-295) cautioned that "any potential gains resulting from fine fuel removal by livestock may be counterbalanced by decreased resistance to B. tectorum due to herbivory of native plants that compete with B. tectorum, increased soil disturbance, and damage to biocrusts (Reisner et al. 2013)."

Lastly, multiple planning documents prepared as part of the National Greater Sage-Grouse Planning Strategy acknowledged that livestock grazing and "excessive grazing" can spread invasive plants (e.g., Buffalo DEIS 2013: 306; Bighorn Basin DEIS 2011, vol. 2: 4-146; Billings-Pompeys Pillar DEIS 2013: 3-88; Miles City DEIS 2013, vol. 1: 3-77; South Dakota DEIS, 2013: 361; Oregon DEIS 2013, vol. 1: 4-89). The draft Nevada/northeastern California plan observed that "[l]ivestock grazing is one of the vectors to introduce and or increase the spread of invasive weeds" and that "[m]ultiple factors can influence an area's susceptibility to cheatgrass invasion, including livestock grazing, perennial grass cover and biological soil crusts" (Nevada DEIS 2013: ch. 4, 54, citing Reisner et al. 2013). As such, BLM should consider, singly, or in combination, changes in season, timing, and or frequency of livestock use, AUM reductions, and distribution and intensity of livestock use as deemed appropriate to decrease the threat of cheatgrass within the GuSG's range.

- Prioritize grazing permits and associated allotment management plans for full environmental review, including an assessment of whether an allotment is meeting BLM

rangeland health standards, and subsequently monitor all allotments within designated ACECs.

Rangeland health standards represent a key means of measuring the degree to which allotments are being managed in a manner that facilitates GuSG health and recovery and failing to meet the standards undermines the chances for GuSG to avoid extinction and to recover. Final Threatened Rule, 79 Fed. Reg. at 69,244. Yet information on the extent to which allotments meet these standards is lacking and, where available, does not prompt management activities on allotments found not to be achieving the standards.

BLM (which also manages grazing on NPS lands) has failed to submit years' worth of annual reports to the FWS or conduct adequate monitoring. *See* Russell Japuntich, Background for not doing annual reporting on the Gunnison Basin Candidate Conservation Agreement for Gunnison Sage Grouse-2013 to 2015. As recently as 2020, the BLM still did not have adequate monitoring data to determine the condition of more than 25 percent of the allotments in the Gunnison Basin, and it now states that it will not finish incorporating the 2005 RCP/CCA requirements into existing grazing permits until 2025. See Letter Responding to Notice of Intent to Sue from Benjamin E. Gruber, Acting Deputy State Director, Resources, Bureau of Land Management and others (Dec. 11, 2020) (showing inadequate data for 10 of 37 allotments and stating that the Candidate Conservation Agreement's terms and conditions were still "in the process of being" incorporated into grazing permits in 2020, years after the Agreement's adoption) (NOI Response); *see also id.* (showing many allotments had monitoring "established" in 2020 and for others "[f]orb and grass heights have not been sufficiently monitored to determine if the allotment is meeting [herbaceous height objectives]. Monitoring will be established in 2020.").

Where monitoring has shown that allotments are not meeting the minimum 2005 RCP 3.9 inch grass height standard, BLM has often dismissed these failures as insignificant without taking action. See BLM Chart Detailing Plots with Average CCA Heights Below 4in/10.16cm) (May 7, 2021) (writing off plots within occupied habitat failing standards as "not in breeding habitat").

To remedy these failures, BLM must prioritize the assessment of whether an allotment is meeting BLM rangeland health standards. This assessment must be completed within a meaningful timeline and no later than three years from the adoption of the RMPA. Subsequently, BLM must routinely monitor all allotments within designated ACECs to determine whether they are meeting rangeland health standards, and must monitor an allotment no less frequently than once every three years.

- Facilitate the voluntary relinquishment of grazing permits and leases.

Voluntary grazing permit buy-outs in the ACECs are a market-based approach to easing grazing pressures on sage-grouse. They are a mechanism to establish and maintain sufficiently large areas free of livestock as reference areas to aid in describing ecological site potential and as a measure of the comparative effects of livestock grazing—and relief from livestock grazing—on sage-grouse populations.

- Establish large grazing exclosures or reference areas in representative habitats that are currently not being actively grazed to use as a baseline to measure sagebrush habitat health in the absence of grazing.

One of the key pieces of monitoring and research that is now largely absent on BLM lands is a suite of large, ungrazed ecological reference areas to use as benchmarks for assessing appropriate rangeland

health standards and what GuSG habitat may look like without the pressure of livestock grazing. Without large ungrazed reference areas to compare to, BLM is unable to assess the true effects of habitat restoration or vegetation treatments that are not confounded by livestock grazing returning too soon to the treatment site. If BLM does not examine through exclosures the consequences of livestock grazing on treatment sites, it will have little knowledge of the long-term consequences of the treatments themselves.

BLM should establish a suite of large ungrazed reference sites across the GuSG's habitat and the ACEC network that collectively represent the major habitat types, including 1 km stretches of riparian areas (Stacey et al. 2008). Establishing this network of representative ecological reference areas would be in line with calls from conservation biologists to establish a network of large-scale grazing exclosures throughout western North America (Bock et al. 1993).

It is important that the ungrazed ecological reference areas are large, at least 50 ha (Sarr 2002). Small exclosures often provide the last remaining source of lush forage, and are usually easily accessible to rodents, rabbit, and deer. Therefore, heavy use of small exclosures by native herbivores is common (Catlin et al. 2003).

One specific area that should remain closed to livestock grazing is the Tomichi allotment in the Gunnison Basin. BLM recently proposed re-opening the nearly 11,000-acre, vacant allotment occupied by Gunnison sage-grouse to grazing, even though that allotment had not been grazed since 2001, and even though it hosts some of the best Gunnison sage grouse habitat in the Basin. See Bureau of Land Management, Gunnison Field Officer, Letter to Interested Parties Regarding Applications for Grazing Permits on Several Allotments (Dec. 30, 2020) (Scoping notice proposing to open vacant Tomichi allotment to grazing).

Fire

- Following assuring the protection of life and property from wildfire, prioritize fire suppression to conserve GuSG habitat in the ACECs. Develop fire response plans so that equipment and personnel can be readily mobilized, and unnecessary surface disturbance is avoided.

Wildfire poses a significant risk to GuSG and its habitat—all the more since the remaining GuSG population is heavily concentrated within a relatively limited range within the Gunnison Basin. Along with the increased threat of fire, there has also been greatly expanding occurrence of exotic annuals, especially cheatgrass (Remington et al. 2021, and references therein), and, as outlined above, these two phenomena go hand in hand.

Fires, prescribed and natural, have long-term effects (>10 yr.) and sage-grouse may continue to avoid burned areas even after sagebrush has recovered (Nelle et al. 2000). While small, infrequent fires can maintain a mosaic of successional habitats that benefit sage-grouse, ecological modeling indicates that frequent, large fires in sagebrush steppe can lead to lek abandonment and with too many, very large fires, may even lead to extirpation of the species in some areas (Aldridge et al. 2008).

In recent decades a combination of fire and the spread of highly flammable nonnative plants has drastically altered the natural fire regime throughout much of the sagebrush steppe (Jones 2019, and references therein) especially in the western part of the range. Wildfires now burn larger, hotter, and

more frequently in affected lower elevation (i.e., Wyoming big sagebrush) habitats. Burned areas are often vulnerable to reinvasion by cheatgrass, which can completely occupy a burned site (Brooks et al. 2004, Chambers et al. 2017). Moreover, future habitat loss and fragmentation from a daunting interaction of fire, climate change and ever-increasing exotic annuals is likely to accelerate (Remington et al. 2021). Stemming this trend will require effective fire suppression measures in the new ACEC network.

Protection & Restoration of GuSG Habitat

- Manage or restore the portions of the ACEC area that were historically sagebrush, so that on average at least 70% of the land cover is sagebrush steppe sufficient to support sage-grouse.

In order to address the historic loss of GuSG habitat, and the continuing impacts it has on the species, BLM should manage or restore the ACEC area so that on average at least 70 percent of the land cover is sagebrush steppe sufficient to support sage-grouse (SGNTT 2011: 6, citing Aldridge et al. 2008; Doherty et al. 2010; Wisdom et al. 2011; also SGNTT 2011: 7; Karl and Sadowski 2005; Doherty et al. 2008; Connelly et al. 2000: 977, Table 3; Knick et al. 2013: 5-6). Efforts should focus on maintaining larger areas of habitat to address the effects of habitat fragmentation. Furthermore, BLM should seek to restore habitat linkages between satellite populations.

- Prioritize protection and restoration of riparian and wetland areas and wet meadows.

BLM should prioritize protection and restoration of riparian and wetland areas and wet meadows, particularly those that provide brood-rearing habitat or water sources for GuSG. Healthy riparian and wetland areas and wet meadows can provide important brood-rearing habitat and water sources for Gunnison sage-grouse. GuSG brood rearing habitat and water sources may be particularly at risk under climate change scenarios (Neely et al. 2015).

- Use best practices for ecological restoration of degraded lands including using only genetically appropriate native seeds and plants. Monitor and continue restoration activities as needed until project objectives are met and at least for three years. Livestock grazing should be excluded from restored or rehabilitated areas until woody and herbaceous plants achieve sage-grouse habitat objectives. Develop revegetation plans so that native seed supplies are developed and available when needed.

BLM must ensure that vegetation treatments create landscape patterns that benefit sage-grouse. BLM should only allow treatments that are demonstrated to benefit sage-grouse and retain sagebrush height and cover consistent with sage-grouse habitat objectives. Any vegetation treatment plan must include pretreatment data on wildlife and habitat condition, establish non-grazing enclosures, and include long-term monitoring where treated areas are monitored for at least three years before grazing returns. Monitoring should then be continued for five years after livestock are returned to the area, and compared to treated, ungrazed exclosures, as well as untreated areas. In all instances, BLM should prohibit the use of insecticides and herbicides within 1 mile of any active lek.

It is vital that BLM use genetically appropriate native seeds and plants in any rehabilitation and restoration activities within ACECs (Society for Ecological Restoration 2020; National Academy of Sciences 2020) and avoid using non-native plants or cultivars. Per Manual 1740 and Handbook H1740-2, field offices should use locally adapted native plant materials unless they can demonstrate a compelling

ecological need for using non-native plant materials. Field offices are encouraged to proactively consider native plant material needs and initiate strategies to meet them. Yet, BLM field managers often continue to use non-native plant materials or cultivars in their restoration and vegetation treatments even though doing so can undermine the long-term genetic integrity of native vegetation and ecosystems.

Unlike a few decades ago, BLM is now more able to acquire and develop genetically appropriate native seed for its restoration projects. BLM is committed to a private/public partnership effort called the National Seed Strategy designed to ensure the use of the 'right plant in the right place at the right time." And BLM just received targeted funding to implement the National Seed Strategy and vegetation planning. To ensure adequate native plant materials for sage-grouse habitat restoration work, BLM must engage in proactive seed and plant material planning as part of its sage grouse work and adopt best practices for propagation. Saher et al. 2020. Through proactive planning and financial contributions to native plant material development, BLM can acquire the native plant materials it needs when it needs it for restoration and rehabilitation in the ACECs.

- To maximize protection, ACECs should remain in public ownership with the possible exception of land exchanges that allow for additional or more-contiguous federal ownership patterns within the priority sage-grouse habitat area. The agency should also seek to acquire state and private lands adjacent to designated ACECs with intact subsurface mineral estate by donation, purchase, or exchange in order to best conserve, enhance or restore sage-grouse habitat.

The USFWS Recovery Implementation Strategy identifies acquiring and protecting private lands in collaboration with federal and other partners, as an important conservation strategy for GuSG, and recommends prioritizing acquisition of lands adjacent to public lands that contain moderate to high quality GuSG habitat (USFWS 2020b).

X. CONCLUSION

For the foregoing reasons, we urge BLM to adopt the above suite of management prescriptions and to establish the proposed ACECs. We have provided a list of supporting references below. We will follow up with a supplemental letter that shares copies of the cited references. Additionally, if you have any difficulty downloading the shape files for the proposed ACEC boundaries, please reach out to us so we can work together to resolve the situation.

Cited References

Aldridge, C.L., Nielsen, S.E., Beyer, H.L., Boyce, M.S., Connelly, J.W., Knick, S.T., Schroeder, M.A. 2008. Range-wide patterns of greater sage-grouse persistence. Diversity and Distributions. 14(6): 983–994.

Aldridge, C.L., D.J. Saher, T.M. Childers, K.E. Stahlnecker, and Z.H. Bowen. 2012. Crucial nesting habitat for Gunnison sage-grouse: A spatially explicit hierarchical approach. J. Wildl. Manage. 76(2): 391-406.Arkle et al. 2014

Arkle, R.S., D.S. Pilliod, S.E Hanser, M.L. Brooks, J.C. Chambers, J.B. Grace, K.C. Knutson, D.A. Pyke, J.L. Welty and T.A. Wirth. 2014. Quantifying restoration effectiveness using multi-scale habitat models—Implications for sage grouse in the Great Basin. Ecosphere 5(3): 1–32.

Atamian, M.T., Sedinger, J. S., Heaton, J.S., Blomberg, E.J. 2010. Landscape-level assessment of brood rearing habitat for greater sage-grouse in Nevada

Barnett, J.K., and J.A. Crawford. 1994. Pre-laying nutrition of sage grouse hens in Oregon: Journal of Range Management 47 (2) 114–118.

Beck, J. L., K.P. Reese, J.W. Connelly and M.B. Lucia. 2006. Movements and survival of juvenile greater sage-grouse in southeastern Idaho. Wildl. Soc. Bull. 34(4): 1070-1078.

Blomberg, E.J., J.S. Sedinger, M.T. Atamian and D.V. Nonne. 2012. Characteristics of climate and landscape disturbance influence the dynamics of greater sage-grouse populations. Ecosphere 3(6), art. 55: 1–20.

Bock, C.E., J.H. Bock, J.H., L. Kennedy and Z.F. Jones. 2007. Spread of non-native grasses into grazed versus ungrazed desert grasslands. Journal of Arid Environments 71(2): 229-235.

Bowles, A.E. 1995. Responses of Wildlife to Noise. In: (R.L. Knight and K.J. Gutzwiller, eds.) Wildlife and Recreationists; Coexistence through Management and Research. Island Press.

Brooks, M. L., C. M. d'Antonio, D. M. Richardson, J. B. Grace, J. E. Keeley, J. M. DiTomaso, R. J. Hobbs, M. Pellant, D. Pyke. 2004. Effects of invasive alien plants on fire regimes. BioScience 54 (7): 677–688.Burroughs and King 1989

Briske, D. D., J.D. Derner, J.R. Brown, S.D. Fuhlendorf, W.R. Teague, K.M. Havstad, R.L. Gillen, A.J. Ash and W.D. Willms. 2008. Rotational grazing on rangelands: reconciliation of perception and experimental evidence. Range. Ecol. and Manage. 61(1): 3-17.

Braun, C. E. 2006. A Blueprint for Sage-grouse Conservation and Recovery. Unpublished report. Grouse, Inc. Tucson, AZ.

Bureau of Land Management, U.S. Forest Service (BLM & USFS). 1994. Rangeland Reform '94 Draft Environmental Impact Statement. U.S. Department of Interior, Bureau of Land Management; U.S. Department of Agriculture, Forest Service. Washington, DC. https://www.federalregister.gov/documents/1994/05/13/94-11364/draft-environmental-impact-statement-for-rangeland-reform-94-and-request-for-public-comment

Bureau of Land Management and U.S. Forest Service, *Final Environmental Impact Statement, Gunnison Basin Federal Lands Travel Management* (2010), at 112. Available at: http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5182985.pdf.

Bureau of Land Management (BLM). 2015d. Oregon Greater Sage-Grouse Approved Resource Management Plan Amendment. Prepared by US Department of the Interior Bureau of Land Management Oregon State Office.

Bureau of Land Management, 2005. Gunnison Sage-Grouse Rangewide Conservation Plan. April 2005.

PEER, BLM Rangeland Health Status (2020) - The Significance of Livestock Grazing on Public Lands, BLM's allotment Land Health Standards (LHS) Assessment records (1997 – 2019); *available at* https://peer.org/wp-content/uploads/2022/03/State-Statistical-Summaries-3-7-2022.pdf.

Burroughs, E.R. and. J. G. King. 1989. Reduction of Soil. Erosion on Forest. Roads. USDA Forest Service Intermountain Research Station General Technical Report INT-264.

Cagney, J., Bainter, E., Budd, B., Christiansesn, T., Herren, V., Holloran, M., Rashford, B., Smith, M. Williams, J., Grazing Influence, Objective Development, and Management in Wyoming's Greater Sage-Grouse Habitat *With an Emphasis on Nesting and Early Brood Rearing* (Mar. 2010).

Chambers, J. C., Beck, J. L., Campbell, S., Carlson, J., Christiansen, T. J., Clause, K. J., Dinkins, J. B., Doherty, K. E., Griffin, K. A., Havlina, D. W., Henke, K. F., Hennig, J. D., Kurth, L. L., Maestas, J. D., Manning, M., Mayer, K. E., Mealor, B. A., McCarthy, C., Perea, M. A., and Pyke, D.A. 2016a. Using Resilience and Resistance Concepts to Manage Threats to Sagebrush Ecosystems, Gunnison Sage-grouse, and Greater Sage-grouse in their Eastern Range: A Strategic Multi-scale Approach. Gen. Tech. Rep. RMRS-GTR-356. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. Fort Collins, CO.

Chambers, J. C., Germino, M. J., Belnap, J., Brown, C. S., Schupp, E. W., Clair, S. B. S. 2016b. Plant community resistance to invasion by Bromus species: the roles of community attributes, Bromus interactions with plant communities, and Bromus traits. Pages 275-304 in Exotic Brome-grasses in Arid and Semiarid Ecosystems of the Western US. Springer Series on Environmental Management. https://doi.org/10.1007/978-3-319-24930-8

Jeanne C. Chambers, Jeremy D. Maestas, David A. Pyke, Chad S. Boyd, Mike Pellant, Amarina Wuenschel. Using Resilience and Resistance Concepts to Manage Persistent Threats to Sagebrush Ecosystems and Greater Sage-grouse, Rangeland Ecology & Management, Volume 70, Issue 2, 2017, Pages 149-164 Chambers, J.C., M.L. Brooks, M J. Germino, J D. Maestas, D.I. Board, M.O. Jones, B.W. Allred. 2019. Operationalizing resilience and resistance concepts to address invasive grass-fire cycles. Frontiers Ecol. & Evol. 7(185).

Connelly, J. W., M. A. Schroeder, A. R. Sands and C. E. Braun. 2000. Guidelines to manage sage-grouse populations and their habitats. Wildl. Soc'y Bull. 28(4): 967-985.

Connelly, J. W., S. T. Knick, M. A. Schroeder, S. J. Stiver. 2004. Conservation assessment of Greater Sage-grouse and sagebrush habitats. Western Association of Fish and Wildlife Agencies. Cheyenne, WY. (July 22, 2004).

Colorado Parks and Wildlife (August 2022). Gunnison Sage-grouse monitoring data.

(COT) Conservation Objectives Team, Abele, S., Budd, R., Budeau, D., Connelly, J., Deibert, P.A., Delevan, J., Espinosa, S., Gardner, S.C., Griffin, K., Harja, J., Northrup, R., Robinson, A., Schroeder, M., and Souza, P, 2013, Sage-grouse conservation objectives report: Denver, Colo., U.S. Fish and Wildlife Service, 62 p., appendix, available at http://www.fws.gov/mountain-prairie/species/birds/sagegrouse/.

Doherty, K.E., Naugle, D.E., Walker, B.L., Graham, J.M., Greater Sage-Grouse Winter Habitat Selection and Energy Development, The Journal of Wildlife Management, Vol. 71, Issue 1, p. 187–195.

Doherty, K.E., J.D. Tack, J.S. Evans, J.SN. and D.E. Naugle. 2010. Mapping breeding densities of greater sage-grouse: a tool for range-wide conservation planning. BLM completion report: Agreement # L10PG00911.

Dumroese, R.K., T. Luna, B.A. Richardson, F.F. Kilkenny, J.B. Runyon. 2015. Conserving and restoring habitat for greater sage-grouse and other sagebrush-obligate wildlife: the crucial link of forbs and sagebrush diversity. Native Plants J. 16: 277–299.

Feller, J. M. 1996. The Comb Wash Case: The Rule of Law Comes to the Public Rangelands. Public Land & Resources Law Review (17): 25-55.

Galt, D., F. Molinar, J. Navarro, J. Joseph, and J. Holechek. 2000. Grazing capacity and stocking rate. Rangelands 22(6):7-11.

Gamo, R.S. and J.L. Beck. 2017. Effectiveness of Wyoming's Sage-Grouse Core Areas: Influences on Energy Development and Make Lek Attendance. Environmental Management 59:189-203.

Gibson, Daniel, et al. "Effects of power lines on habitat use and demography of greater sage-grouse (Centrocercus urophasianus)." *Wildlife Monographs* 200.1 (2018): 1-41.

Green, A.W., C.L. Aldridge and M.S. O'Donnell. 2017. Investigating impacts of oil and gas development on greater sage-grouse. J. Wildl. Manage. 81:46–57.

Gregg, M.A., J.A. Crawford, M.S. Drut and A.K. DeLong. 1994. Vegetational cover and predation of sage grouse nests in Oregon. J. Wildl. Manage. 58:162-166

Gregg, M.A., and J.A. Crawford. 2009. Survival of greater sage grouse chicks and broods in the northern Great Basin: The Journal of Wildlife Management 73: 904–913.

Gunnison Sage-Grouse Rangewide Draft Resource Management Plan Amendment/Draft Environmental Impact Statement. August 2016.

Hagen, C.A., J.W. Connelly and M.A. Schroeder. 2007. A meta-analysis of greater sage-grouse Centrocercus urophasianus nesting and brood-rearing habitats. Wildlife Biology 13:42–50.

Hann, W.J. 1997. An Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins: Volume II, Ch. 3, p. 882

Holechek, J.L., H. de Souza Gomes, F. Molinar and D. Galt. 1998. Grazing intensity: critique and approach. Rangelands 20(5): 15-18.

Holechek, J. L., H. Gomez, F. Molinar, and D. Galt. 1999. Grazing studies: what we've learned. Rangelands 21(2): 12-16.

Holechek, J.L., R.D. Pieper, C.H. Herbel. 2010. Range Management: Principles and Practices. 6th ed. Prentice-Hall. Upper Saddle River, NJ.

Holloran, M. J. 2005. Greater sage-grouse (Centrocercus urophasianus) population response to natural gas field development in western Wyoming. PhD Dissertation. University of Wyoming. Laramie, Wyoming. Available online: https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.456.1998&rep=rep1&type=pdf

Holloran, M. J. and S. H. Anderson. 2005. Spatial distribution of Greater Sage-grouse nests in contiguous sagebrush habitats. Condor 107(4): 742-752.

Johnson, D. H., Holloran, M. J., Connelly, J. W., Hanser, S. E., Amundson, C. L., & Knick, S. T.(2011). Influences of environmental and anthropogenic featurs on greater sage-grouse populations, 1997–2007. In S. T. Knick, & J. W. Connelly (Eds.), *Greater sage-grouse: Ecology and conservation of a landscape species and its habitats* (pp. 407–450). Berkeley, CA: University of California Press

Joslin, G. and H. Youmans, coordinators. 1999. Effects of recreation on Rocky Mountain wildlife: A Review for Montana. Committee on Effects of Recreation on Wildlife, Montana Chapter of The Wildlife Society. 307pp.

Kaseloo, P. A., and K. O. Tyson. "Synthesis of noise effects on wildlife populations, On the road to stewardship." *International Conference on Ecology and Transportation 2005 Proceedings*. 2005.

Karl, M. and J. Sadowski. 2005. Assessing big sagebrush at multiple spatial scales: An example in southeast Oregon. Technical Note 417. BLM/ST/ST-05/001+4400. Bureau of Land Management, Denver, CO. 41 pp.

Klebenow, Donald A. "Livestock grazing interactions with sage grouse." *Wildlife-livestock relationships symposium: Proceedings*. Vol. 10. 1982.

Klebenow, D.A., and G.M. Gray. 1968. Food habits of juvenile sage grouse. Journal of Range Management 21 (2) 80–83.

Kirol, Christopher P., et al. "Microhabitat selection for nesting and brood-rearing by the greater sage-grouse in xeric big sagebrush." *The Condor* 114.1 (2012): 75-89.

Kirol, Christopher P., et al. "Greater Sage-Grouse response to the physical footprint of energy development." *The Journal of Wildlife Management* 84.5 (2020): 989-1001.

Knick, S. T., Dobkin, D. S., Rotenberry, J. T., Schroeder, M. A., Vander Haegen, W. M., Van Riper III, C. 2003. Teetering on the edge or too late? Conservation and research issues for avifauna of sagebrush habitats. The Condor 105(4): 611-634.

Knick, S. T., and J. W. Connelly (editors). 2011. Greater Sage-Grouse: ecology and conservation of a landscape species and its habitats. Studies in Avian Biology Series (vol. 38), University of California Press, Berkeley, CA.

Knick, S.T. and S.E. Hanser. 2011. Connecting pattern and process in greater sage-grouse populations and sagebrush landscapes. Pp. 383-405 in S. T. Knick and J. W. Connelly (editors). Greater Sage-Grouse: ecology and conservation of a landscape species and its habitats. Studies in Avian Biology (vol. 38), University of California Press, Berkeley, CA.

Knick, Steven T., Steven E. Hanser, and Kristine L. Preston. "Modeling ecological minimum requirements for distribution of greater sage-grouse leks: implications for population connectivity across their western range, USA." *Ecology and evolution* 3.6 (2013): 1539-1551.

Kolada, Eric J., Michael L. Casazza, and James S. Sedinger. "Ecological factors influencing nest survival of greater sage-grouse in Mono County, California." *The Journal of Wildlife Management* 73.8 (2009): 1341-1347.

Kohl M.T., T.A. Messmer, B.A. Crabb, M.R. Guttery, D.K. Dahlgren and R.T Larsen. 2019. The effects of electric power lines on the breeding ecology of greater sage-grouse. PLoS ONE 14(1): e0209968. Available online at: https://doi.org/10.1371/journal.pone.0209968.

Lacey, J., E. Williams, J. Rolleri and C. Marlow. 1994. A guide for planning, analyzing, and balancing forage supplies with livestock demand. Montana State Univ. Ext. Serv. Publ. E13–101. Bozeman, MT.

Lammers, W.M. and M.W. Collopy. 2007. Effectiveness of avian predator perch deterrents on electric transmission lines. J. Wildl. Manage. 71(8): 2752-2758.

Lockyer, Zachary B., et al. "Nest-site selection and reproductive success of greater sage-grouse in a fire-affected habitat of northwestern Nevada." *The Journal of Wildlife Management* 79.5 (2015): 785-797.

Loeser, Matthew RR, Thomas D. Sisk, and Timothy E. Crews. "Impact of grazing intensity during drought in an Arizona grassland." *Conservation Biology* 21.1 (2007): 87-97.

Manier, D.J., D.J.A. Wood, Z.H. Bowen, R.M. Donovan, M.J. Holloran, L.M. Juliusson, K.S. Mayne, S.J. Oyler-McCance, F.R. Quamen, D.J. Saher and A.J. Titolo. 2013. Summary of science, activities, programs, and policies that influence the rangewide conservation of greater sage-grouse (*Centrocercus urophasianus*). U.S. Geological Survey, Open-File Report 2013–1098; available at http://pubs.usgs.gov/of/2013/1098/.

Manier, D.J., Bowen, Z.H., Brooks, M.L., Casazza, M.L., Coates, P.S., Deibert, P.A., Hanser, S.E., and Johnson, D.H., 2014, Conservation buffer distance estimates for Greater Sage-Grouse—A review: U.S. Geological Survey Open-File Report 2014–1239, 14 p., http://dx.doi.org/10.3133/ofr20141239.

Milchunas, D.G., O.E. Sala and W. Lauenroth. 1988. A generalized model of the effects of grazing by large herbivores on grassland community structure. The American Naturalist 132(1): 87-106.

Milchunas, D. G. 2006. Responses of plant communities to grazing in the southwestern United States. US Department of Agriculture, Forest Service, Rocky Mountain Research Station.

Morrison, P.H. 2007. Roads and Wildfires. Pacific Biodiversity Institute, Winthrop, Washington. 40 p.

Moynahan, B. J. 2004. Landscape-scale factors affecting population dynamics of Greater Sage-grouse (Centrocercus urophasianus) in northcentral Montana, 2001-2004. PhD Diss. Univ. of Montana. Missoula, MT.

National Fish, Wildlife and Plants Climate Adaptation Partnership. 2012. National Fish, Wildlife and Plants Climate Adaptation Strategy. Association of Fish and Wildlife Agencies, Council on Environmental Quality, Great Lakes Indian Fish and Wildlife Commission, National Oceanic and Atmospheric Administration, and U.S. Fish and Wildlife Service. Washington, DC.

Naylor et al. 2008 Naylor, A.J., White, R.M. & Mougeot, F. (2005). Assessing the feasibility and acceptability of rear and release, trap and transfer and the use of dovecotes as management options for red grouse, Lagopus lagopus scoticus. Report to SNH and Scotland's Moorland Forum, Edinburgh.

Neely, Betsy & McCarthy, Patrick & Cross, Molly & Enquist, Carolyn & Garfin, Gregg & Gori, Dave & Hayward, Gregory & Schulz, Terri. (2010). Southwest Climate Change Initiative - Climate Change Adaptation Workshop for Natural Resource Managers in the Gunnison Basin: Summary.

Nelle, Pamela J., Kerry P. Reese, and John W. Connelly. "Long-term effects of fire on sage grouse habitat." *Rangeland Ecology & Management/Journal of Range Management Archives* 53.6 (2000): 586-591.

Nevada DEIS 2013: ch. 4, 54, citing Reisner et al. 2013

Ouren, Douglas S., et al. "Environmental effects of off-highway vehicles on Bureau of Land Management lands: A literature synthesis, annotated bibliographies, extensive bibliographies, and internet resources." *US Geological Survey, Open-File Report* 1353 (2007): 225.

Ouren, Douglas S., et al. "Are lek disturbance buffers equitable for all Gunnison sage-grouse populations?." *Journal of Fish and Wildlife Management* 10.1 (2019): 51-61.

Palmquist, K.A., Schlaepfer, D.R., Bradford, J.B. and Lauenroth, W.K. (2016), Mid-latitude shrub steppe plant communities: climate change consequences for soil water resources. Ecology, 97: 2342-2354. https://doi.org/10.1002/ecy.1457

Pyke, D.A., J.C. Chambers, M. Pellant, S.T. Knick, R.F. Miller, J.L. Beck, P.S. Doescher, E.W. Schupp, B.A. , Roundy, M. Brunson, J.D. McIver, J.D. 2015. Restoration Handbook for Sagebrush Steppe Ecosystems with Emphasis on Greater Sage-grouse Habitat—Part 1. Concepts for Understanding and Applying Restoration. U.S. Geological Survey Circular 1416. U.S. Geological Survey. Reston, VA.

Reisner, M.D., J.B. Grace, D.A. Pyke and P.S. Doescher. 2013. Conditions favoring Bromus tectorum dominance of endangered sagebrush steppe ecosystems. Journal of Applied Ecology 50(4): 1039-1049.

Reisner, M. D., Doescher, P. S., Pyke, D. A. 2015. Stress-gradient hypothesis explains susceptibility to Bromus tectorum invasion and community stability in North America's semi-arid Artemisia tridentata wyomingensis ecosystems. Journal of Vegetation Science 26(6): 1212-1224.

Remington, T.E., P.A. Deibert, S.E. Hanser, D.M Davis, L.A. Robb, L.A. and J.L. Welty. 2021. Sagebrush conservation strategy—Challenges to sagebrush conservation: U.S. Geological Survey Open-File Report 2020–1125, 327 p., https://doi.org/10.3133/ofr20201125.

Rondeau, R., K. Decker, J. Handwerk, J. Siemers, L. Grunau, and C. Pague. 2011. Th e state of Colorado's biodiversity. Prepared for Th e Nature Conservancy by the Colorado Natural Heritage Program, Colorado State University, Fort Collins, Colorado.

Sage-grouse National Technical Team (SGNTT). 2011. A Report on National Greater Sage-grouse Conservation Measures. Available online at: https://www.fws.gov/greatersagegrouse/documents/Reports/GrSG_NTT_Report.pdf

Saher et al. 2020 Saher, D. Joanne, et al. "Balancing model generality and specificity in management-focused habitat selection models for Gunnison sage-grouse." *Global Ecology and Conservation* 35 (2022): e01935.

Steenhof, K., M.N. Kochert and J.A. Roppe. 1993. Nesting by raptors and common ravens on electrical transmission line towers. J. Wildl. Manage. 57(2): 271-281.

Stuebner, Times-News, 12/29/13

Sveum, C.M., W.D. Edge and J.A. Crawford. 1998. Nesting habitat selection by sage grouse in south-central Washington. J. Range Manage. 51(3): 265-269.

Thurow, Thomas L., and Ch A. Taylor. "the role of drought in range management." *Rangeland Ecology & Management/Journal of Range Management Archives* 52.5 (1999): 413-419.

The Wilderness Society (TWS). 2000 Roads and Fire: a proven relationship. Fact Sheet. Special publication, The Wilderness Society. Denver. CO.

Trombulak, S. C. and C.A. Frissell. 2001. Review of Ecological Effects of Roads on Terrestrial and Aquatic Communities. Conservation Biology 14(1):18-26.

Troxel, T.R., and L.D. White. 1989. Balancing forage demand with forage supply. Texas A&M Univ. Res. Ext. Serv. Publ. B–1606. College Station, TX.

U.S. Department of Agriculture (USDA). 2000. Forest Service Roadless Area Conservation Rule Final Environmental Impact Statement, Ch. 3

U.S. Department of Agriculture-Natural Resources Conservation Service (NRCS). 1997. National range and pasture handbook. U.S. Department of Agriculture. Washington, DC.

U.S. Fish and Wildlife Service (USFWS). 2013. Greater Sage-grouse (*Centrocercus urophasianus*) Conservation Objectives: Final Report. U.S. Fish and Wildlife Service, Denver, CO. February 2013.

U.S. Fish and Wildlife Service 2014(a), Threatened Status for Gunnison Sage-Grouse, 79 Fed. Reg. 69,192 (Nov. 20, 2014) (Final Threatened Rule).

U.S. Fish and Wildlife Service 2014(b), Designation of Critical Habitat for Gunnison Sage-Grouse, 79 Fed. Reg. 69,312 (Nov. 20, 2014).

U.S. Fish and Wildlife Service 2010, 12-Month Findings for Petitions to List the Greater SageGrouse (Centrocercus urophasianus) as Threatened or Endangered, 75 Fed. Reg. 13,910 (Mar. 23 2010)

U.S. Fish and Wildlife Service. 2019. Species status assessment report for Gunnison sage-grouse (Centrocercus minimus). Version: April 20, 2019. Lakewood, Colorado.

U.S. Fish and Wildlife Service. 2020a. Final recovery plan for Gunnison sage-grouse (Centrocercus minimus). October 2020. U.S. Fish and Wildlife Service, Upper Colorado River Region, Lakewood, Colorado. 32 pages https://ecos.fws.gov/ecp0/profile/speciesProfile?sId=6040

U.S. Fish and Wildlife Service. 2020b. Recovery implementation strategy for Gunnison sage-grouse (Centrocercus minimus). September 2020. U.S. Fish and Wildlife Service, Upper Colorado Basin Region, Lakewood, Colorado. 75 pages.

Van Poolen, H.W., and J.R. Lacey. 1979. Herbage response to grazing systems and stocking intensities. J. Range Manage. 82(4): 250-253.

Wakkinen, Wayne L., Kerry P. Reese, and John W. Connelly. "Sage grouse nest locations in relation to leks." *The Journal of wildlife management* (1992): 381-383.

Weller, C. 2002. Fragmenting Our Lands: The Ecological Footprint From Oil And Gas Development. Special publication, The Wilderness Society.

Western Watersheds Project Story Map *Renew or Review* (2022) at https://mangomap.com/peer/data/blm_natl_grazing_allot_lhs2020.shp. Accessed August 16, 2022.

White, L.D. and A. McGinty. 1997. Stocking rate decisions: key to successful ranching. Texas A&M Univ. Res. Ext. Serv. Publ. B-5036. College Station, TX.

Williamson, M.A, E. Fleishman, R.C. MacNally, J.C. Chambers, B.A. Bradley, D.S. Dobkin, D.I Board, F.A. Fogarty, N. Horning, M. Leu and M.W. Zilig. 2019. Fire, livestock grazing, topography, and precipitation affect occurrence and prevalence of cheatgrass (Bromus tectorum) in the central Great Basin, USA. Biological Invasions (22) 663–680.

Wild Earth Guardians. 2020. The Environmental Consequences of Forest Roads and Achieving a Sustainable Road System. Special Publication, WEG. Santa Fe, NM.

Wisdom, Michael J., et al. "Effects of off-road recreation on mule deer and elk." *In: Transactions of the 69th North American Wildlife and Natural Resources Conference: 531-550*. 2004.

Wisdom, M.J., C.W. Meinke, S.T. Knick, and M.A. Schroeder. 2011. Factors associated with extirpation of sage-grouse. Studies in Avian Biology 38:451–472. https://www.fws.gov/southwest/es/documents/R2ES/LitCited/LPC_2012/Wisdom_et_al_2011.pdf.

Attachment 1

At-Risk Species and Natural Communities Present in Nominated ACECS

Gunnison Sage-Grouse Population	ACEC Acres	Overlap Acres	Value Name	Source	Date	Species Common Name	Nature Serve Global	NatureServe Colorado	FWS ESA Status	CPW Conservation Status	CO BLM Sensitive Species
Cerro Summit/Cimarron	11,947	39	Aquatic Native Species Conservation Waters CPW 2020	CPW	5/21/2020	Na	NA	NA	Not Listed		NA
Cerro Summit/Cimarron	11,947	253	Bald Eagle Roost Sites CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
Cerro Summit/Cimarron	11,947	949	Bald Eagle Winter Concentration CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
Cerro Summit/Cimarron	11,947	3,621	Bald Eagle Winter Forage CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
Cerro Summit/Cimarron	11,947	11,080	Bald Eagle Winter Range CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
Cerro Summit/Cimarron	11,947	0	Element Occurrence Clay-Loving Wild Buckwheat High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Clay-Loving Wild Buckwheat	G2	S2	Endangered		
Cerro Summit/Cimarron	11,947	25	Element Occurrence Colorado Desert Parsley High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Colorado Desert Parsley	G2G3	S2S3	Not Listed		Yes
Cerro Summit/Cimarron	11,947	7	Element Occurrence Good-neighbor bladderpod High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Good-neighbor bladderpod	G2	S2			Yes
Cerro Summit/Cimarron	11,947	1,162	Element Occurrence Juniper Tumble Mustard High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Juniper Tumble Mustard	G2	S2	Not Listed		

Cerro Summit/Cimarron	11,947	48	Element Occurrence Rocky Mountain Thistle High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Rocky Mountain Thistle	G2G3	S2S3	Not Listed		
Crawford	39,879	94	Aquatic Native Species Conservation Waters CPW 2020	CPW	5/21/2020	Na	NA	NA	Not Listed		NA
Crawford	39,879	2,750	Bald Eagle Winter Concentration CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
Crawford	39,879	39,879	Bald Eagle Winter Forage CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
Crawford	39,879	39,879	Bald Eagle Winter Range CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
Crawford	39,879	901	Element Occurrence Black-Footed Ferret High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Black-Footed Ferret	G1	S1	Endangered	State Endangered	
Crawford	39,879	67	Element Occurrence Colorado Desert Parsley High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Colorado Desert Parsley	G2G3	S2S3	Not Listed		Yes
Crawford	39,879	74	Element Occurrence Eastwood Evening-Primrose High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Eastwood Evening-Primrose	G2	S1	Not Listed		Yes
Crawford	39,879	13	Element Occurrence Juniper Tumble Mustard High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Juniper Tumble Mustard	G2	S2	Not Listed		
Dove Creek	66,349	1,583	Aquatic Native Species Conservation Waters CPW 2020	CPW	5/21/2020	Na	NA	NA	Not Listed		NA
Dove Creek	66,349	1,480	Bald Eagle Roost Sites CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
Dove Creek	66,349	1,814	Bald Eagle Winter Concentration CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
Dove Creek	66,349	13,496	Bald Eagle Winter Forage CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes

Dove Creek	66,349	50,135	Bald Eagle Winter Range CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
Dove Creek	66,349	40	Columbian Sharp-tailed Grouse Winter Range CPW 2020	CPW	12/3/2020	Columbian Sharp-Tailed Grouse	G4	S2	Not Listed	State Special Concern	Yes
Dove Creek	66,349	1	Element Occurrence Cushion Bladderpod High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Cushion Bladderpod	G1	S1	Not Listed		Yes
Dove Creek	66,349	381	Element Occurrence Desert Spiny Lizard High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Desert Spiny Lizard	G5	S2	Not Listed		Yes
Dove Creek	66,349	23	Element Occurrence Lone Mesa Snakeweed High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Lone Mesa Snakeweed	G1	S1	Not Listed		Yes
Dove Creek	66,349	0	Element Occurrence Parish's Alkali Grass High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Parish's Alkali Grass	G2G3	S1	Not Listed		
Dove Creek	66,349	8	Element Occurrence Skunkbrush Riparian Shrubland Community High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Skunkbrush Riparian Shrubland Community	G5	S2			
Dove Creek	66,349	20	Element Occurrence Townsend's big-eared Bat High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Townsend's big-eared Bat	G4	S2	Not Listed	State Special Concern	Yes
Dove Creek	66,349	1	Element Occurrence Two-needle Pinyon - Utah Juniper / Needle-and-Thread Open Woodland High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Two-needle Pinyon - Utah Juniper / Needle-and-Thread Open Woodland Community	G2?	S2			

Dove Creek	66,349	8	Element Occurrence Westwater Buckwheat High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Westwater Buckwheat	G3	S1	Not Listed		
Dove Creek	66,349	8,142	Peregrine Nesting Area CPW 2020	CPW	12/3/2020	American Peregrine Falcon	G4	S2B	Delisted due to Recovery	State Special Concern	Yes
Gunnison Basin	389,478	1,380	Aquatic Native Species Conservation Waters CPW 2020	CPW	5/21/2020	Na	NA	NA	Not Listed		NA
Gunnison Basin	389,478	3,542	Bald Eagle Roost Sites CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
Gunnison Basin	389,478	61,026	Bald Eagle Winter Concentration CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
Gunnison Basin	389,478	351,200	Bald Eagle Winter Forage CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
Gunnison Basin	389,478	359,619	Bald Eagle Winter Range CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
Gunnison Basin	389,478	1,881	Cutthroat Trout Designated Crucial Habitat CPW 2020	CPW	5/21/2020	Cutthroat Trout	G4	SNR	Not Listed	State Special Concern	
Gunnison Basin	389,478	247	Element Occurrence Colorado Wild Buckwheat High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Colorado Wild Buckwheat	G2	S2	Not Listed		Yes
Gunnison Basin	389,478	1,471	Element Occurrence Dwarf Shrew High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Dwarf Shrew	G4	S2	Not Listed		
Gunnison Basin	389,478	87	Element Occurrence Geyer's Willow/Beaked Sedge High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Geyer's Willow/Beaked Sedge Community	G5	S2			
Gunnison Basin	389,478	2,015	Element Occurrence Gunnison Milkvetch High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Gunnison Milkvetch	G2G3	S2S3	Not Listed		Yes

Gunnison Basin	389,478	1,241	Element Occurrence Juniper Tumble Mustard High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Juniper Tumble Mustard	G2	S2	Not Listed		
Gunnison Basin	389,478	478	Element Occurrence Montane Grasslands High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Montane Grasslands Community	G3	S2			
Gunnison Basin	389,478	94	Element Occurrence Montane Riparian Forest High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Montane Riparian Forest Community	G4	S2			
Gunnison Basin	389,478	37	Element Occurrence Montane Riparian Shrubland Community High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Montane Riparian Shrubland Community	G5	S2S3			
Gunnison Basin	389,478	10	Element Occurrence Narrowleaf Cottonwood Riparian Forests High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Narrowleaf Cottonwood Riparian Forests Community	G2?	S2			
Gunnison Basin	389,478	21	Element Occurrence Narrowleaf Cottonwood/Mixed Willows Montane Riparian Forest High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Narrowleaf Cottonwood/Mixed Willows Montane Riparian Forest Community	G3	S2			
Gunnison Basin	389,478	1	Element Occurrence Rocky Mountain Thistle High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Rocky Mountain Thistle	G2G3	S2S3	Not Listed		
Gunnison Basin	389,478	2,638	Element Occurrence Rollins' Twinpod High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Rollins' Twinpod	G1	S1	Not Listed		

Gunnison Basin	389,478	309	Element Occurrence Skiff Milkvetch High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Skiff Milkvetch	G1	S1	Candidate		Yes
Gunnison Basin	389,478	2	Element Occurrence Violet Milkvetch High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Violet Milkvetch	G2	S1	Not Listed		
Pinon Mesa	147,983	839	Aquatic Native Species Conservation Waters CPW 2020	CPW	5/21/2020	Na	NA	NA	Not Listed		NA
Pinon Mesa	147,983	468	Bald Eagle Winter Forage CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
Pinon Mesa	147,983	12,867	Bald Eagle Winter Range CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
Pinon Mesa	147,983	16	Element Occurrence American Peregrine Falcon High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	American Peregrine Falcon	G4	S2B	Delisted due to Recovery	State Special Concern	Yes
Pinon Mesa	147,983	3	Element Occurrence Artemisia tridentata ssp. vaseyana / Hesperostipa comata Shrubland High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Artemisia tridentata ssp. vaseyana / Hesperostipa comata Shrubland Community	GNR	S1			
Pinon Mesa	147,983	7	Element Occurrence Foothills Riparian Shrubland High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Foothills Riparian Shrubland Community	G4Q	S2			
Pinon Mesa	147,983	198	Element Occurrence Fremonts Cottonwood Riparian Forests High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Fremonts Cottonwood Riparian Forests Community	G3	S1			

Pinon Mesa	147,983	1,602	Element Occurrence Great Basin Pocket Mouse High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Great Basin Pocket Mouse	G5	S1	Not Listed		
Pinon Mesa	147,983	11	Element Occurrence Lower Montane Riparian Shrublands High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Lower Montane Riparian Shrublands Community	G3	S1			
Pinon Mesa	147,983	59	Element Occurrence Mesic Western Slope Pinyon-Juniper Woodlands High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Mesic Western Slope Pinyon-Juniper Woodlands Community	G3	S2			
Pinon Mesa	147,983	515	Element Occurrence Mixed Mountain Shrubland High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Mixed Mountain Shrubland Community	G3G5	S2			
Pinon Mesa	147,983	219	Element Occurrence Mixed Mountain Shrublands High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Mixed Mountain Shrublands Community	GU	S1			
Pinon Mesa	147,983	16	Element Occurrence Montane Riparian Forest High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Montane Riparian Forest Community	G4	S2			
Pinon Mesa	147,983	62	Element Occurrence Montane Shrublands High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Montane Shrublands Community	G3	S1			
Pinon Mesa	147,983	545	Element Occurrence Rhesus Skipper High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Rhesus Skipper	G4	S2S3			

Pinon Mesa	147,983	41	Element Occurrence Riparian Woodland High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Riparian Woodland Community	G4	S2			
Pinon Mesa	147,983	92	Element Occurrence Rothrock Townsend-Daisy High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Rothrock Townsend-Daisy	G2G3	S2S3	Not Listed		
Pinon Mesa	147,983	29	Element Occurrence Western Mouse-Tail High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Western Mouse-Tail	G4?	S1?	Not Listed		
Poncha Pass	26,344	154	Aquatic Native Species Conservation Waters CPW 2020	CPW	5/21/2020	Na	NA	NA	Not Listed		NA
Poncha Pass	26,344	9,808	Bald Eagle Winter Range CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
Poncha Pass	26,344	30	Element Occurrence Montane Riparian Shrubland Community High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Montane Riparian Shrubland Community	G5	S2S3			
Poncha Pass	26,344	6	Element Occurrence Pale Blue-Eyed Grass High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Pale Blue-Eyed Grass	G3	S2	Not Listed		Yes
Poncha Pass	26,344	1,283	Element Occurrence Quercus gambelii / Hesperostipa comata Shrubland [Provisional] High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Quercus gambelii / Hesperostipa comata Shrubland [Provisional] Community	GU	S1			
San Miguel Basin	22,626	74	Aquatic Native Species Conservation Waters CPW 2020	CPW	5/21/2020	Na	NA	NA	Not Listed		NA
San Miguel Basin	22,626	223	Bald Eagle Summer Forage CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes

San Miguel Basin	22,626	223	Bald Eagle Winter Concentration CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
San Miguel Basin	22,626	245	Bald Eagle Winter Forage CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
San Miguel Basin	22,626	22,626	Bald Eagle Winter Range CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
San Miguel Basin	22,626	307	Element Occurrence Alkaline Pepperwort High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Alkaline Pepperwort	G2	S2	Not Listed		
San Miguel Basin	22,626	244	Element Occurrence Foothills Riparian Shrubland Community High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Foothills Riparian Shrubland Community	G5	S1			
San Miguel Basin	22,626	244	Element Occurrence Foothills Riparian Shrubland Community High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Foothills Riparian Shrubland Community	G4G5	S1			
San Miguel Basin	22,626	244	Element Occurrence Fremonts Cottonwood Riparian Forests High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Fremonts Cottonwood Riparian Forests Community	G3	S1			
San Miguel Basin	22,626	244	Element Occurrence Fremont's Cottonwood Riparian Forests High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Fremont's Cottonwood Riparian Forests Community	G2	S3			
San Miguel Basin	22,626	13	Element Occurrence Little Penstemon High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Little Penstemon	G3	S2	Not Listed		

San Miguel Basin	22,626	244	Element Occurrence Lower Montane Riparian Shrublands High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Lower Montane Riparian Shrublands Community	G3	S2			
San Miguel Basin	22,626	45	Element Occurrence Mesic Western Slope Pinyon-Juniper Woodlands High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Mesic Western Slope Pinyon-Juniper Woodlands Community	G3	S2			
San Miguel Basin	22,626	1	Element Occurrence Naturita Milkvetch High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Naturita Milkvetch	G2G3	S2S3	Not Listed		Yes
San Miguel Basin	22,626	211	Element Occurrence Paradox Breadroot High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Paradox Breadroot	G3	S2	Not Listed		Yes
San Miguel Basin	22,626	1,129	Element Occurrence Payson Lupine High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Payson Lupine	G2	S2	Not Listed		Yes
San Miguel Basin	22,626	0	Element Occurrence San Juan Gilia High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	San Juan Gilia	G3	S2	Not Listed		
San Miguel Basin	22,626	22	Element Occurrence Shortgrass Prairie High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Shortgrass Prairie Community	G2G4	S2			
San Miguel Basin	22,626	31	Element Occurrence Shortgrass Prairie High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Shortgrass Prairie Community	G3G4	S1			
San Miguel Basin	22,626	271	Element Occurrence Skunkbrush Riparian Shrubland Community High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Skunkbrush Riparian Shrubland Community	G5	S2			

San Miguel Basin	22,626	579	Element Occurrence Western Slope Grasslands Community High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Western Slope Grasslands Community	G5	S2			
San Miguel Basin	22,626	11	Element Occurrence White-throated Woodrat Subsp High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	White-throated Woodrat Subsp	G5	S1			
San Miguel Basin: Beaver Mesa/Gurley Reservoir	6,210	47	Aquatic Native Species Conservation Waters CPW 2020	CPW	5/21/2020	Na	NA	NA	Not Listed		NA
San Miguel Basin: Beaver Mesa/Gurley Reservoir	6,210	5,053	Bald Eagle Winter Range CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
San Miguel Basin: Dry Creek	79,006	414	Bald Eagle Roost Sites CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
San Miguel Basin: Dry Creek	79,006	86	Bald Eagle Winter Forage CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
San Miguel Basin: Dry Creek	79,006	79,006	Bald Eagle Winter Range CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
San Miguel Basin: Dry Creek	79,006	1	Element Occurrence Acarospora Nodulosa Var. Nodulosa Lichen High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Acarospora Nodulosa Var. Nodulosa Lichen	G5	S1	Not Listed		
San Miguel Basin: Dry Creek	79,006	1	Element Occurrence Gypsoplaca Macrophylla Lichen High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Gypsoplaca Macrophylla Lichen	G3G4	S1	Not Listed		
San Miguel Basin: Dry Creek	79,006	313	Element Occurrence Gypsum Valley cat-eye High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Gypsum Valley cat-eye	G2	S2			Yes

San Miguel Basin: Dry Creek	79,006	1	Element Occurrence Lecanora Gypsicola Lichen High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Lecanora Gypsicola Lichen	G1	S1	Not Listed		
San Miguel Basin: Dry Creek	79,006	8	Element Occurrence Little Penstemon High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Little Penstemon	G3	S2	Not Listed		
San Miguel Basin: Dry Creek	79,006	1	Element Occurrence Naturita Milkvetch High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Naturita Milkvetch	G2G3	S2S3	Not Listed		Yes
San Miguel Basin: Dry Creek	79,006	2	Element Occurrence Pygmy Sagebrush High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Pygmy Sagebrush	G4	S1	Not Listed		
San Miguel Basin: Iron Springs	1,933	1,933	Bald Eagle Winter Range CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
San Miguel Basin: Miramonte	455	24	Aquatic Native Species Conservation Waters CPW 2020	CPW	5/21/2020	Na	NA	NA	Not Listed		NA
San Miguel Basin: Miramonte	455	299	Bald Eagle Winter Range CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
San Miguel Basin: Miramonte	455	3	Element Occurrence Parish's Alkali Grass High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Parish's Alkali Grass	G2G3	S1	Not Listed		
Sims Mesa	10,818	3,152	Bald Eagle Winter Forage CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
Sims Mesa	10,818	10,818	Bald Eagle Winter Range CPW 2020	CPW	12/3/2020	Bald Eagle	G5	S1B,S3N	Delisted due to Recovery	State Special Concern	Yes
Sims Mesa	10,818	7	Element Occurrence Gray Vireo High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Gray Vireo	G4	S2B	Not Listed		
Sims Mesa	10,818	72	Element Occurrence Sagebrush Bottomland Shrublands High Precision Public Land (L1) CNHP 2017	CNHP	6/7/2017	Sagebrush Bottomland Shrublands Community	G3?	S1			

Sensitive Habitat for Big Game in Nominated ACECs

Gunnison Sage-Grouse Population	ACEC Acres	Overlap Acres	Value Name	Source	Date
Cerro Summit/Cimarron	11,947	2,339	Elk Migration Corridors CPW 2020	CPW	12/3/2020
Cerro Summit/Cimarron	11,947	28	Elk Migration Patterns CPW 2020	CPW	12/3/2020
Cerro Summit/Cimarron	11,947	312	Elk Production Area CPW 2020	CPW	12/3/2020
Cerro Summit/Cimarron	11,947	5,804	Elk Severe Winter Range CPW 2020	CPW	12/3/2020
Cerro Summit/Cimarron	11,947	5,366	Elk Winter Concentration Area CPW 2020	CPW	12/3/2020
Cerro Summit/Cimarron	11,947	20	Mule Deer Migration Corridors CPW 2020	CPW	12/3/2020
Cerro Summit/Cimarron	11,947	10	Mule Deer Migration Patterns CPW 2020	CPW	12/3/2020
Cerro Summit/Cimarron	11,947	6,764	Mule Deer Severe Winter Range CPW 2020	CPW	12/3/2020
Cerro Summit/Cimarron	11,947	6,067	Mule Deer Winter Concentration CPW 2020	CPW	12/3/2020
Crawford	39,879	31,278	Elk Migration Corridors CPW 2020	CPW	12/3/2020
Crawford	39,879	692	Elk Migration Patterns CPW 2020	CPW	12/3/2020
Crawford	39,879	923	Elk Production Area CPW 2020	CPW	12/3/2020
Crawford	39,879	12,436	Elk Severe Winter Range CPW 2020	CPW	12/3/2020
Crawford	39,879	18,592	Elk Winter Concentration Area CPW 2020	CPW	12/3/2020
Crawford	39,879	218	Mule Deer Migration Patterns CPW 2020	CPW	12/3/2020
Crawford	39,879	15,540	Mule Deer Severe Winter Range CPW 2020	CPW	12/3/2020
Crawford	39,879	25,733	Mule Deer Winter Concentration CPW 2020	CPW	12/3/2020
Dove Creek	66,349	2,648	Bighorn Production Area CPW 2020	CPW	12/3/2020
Dove Creek	66,349	1,292	Bighorn Severe Winter Range CPW 2020	CPW	12/3/2020
Dove Creek	66,349	1,292	Bighorn Winter Concentration Area CPW 2020	CPW	12/3/2020
Dove Creek	66,349	47	Elk Migration Corridors CPW 2020	CPW	12/3/2020
Dove Creek	66,349	90	Elk Migration Patterns CPW 2020	CPW	12/3/2020
Dove Creek	66,349	8,168	Elk Production Area CPW 2020	CPW	12/3/2020
Dove Creek	66,349	14,987	Elk Severe Winter Range CPW 2020	CPW	12/3/2020
Dove Creek	66,349	29,981	Elk Winter Concentration Area CPW 2020	CPW	12/3/2020
Dove Creek	66,349	353	Mule Deer Migration Patterns CPW 2020	CPW	12/3/2020

Dove Creek	66,349	15,125	Mule Deer Severe Winter Range CPW 2020	CPW	12/3/2020
Dove Creek	66,349	27,238	Mule Deer Winter Concentration CPW 2020	CPW	12/3/2020
Gunnison Basin	389,478	11,938	Bighorn Migration Corridors CPW 2020	CPW	12/3/2020
Gunnison Basin	389,478	295	Bighorn Migration Patterns CPW 2020	CPW	12/3/2020
Gunnison Basin	389,478	9,352	Bighorn Production Area CPW 2020	CPW	12/3/2020
Gunnison Basin	389,478	6,274	Bighorn Severe Winter Range CPW 2020	CPW	12/3/2020
Gunnison Basin	389,478	5,987	Bighorn Summer Concentration Area CPW 2020	CPW	12/3/2020
Gunnison Basin	389,478	8,232	Bighorn Winter Concentration Area CPW 2020	CPW	12/3/2020
Gunnison Basin	389,478	200,856	Elk Migration Corridors CPW 2020	CPW	12/3/2020
Gunnison Basin	389,478	2,409	Elk Migration Patterns CPW 2020	CPW	12/3/2020
Gunnison Basin	389,478	19,576	Elk Production Area CPW 2020	CPW	12/3/2020
Gunnison Basin	389,478	202,259	Elk Severe Winter Range CPW 2020	CPW	12/3/2020
Gunnison Basin	389,478	227,954	Elk Winter Concentration Area CPW 2020	CPW	12/3/2020
Gunnison Basin	389,478	113,473	Mule Deer Migration Corridors CPW 2020	CPW	12/3/2020
Gunnison Basin	389,478	2,949	Mule Deer Migration Patterns CPW 2020	CPW	12/3/2020
Gunnison Basin	389,478	138,650	Mule Deer Severe Winter Range CPW 2020	CPW	12/3/2020
Gunnison Basin	389,478	270,110	Mule Deer Winter Concentration CPW 2020	CPW	12/3/2020
Gunnison Basin	389,478	30,726	Pronghorn Severe Winter Range CPW 2020	CPW	12/3/2020
Gunnison Basin	389,478	20,756	Pronghorn Winter Concentration CPW 2020	CPW	12/3/2020
Pinon Mesa	147,983	676	Bighorn Production Area CPW 2020	CPW	12/3/2020
Pinon Mesa	147,983	201	Bighorn Winter Concentration Area CPW 2020	CPW	12/3/2020
Pinon Mesa	147,983	4,640	Elk Migration Corridors CPW 2020	CPW	12/3/2020
Pinon Mesa	147,983	645	Elk Migration Patterns CPW 2020	CPW	12/3/2020
Pinon Mesa	147,983	5,670	Elk Production Area CPW 2020	CPW	12/3/2020
Pinon Mesa	147,983	18,201	Elk Severe Winter Range CPW 2020	CPW	12/3/2020
Pinon Mesa	147,983	17,825	Elk Winter Concentration Area CPW 2020	CPW	12/3/2020
Pinon Mesa	147,983	530	Mule Deer Migration Patterns CPW 2020	CPW	12/3/2020
Pinon Mesa	147,983	25,855	Mule Deer Severe Winter Range CPW 2020	CPW	12/3/2020
Pinon Mesa	147,983	31,098	Mule Deer Winter Concentration CPW 2020	CPW	12/3/2020
Poncha Pass	26,344	308	Elk Migration Corridors CPW 2020	CPW	12/3/2020
Poncha Pass	26,344	252	Elk Migration Patterns CPW 2020	CPW	12/3/2020
Poncha Pass	26,344	1,107	Elk Production Area CPW 2020	CPW	12/3/2020

Poncha Pass	26,344	7,833	Elk Severe Winter Range CPW 2020	CPW	12/3/2020
Poncha Pass	26,344	1,534	Elk Winter Concentration Area CPW 2020	CPW	12/3/2020
Poncha Pass	26,344	183	Mule Deer Migration Patterns CPW 2020	CPW	12/3/2020
Poncha Pass	26,344	2,979	Mule Deer Severe Winter Range CPW 2020	CPW	12/3/2020
Poncha Pass	26,344	1,392	Mule Deer Winter Concentration CPW 2020	CPW	12/3/2020
Poncha Pass	26,344	1,528	Pronghorn Migration Corridors CPW 2020	CPW	12/3/2020
Poncha Pass	26,344	366	Pronghorn Migration Patterns CPW 2020	CPW	12/3/2020
Poncha Pass	26,344	2,019	Pronghorn Severe Winter Range CPW 2020	CPW	12/3/2020
Poncha Pass	26,344	4,770	Pronghorn Winter Concentration CPW 2020	CPW	12/3/2020
San Miguel Basin	22,626	22,591	Elk Severe Winter Range CPW 2020	CPW	12/3/2020
San Miguel Basin	22,626	6,305	Elk Winter Concentration Area CPW 2020	CPW	12/3/2020
San Miguel Basin	22,626	12	Mule Deer Migration Patterns CPW 2020	CPW	12/3/2020
San Miguel Basin	22,626	22,396	Mule Deer Severe Winter Range CPW 2020	CPW	12/3/2020
San Miguel Basin	22,626	18,264	Mule Deer Winter Concentration CPW 2020	CPW	12/3/2020
San Miguel Basin: Beaver Mesa/Gurley Reservoir	6,210	24	Elk Migration Patterns CPW 2020	CPW	12/3/2020
San Miguel Basin: Beaver Mesa/Gurley Reservoir	6,210	1,802	Elk Severe Winter Range CPW 2020	CPW	12/3/2020
San Miguel Basin: Beaver Mesa/Gurley Reservoir	6,210	2,743	Elk Winter Concentration Area CPW 2020	CPW	12/3/2020
San Miguel Basin: Beaver Mesa/Gurley Reservoir	6,210	24	Mule Deer Migration Patterns CPW 2020	CPW	12/3/2020
San Miguel Basin: Dry Creek	79,006	6,839	Elk Migration Corridors CPW 2020	CPW	12/3/2020
San Miguel Basin: Dry Creek	79,006	86	Elk Migration Patterns CPW 2020	CPW	12/3/2020
San Miguel Basin: Dry Creek	79,006	73,402	Elk Severe Winter Range CPW 2020	CPW	12/3/2020
San Miguel Basin: Dry Creek	79,006	16,072	Elk Winter Concentration Area CPW 2020	CPW	12/3/2020
San Miguel Basin: Dry Creek	79,006	2,196	Mule Deer Migration Corridors CPW 2020	CPW	12/3/2020
San Miguel Basin: Dry Creek	79,006	59	Mule Deer Migration Patterns CPW 2020	CPW	12/3/2020
San Miguel Basin: Dry Creek	79,006	30,560	Mule Deer Severe Winter Range CPW 2020	CPW	12/3/2020
San Miguel Basin: Dry Creek	79,006	24,522	Mule Deer Winter Concentration CPW 2020	CPW	12/3/2020
San Miguel Basin: Dry Creek	79,006	50	Pronghorn Migration Patterns CPW 2020	CPW	12/3/2020
San Miguel Basin: Iron Springs	1,933	495	Elk Migration Corridors CPW 2020	CPW	12/3/2020
San Miguel Basin: Iron Springs	1,933	1,933	Elk Severe Winter Range CPW 2020	CPW	12/3/2020
San Miguel Basin: Iron Springs	1,933	1,141	Elk Winter Concentration Area CPW 2020	CPW	12/3/2020
San Miguel Basin: Iron Springs	1,933	1,276	Mule Deer Severe Winter Range CPW 2020	CPW	12/3/2020

San Miguel Basin: Miramonte	455	127	Elk Winter Concentration Area CPW 2020	CPW	12/3/2020
Sims Mesa	10,818	1,393	Elk Migration Corridors CPW 2020	CPW	12/3/2020
Sims Mesa	10,818	10,818	Elk Severe Winter Range CPW 2020	CPW	12/3/2020
Sims Mesa	10,818	4,670	Elk Winter Concentration Area CPW 2020	CPW	12/3/2020
Sims Mesa	10,818	1,489	Mule Deer Migration Corridors CPW 2020	CPW	12/3/2020
Sims Mesa	10,818	19	Mule Deer Migration Patterns CPW 2020	CPW	12/3/2020
Sims Mesa	10,818	6,604	Mule Deer Severe Winter Range CPW 2020	CPW	12/3/2020
Sims Mesa	10,818	8,368	Mule Deer Winter Concentration CPW 2020	CPW	12/3/2020

Colorado Natural Heritage Program Potential Conservation Areas & Lands with Wilderness Characteristics in Nominated ACECs

Gunnison Sage-Grouse Population	ACEC Acres	Overlap Acres	Rank Info	Value ID	Area Name
Cerro Summit/Cimarron	11,947	4	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Beaton Creek West (B4)	3/1/2018
Cerro Summit/Cimarron	11,947	42	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Bostwick Park (B3)	3/1/2018
Cerro Summit/Cimarron	11,947	2,181	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Cerro Summit (B3)	3/1/2018
Cerro Summit/Cimarron	11,947	133	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Morrow Point Reservoir (B3)	3/1/2018
Cerro Summit/Cimarron	11,947	156	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	Cedar Creek (B2)	3/1/2018
Cerro Summit/Cimarron	11,947	517	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	Cimarron (B2)	3/1/2018
Cerro Summit/Cimarron	11,947	419	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	Dry Cedar Creek (B2)	3/1/2018

Cerro Summit/Cimarron	11,947	140	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	Kinikin Road/Sunshine Road (B2)	3/1/2018
Crawford	39,879	164	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Crawford Mesa (B3)	3/1/2018
Crawford	39,879	367	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	Hotchkiss Hills (B2)	3/1/2018
Crawford	39,879	22,175	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	Red Canyon South (B2)	3/1/2018
Dove Creek	66,349	203	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Dolores Canyon South of Slick Rock (B4)	3/1/2018
Dove Creek	66,349	3,711	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Dove Creek (B3)	3/1/2018
Dove Creek	66,349	850	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Hawk Mine (B4)	3/1/2018
Dove Creek	66,349	1,519	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	Hovenweep (B2)	3/1/2018
Dove Creek	66,349	180	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	McIntyre Canyon (B2)	3/1/2018
Dove Creek	66,349	370	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	Plateau Creek (B1)	3/1/2018
Dove Creek	66,349	188	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	Slick Rock Hill (B2)	3/1/2018
Gunnison Basin	389,478	653	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Alder Creek (B4)	3/1/2018
Gunnison Basin	389,478	235	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Beaver Creek at Gunnison State Wildlife Area (B3)	3/1/2018
Gunnison Basin	389,478	244	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Blue Creek at Curecanti Needle (B3)	3/1/2018
Gunnison Basin	389,478	396	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	East Elk Creek at Blue Mesa Reservoir (B3)	3/1/2018
Gunnison Basin	389,478	677	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Gunnison River at Curecanti Needle (B4)	3/1/2018

Gunnison Basin	389,478	149	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Gunnison River at Neversink (B3)	3/1/2018
Gunnison Basin	389,478	1,328	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Lake Fork Gunnison River at Blue Mesa Reservoir (B3)	3/1/2018
Gunnison Basin	389,478	900	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Lake Fork of the Gunnison River (B3)	3/1/2018
Gunnison Basin	389,478	646	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Morrow Point Reservoir (B3)	3/1/2018
Gunnison Basin	389,478	74	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Pine Creek at Blue Mesa Reservoir (B3)	3/1/2018
Gunnison Basin	389,478	662	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Stevens Creek (B3)	3/1/2018
Gunnison Basin	389,478	705	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	West Antelope Creek (B3)	3/1/2018
Gunnison Basin	389,478	313,812	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	Gunnison Basin (B1)	3/1/2018
Gunnison Basin	389,478	21,071	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	South Beaver Creek (B1)	3/1/2018
Gunnison Basin	389,478	1,157	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	Wildcat Gulch (B2)	3/1/2018
Gunnison Basin	389,478	9,228	Lands with Wilderness Characteristics (LWC) BLM CO/TWS 2021	Indian Creek	8/30/2021
Gunnison Basin	389,478	40	Lands with Wilderness Characteristics (LWC) BLM CO/TWS 2021	Lower Big Buck Creek	8/30/2021
Gunnison Basin	389,478	7,353	Lands with Wilderness Characteristics (LWC) BLM CO/TWS 2021	South Beaver Creek	8/30/2021
Gunnison Basin	389,478	6,364	Lands with Wilderness Characteristics (LWC) BLM CO/TWS 2021	Stubbs Gulch	8/30/2021
Gunnison Basin	389,478	11,572	Lands with Wilderness Characteristics (LWC) BLM CO/TWS 2021	Sugar Creek	8/30/2021
Gunnison Basin	389,478	87	Lands with Wilderness Characteristics (LWC) BLM CO/TWS 2021	Upper Trout Creek	8/30/2021

Gunnison Basin	389,478	2,420	Lands with Wilderness Characteristics (LWC) BLM CO/TWS 2021	West Dempsey Gulch	8/30/2021
Gunnison Basin	389,478	3,919	Lands with Wilderness Characteristics (LWC) BLM CO/TWS 2021	West Fork Powderhorn	8/30/2021
Gunnison Basin	389,478	10,520	Lands with Wilderness Characteristics (LWC) BLM CO/TWS 2021	Cebolla Creek	8/30/2021
Gunnison Basin	389,478	334	Lands with Wilderness Characteristics (LWC) BLM CO/TWS 2021	Devils Creek	8/30/2021
Gunnison Basin	389,478	96	Lands with Wilderness Characteristics (LWC) BLM CO/TWS 2021	Fourth of July Creek North	8/30/2021
Gunnison Basin	389,478	39	Lands with Wilderness Characteristics (LWC) BLM CO/TWS 2021	Hells Canyon North	8/30/2021
Pinon Mesa	147,983	710	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Granite Creek (B3)	3/1/2018
Pinon Mesa	147,983	2,472	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Lower Little Dolores River (B4)	3/1/2018
Pinon Mesa	147,983	379	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Miracle Rock (B4)	3/1/2018
Pinon Mesa	147,983	201	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Payne Wash (B4)	3/1/2018
Pinon Mesa	147,983	635	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Toms Canyon Mesa (B3)	3/1/2018
Pinon Mesa	147,983	270	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Unaweep Canyon (B3)	3/1/2018
Pinon Mesa	147,983	624	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	Big Dominguez Creek (B2)	3/1/2018
Pinon Mesa	147,983	1,065	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	Cactus Park at Triangle Mesa (B2)	3/1/2018
Pinon Mesa	147,983	258	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	Mee Canyon (B2)	3/1/2018
Pinon Mesa	147,983	6,967	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	Pinon Mesa (B2)	3/1/2018

Pinon Mesa	147,983	2,124	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	Pinon Mesa Canyons (B2)	3/1/2018
Pinon Mesa	147,983	4,242	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	Unaweep Seep (B2)	3/1/2018
Pinon Mesa	147,983	6	Lands with Wilderness Characteristics (LWC) BLM CO/TWS 2021	Bangs Canyon	8/30/2021
Pinon Mesa	147,983	9,170	Lands with Wilderness Characteristics (LWC) BLM CO/TWS 2021	Kings Canyon	8/30/2021
Poncha Pass	26,344	10,161	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Decker Creek (B3)	3/1/2018
Poncha Pass	26,344	2,445	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Sangres Alluvial Fan (B3)	3/1/2018
Poncha Pass	26,344	347	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Villa Grove (B3)	3/1/2018
Poncha Pass	26,344	8,432	Lands with Wilderness Characteristics (LWC) BLM CO/TWS 2021	Poncha Pass East	8/30/2021
San Miguel Basin	22,626	153	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Davis Mesa Slopes (B3)	3/1/2018
San Miguel Basin	22,626	171	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Naturita Upland (B3)	3/1/2018
San Miguel Basin	22,626	0	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	Big Gypsum Valley (B2)	3/1/2018
San Miguel Basin	22,626	1,170	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	East Paradox Creek (B2)	3/1/2018
San Miguel Basin	22,626	1,073	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	Hwy 141 and 145 Junction (B2)	3/1/2018
San Miguel Basin	22,626	1,039	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	San Miguel River at Tabeguache Creek (B2)	3/1/2018
San Miguel Basin	22,626	331	Lands with Wilderness Characteristics (LWC) BLM CO/TWS 2021	Lower Tabeguache/Campbell Creek	8/30/2021

San Miguel Basin: Beaver Mesa/Gurley Reservoir	6,210	386	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Beaver Creek at Beaver Mesa (B3)	3/1/2018
San Miguel Basin: Beaver Mesa/Gurley Reservoir	6,210	1,149	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Middle San Miguel Canyon (B3)	3/1/2018
San Miguel Basin: Beaver Mesa/Gurley Reservoir	6,210	29	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Saltado Creek (B4)	3/1/2018
San Miguel Basin: Beaver Mesa/Gurley Reservoir	6,210	274	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	San Miguel Basin (B2)	3/1/2018
San Miguel Basin: Dry Creek	79,006	4,498	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	Big Gypsum Valley (B2)	3/1/2018
San Miguel Basin: Dry Creek	79,006	5,795	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	Dry Creek Basin (B2)	3/1/2018
San Miguel Basin: Dry Creek	79,006	35,205	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	San Miguel Basin (B2)	3/1/2018
San Miguel Basin: Iron Springs	1,933	124	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Leopard Creek at Brown (B4)	3/1/2018
San Miguel Basin: Iron Springs	1,933	780	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Middle San Miguel Canyon (B3)	3/1/2018
San Miguel Basin: Miramonte	455	41	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	Miramonte Reservoir West (B1)	3/1/2018
San Miguel Basin: Miramonte	455	217	Potential Conservation Areas L4 (External) Higher Biodiversity Significance CNHP 2018	San Miguel Basin (B2)	3/1/2018
Sims Mesa	10,818	2,685	Potential Conservation Areas L4 (External) Lower Biodiversity Significance CNHP 2018	Sims Mesa (B3)	3/1/2018