Data Submitted (UTC 11): 1/5/2022 8:00:00 AM
First name: Laura
Last name: Cunningham
Organization: Western Watersheds Project
Title: California Director
Comments: Dear Mr. Coogan,

Please accept our comment letter on the proposed plan amendment for the Bridgeport Southwest Rangeland Project, from Western Watersheds Project, Center for Biological Diversity, and Wilderness Watch. I will mail a cd of the references since there is a size limit here. Attachments are included here. Please include all these letters in the record.

Thanks you,

Aaron Coogan

District Ranger

Bridgeport Ranger District

HC 62 Box 1000

Bridgeport, CA 93517

Via web portal at https://www.fs.usda.gov/project/?project=49993

January 5, 2022

RE: Revised Notice of Proposed Action for the Bridgeport Southwest Rangeland Project

Dear District Ranger Coogan,

Please accept these comments on the revised Notice of Proposed Action for the Bridgeport Southwest Rangeland Project from Western Watersheds Project, Center for Biological Diversity, and Wilderness Watch. Western Watersheds Project (WWP) is a non-profit organization with more than 12,000 members and supporters. Our mission is to protect and restore western watersheds and wildlife through education, public policy initiatives, and legal advocacy. WWP staff have visited these allotments several times.

The Center for Biological Diversity is a non-profit environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. The Center has over 1.6 million members and online activists with over 63,000 members throughout California and the western United States.

The Center and its members have worked to ensure the conservation of the Sierra Nevada bighorn including by seeking protections for this endangered species from the risk of disease transmission from domestic sheep grazing in its habitat. The Center and its members have also worked to ensure protection for other listed, rare, and special status species in this area that may be adversely affected by the proposal to allow cattle grazing on these allotments including Bi-State sage-grouse, Sierra Nevada red fox, Yosemite toad, gray-headed pika (Ochotona princeps schisticeps), and rare plants. 2

Wilderness Watch is a national conversation organization dedicated to the proper administration, protection and stewardship of the National Wilderness Preservation System.

The Forest Service is proposing to authorize cattle and horse/mule grazing ([ldquo]equine support stock[rdquo] NOPA 2021 at 6) within portions of the Dunderberg, Tamarack, Cameron Canyon, and Summers Meadow allotments.

We have submitted extensive scoping comments regarding this proposed project on June 4, 2018 (WWP et al. 2018), and August 15, 2019 (WWP, Center for Biological Diversity, Wilderness Watch, and Conservation Congress. 2019.). Those scoping comments and the attached documents are incorporated herein by reference and this comment letter does not repeat the previously stated and ongoing concerns about converting these closed allotments to cattle grazing. We are attaching these comments again, because we cannot find them on the Humboldt-Toiyabe National Forest project website.

In these comments we have detailed the significant impacts to Threatened and Endangered species, sage-grouse, sensitive species, water quality, recreation, and other resources that proposed cattle grazing would impact, and therefore we ask that an Environmental Impact Statement be prepared to analyze these significant impacts

We also recommend that these allotments continue to be managed for no permitted livestock use. The extremely high value of these Eastern Sierra landscapes, viewscapes, cultural landscapes, vegetation communities, and rare species habitats warrant the Forest to manage these lands for conservation purposes and no livestock grazing. We recommend these lands be administratively designated as a Botanical and Wildlife Special Management Unit.

For this revised Notice of Proposed Action (NOPA) we do not support a project-specific forest plan amendment. The public submitted extensive comments on the proposed Project, and on Land and Resource Management Plan (LRMP) revisions. The Toiyabe National Forest Land and Resource Management Plan as amended by the Bi-state Sage-grouse Amendment does not allow livestock impacts to harm leks and riparian areas and the Plan should not be amended to allow those harms to occur from this project.

The proposed permittee should not be allowed an exception which changes a major land use plan, and thus set a precedent, especially when, as here, no explanation is provided to justify the amendment.

The Project and Proposed Plan Amendment Would Significantly Harm Sage-grouse

The Bridgeport Southwest Rangeland Project lies within the Bodie Population Management Unit (PMU) of the Bi-State Distinct Population Unit (DPS) greater sage-grouse range.

New information on the Bi-State population was provided by Peter Coates of the U.S. Geological Survey during the December 14, 2021, Bi-State sage-grouse Science Symposium2, the Bi-State DPS of greater sage-grouse has declined 80.7% over that last 53 years. Declines have been leveling off during the last 10 or so years, but the

Bi-State DPS is still declining about 2.2 to 3% per year--which adds up quickly (see slide below).

2 https://mcusercontent.com/f84c785e1f93802c5262e6018/files/5824cd8e-5f8f-a147-9049-3911224a7b9b/Symposium_Agenda.01.pdf

3 Id.

Coates lab PowerPoint slide of declines in sage-grouse in the Bi-State region, December 2021 (https://www.youtube.com/watch?v=B8DKSq081Ts).

Declines are ongoing across all Population Management Units (PMUs) except the Bodie Hills PMU, which nevertheless has declined slightly due to translocations of sage-grouse from this source population to marginal populations at Parker Meadows to stave off local extirpation, according to Coates and his lab.3

Bodie has the lion's share of the Bi-State sage-grouse population, and stopped increasing in 2018--Coates said it would be very problematic from a metapopulation standpoint if something happens to the Bodie core population.

During the December 2021 Science Symposium, Coates said that the loss of understory cover causes nest loss from raven predation.

Post-doctoral student Shawn O'Neil in the Coates lab studied raven threats to Bi-State sage-grouse.4 Ravens are often the top predator of sage-grouse nests. Raven populations in the western U.S. have greatly increased from anthropogenic subsidization, including from agriculture, water features, landfills, and artificial nest substrates (transmission infrastructure being a prime nest substrate in the sagebrush sea). O'Neil found a threshold where as raven density reaches 0.4/square kilometer, sage-grouse nest success drops below the average of all sites, potentially with population-level impacts.

The failure of the U. S. Fish and Wildlife Service (USFWS) to list the Bi-State sage grouse and instead rely on ineffective and largely voluntary conservation measure by stakeholders and state and federal agencies to halt these severe declines has resulted in a series of lawsuits by conservation groups, including ongoing litigation.5 The current proposal to amend the forest plan to allow cattle grazing which is harmful to the sage grouse would undermine the scant existing conservation.

Threats to the Bi-State DPS due to cattle grazing are one of the key reasons that the species needs to be protected under the Endangered Species Act. Cattle grazing across the Bi-State sage-grouse range is degrading nesting habitat, brood-rearing habitat, and reducing cover in general which increases predation--which is clear from the data and our field observations. . These sage-grouse habitats are currently in our field observations recovering from past sheep grazing. Cattle grazing would only set back the recovery of sage-grouse on these high-value habitats. This reinforces our recommendation that these allotments be administratively closed to livestock grazing, for conservation purposes and demonstrates that no sound basis exists for the proposed plan amendment.

The Forest Service went through a five-year EIS process from 2012-2017 to amend the 1986 LRMP to add protections for the Bi-state Sage Grouse. The Record of Decision (ROD) states that the reason for the amending the LRMP was to set [ldquo]stronger management direction that removes the discretion present in the current plan and include standards and guidelines which will be used to protect habitat from activities, direct 5

restoration of habitat, and move the habitat toward the desired conditions.[rdquo] Watering structures would be inconsistent with the management direction stated in the LRMP to protect habitat for sage-grouse. Cattle grazing is inconsistent with restoration of sage-grouse habitat.

Specifically, the amendment would change the U.S. Forest Service[rsquo]s LRMP to allow stock watering structures in the Dunderberg and Jordan Basin grazing allotments.

The NOPA at 11-12 admits that constructing these water facilities for livestock would violate resource management plans that protect riparian areas and sage-grouse, and that the proposed plan amendment would simply excuse the project:

Doing so would be inconsistent with the Toiyabe National Forest Land and Resource Management Plan as amended by the Bi-state Sage-grouse Amendment standard RI-S-06 requirement that livestock watering and handling facilities be located outside 0.6-mile buffer of riparian areas. After completing map work it was determined that it is not feasible to move the water troughs 0.6 miles from riparian areas in the Dunderberg allotment.

[hellip]The proposed project-specific plan amendment would add the following to Bi-state Sage Grouse Amendment standard RI-S-06, [ldquo]This standard does not apply to the Bridgeport Southwest Rangeland Management Project (date of project approval).[rdquo]

This creates a poor and unjustified precedent for any other livestock operator to ask for a plan amendment that violates sage-grouse protection measures. We therefore oppose this plan amendment. The degradation of native grasslands, sagebrush habitats, meadows, and riparian areas by livestock grazing is a major unexamined factor that could be a stressor and contribute to declines in sage-grouse populations. Specifically, livestock grazing reduces cover needed by sage-grouse to avoid predation, and may be lowering habitat quality in many places for food sources as well. High-quality sagebrush and wet meadow habitats are declining. This needs more study and should be analyzed in an EIS.

In the Sierra Nevada Ecosystem Project[rsquo]s Final Report To Congress, Kattelman (1996) stated that livestock grazing has [ldquo]affected more area in the Sierra Nevada than any other management practice[rdquo]. Montane meadows, riparian zones of streams, and lakes in meadows may be more likely to encounter livestock grazing impacts than other upland habitats. High-elevation riparian habitats may be particularly vulnerable to disturbance, presumably because of their short growth season and consequently slow rates of recovery. Historical evidence indicates that heavy livestock use in the Sierra led to sod destruction in meadows, which reduced or eliminated protective vegetative, while hoof shear, trampling and chiseling contributed to gully erosion by exposing soils to erosive flows. Transient sheep grazing in the high-elevation meadows of the Sierra and Glass Mountains also has caused heavy damage from overuse.

The impacts of livestock grazing on high elevation wetland and riparian ecosystems are well documented (Menke et al. 1996). Livestock tend to concentrate in riparian areas (Belsky et al. 1999) and can remove and trample riparian and wetland vegetation (Kauffman and Krueger 1984, O[rsquo]Callaghan et al. 2014). Chronic trampling in wet and mesic meadows can reduce infiltration by increasing compaction, which can increase bare ground and decrease site productivity. Olson-Rutz et al. (1996a, 1996b) noted that decreased cover and increased bare soil were correlated with grazing intensity and duration in mountain meadows[mdash]this can have significant effects to sage-grouse.

Vegetation removal and trampling by livestock in a montane riparian habitat also had the secondary effects of altering micro-channel characteristics resulting in increased velocity of runoff because of fewer micro-channels with deeper flows (Flenniken et al. 2001). The cumulative effects of overgrazing can result in insufficient residual vegetation and decreased vegetative cover that impacts such species as sage-grouse, meadow-nesting birds, mountain yellow-legged frogs, and small mammals.

Livestock also can alter the physical and hydrological characteristics of stream margins, springs, and other riparian areas. The typically high soil moisture along stream banks and other aquatic edge habitats make these

areas easier to trample. Trampling often increases bank erosion, filling in pools, and can make stream channels wider and shallower (Kauffman and Krueger 1984, Bohn and Buckhouse 1985). Livestock grazing also has the potential to increase erosion of connecting stream channels, lower the water table, and eliminate ephemeral and even permanent water bodies (Meehan and Platts 1978, Armour et al. 1991). Repeated over-utilization and trampling also can result in alterations to aquatic micro-topography (e.g., undercut banks) used by fish for cover.

Proposed Cattle Allotment Management Would Significantly Harm Sage-Grouse and Other Natural Resources

The Forest needs to analyze how cattle may significantly impact the lek in Lower Summers Meadow, one of the few in the Bodie PMU west of US Route 395, and how impacts may occur from cattle grazing in sage-grouse nesting, brood-rearing, and wintering habitat.

The proposed action would modify the boundaries of the allotments and reconfigure pastures.

The 2021 NOPA at 7 states that:

The new Dunderberg allotment would be divided into a total of three pastures; two would be in the old Dunderberg allotment (i.e., Dunderberg Mine and Dunderberg Low), and the third would be the Jordan Basin Unit. The new pastures would be incorporated into a new Allotment Management plan for both Allotments where all pastures are managed within one grazing system. 7

Will cattle be trailed and driven across Virginia Creek outside of allotments and between the proposed Dunderberg Mine and Dunderberg Low pastures to the proposed Jordan Basin pasture? The NOPA at 10 mentions range riders herding livestock between pastures. This should be more fully analyzed in an EIS. Cattle trailing/herding across Virginia Creek could have significant impacts to riparian and aquatic resources that were not analyzed in the draft EA.

Livestock grazing [ldquo]flexibility[rdquo] is proposed, where cattle occupancy rates, season of use, and management strategies would be adjusted after this NEPA process is closed, thus cutting the public out of these important management considerations. These are important to understand, for example cattle disturbance to sage-grouse leks and meadows that are important brood-rearing habitats. Disturbance to habitats may cause the need for grazing seasons to be curtailed during significant sage-grouse seasons, and this needs to be analyzed in an Environmental Impact Statement, not deferred until after the decision when the public cannot comment.

For Occupancy Rates, the Forest Service needs to consider drought years or [ldquo]unfavorable[rdquo] years much better[mdash]and delineate how season of use and AUMs would be reduced due to drought, or pastures rested until better conditions arrive. Climate change impacts may bring increasing periods of extreme drought, as was experienced in the region during 2021.

The NOPA proposes overall permitted season of use would be from May 15 to October 31 (at 9). This overlaps with important dates where disturbances to sage-grouse need to be eliminated, especially June brood-rearing times in and around meadows. As noted in a July 7, 2020, news release6, restrictions to disturbance of sage-grouse leks from March 1 to June 30 in a 4-mile buffer to off-highway vehicle races were upheld in court (Sierra Trail Dogs Motorcycle and Recreation Club, et al. v. U. S. Forest Service et al., Case No. 3:18-cv-00594, (D. Nev. July 6, 2020)) where intervenors including WWP and the Center questioned the Humboldt-Toiyabe National Forest plan in order to protect sage-grouse, and the case was decided in favor of protecting the later season June sage-grouse use from disturbance7.

Agencies at the very least should consider seasonal grazing restrictions during breeding and brood-rearing times along the lines of what the District of Idaho recommended: livestock grazing should be restricted in sage-grouse nesting and brood-rearing habitat to the [ldquo]well established[rdquo] timeframes necessary for preventing

adverse impacts to sage-grouse [ndash] livestock can graze during the periods June 20 to August 1, and November 15 to March 1. WWP v. Salazar, 843 F. Supp. 2d 1105, 1123 (D. Idaho 2012).

Livestock grazing has similar or greater significant impacts as the off-road races (at issue in the Trail Dogs case) to crucial sage-grouse seasons of use. Allowing livestock grazing through June as proposed will negatively impact leks and meadow brood-rearing habitat.

This needs to be analyzed in a full EIS, as the off-road race was reviewed in the earlier plan amendment.

The NOPA at 10 quotes the Intermountain Region Rangeland Ecosystem Analysis and Monitoring Handbook (FSH 2209.21) as defining proper use criteria as limiting factors such as residual forage or other measurable factors. Yet the same Forest Service Handbook (2209.21_30, page 11) also states that range managers should [ldquo][d]evelop proper-use criteria from interdisciplinary input; e.g., fishery surveys, stream surveys, rare plant and animal surveys, vegetative trend analysis.[rdquo]8 There is no indication that the Forest has undertaken adequate stream surveys, surveys for Lahontan cutthroat trout, rare plant surveys, and vegetation trend analysis needed before considering the proposed plan amendment. The available information shows that vegetation communities are trending upward towards climax types with the removal of livestock, and recovery from early seral stages. The introduction of cattle can set back vegetation trends to less healthy states.

8 https://ecoshare.info/uploads/RangeAnalysisHandbook/range_handbook_30_code_august_29.pdf

In addition, FSH 2209.21 at p. 12 discusses the importance of considering sage-grouse habitat and esthetics:

Tradeoffs must be recognized and displayed. For instance, rarely does a rangeland area look as good from an esthetic standpoint immediately after being grazed as it looked prior to grazing. Therefore, if grazing is to be allowed, some esthetic values are foregone. How much grazing will be allowed may depend upon how sensitive the area is from an esthetic and/or resource value standpoint. Big game winter ranges, calving and fawning areas, riparian zones, sage grouse habitat, rare plant sites and habitat, and high use recreation areas are examples of other areas where coordination is needed. All of these areas where coordination is needed might require tradeoffs to some degree. (Emphasis ours)

We contend that more coordination is needed between the Forest and other agencies and stakeholders to mitigate threats to the Bi-State DPS of greater sage-grouse here, recognizing the severe declines with which this taxon has undergone. The EA has failed to analyze the significant impacts that cattle grazing would have on these recovering sage-grouse habitats.

Residual grass height and cover are also emphasized under national greater sage-grouse guidelines. Nest success is higher where there is more cover, and grass height is a measurable way of limiting livestock removal of concealing factors.

Livestock are known to stress sage-grouse (Jankowski et al. 2014) and cause nest abandonment, and increase nest predation (including by the cattle themselves; 75 F.R. 13940-41). Therefore, the management of livestock in sage-grouse habitat must be limited during nesting and brood-rearing seasons, and grass height is a useful indicator of the intensity of grazing use. Grazing use and livestock incursions into sage-grouse habitat would increase the frequency of nest flushing, a factor also linked to nest success in observer-interaction studies (Gibson, et al. in press). Grass height may also have significance for foraging distance from nests, not simply cover at the nest bowl. Brood-rearing use of cover exemplifies the importance of structurally diverse microhabitats that consist of mixed vegetation to conceal sage-grouse nests and their chicks. Ravens are visual foragers and poor screening might make nests especially vulnerable to them (Horney 2008).

The best available science has established that at least 7 inches (18 cm) of residual stubble height needs to be

provided in nesting and brood-rearing habitats throughout their season of use to provide adequate hiding cover. According to Gregg et al. (1994: 165), [ldquo]Land management practices that decrease tall grass and medium height shrub cover at potential nest sites may be detrimental to sage grouse populations because of increased nest predation[hellip] Grazing of tall grasses to <18 cm would decrease their value for nest concealment[hellip] Management activities should allow for maintenance of tall, residual grasses or, where necessary, restoration of grass cover within these stands.[rdquo] Connelly et al. (2000) recommends grass height of greater than or equal to 18 cm in breeding habitat.

Hagen et al. (2007) analyzed all scientific datasets up to that time and concluded that the 7-inch threshold was the threshold below which significant impacts to sage-grouse occurred (see also Herman-Brunson et al. 2009). Prather (2010) found for Gunnison sage-grouse that occupied habitats averaged more than 7 inches of grass stubble height in Utah, while unoccupied habitats averaged less than the 7-inch threshold. Heath et al. (1997) found that near Farson, Wyoming, nests with taller grass heights were more successful than those with shorter heights. Holloran et al. (2005) found that residual grass height and residual grass cover were the most important factors correlated with sage-grouse nest success in their central and southwestern Wyoming study area, with habitats with the tallest and densest grasses showing the greatest nest success. Doherty et al. (2014) found a similar relationship between grass height and nest success in northeast Wyoming and south-central Montana but did not prescribe a recommended grass height. While there are those who have attempted to cast doubt on the necessity of maintaining grass heights to provide sage-grouse hiding cover, based on timing differences in grass height measurements between failed nests and successful nests, these concerns have been scientifically refuted for Wyoming.

Studies pointing to potential bias in date of grass measurement between successful and failed nests have failed to invalidate the scientifically significant results of published studies finding significant differences in nest success with greater grass height.

Importantly, the one study in the Bi-State area that finds no significant benefit to grass height in regard to nest success (Kolada et al. 2009) also notes an abundance of rabbitbrush providing concealment cover that is unusual for Bi-State sage-grouse habitats as a whole, and is likely limited in applicability to washes, valleys, and alluvial fans. Farther east in the Bi-State area, Wyoming big sagebrush habitats are comparable to those range-wide where grass height has been shown to play a key role in nest success.

The current paucity of adequate cover of upland native bunchgrasses, and native meadow vegetation across the grazed Bi-State region is a major threat to sage-grouse survival.

Thines et al. (2004) found that cattle grazing reduced the nutritional quality (e.g., 10 increased fiber and decreased protein) of the remaining grass. This depletion of native bunchgrasses not only alters the nutritional composition of native bunchgrasses, it also reduces the protective screening cover of native bunchgrasses critical to conceal sage-grouse nests. Sage-grouse also use herbaceous understory plants as forage.

Utilization rates of 45% in herbaceous upland sagebrush and mountain shrub communities are recommended by Humboldt-Toiyabe National Forest in allotments for cattle, but we are concerned this is too high a utilization rate. The herbaceous understory of sagebrush shrub communities may be severely altered with cattle grazing: 45% utilization of herbaceous species in functioning upland sagebrush and mountain brush sites may not provide requisite cover for sage-grouse. For example, 45% utilization of needlegrass (Stipa spp.) may only leave 2.5 inches of stubble height remaining, and 45% utilization of squirreltail grass (Elymus elymoides) may only leave 1 inch of stubble height. This is not enough to provide cover for sage-grouse, especially nesting cover.

Bitterbrush (Purshia tridentata) is often selected as a nest shrub in the Bodie PMU (NDOW 2004). Yet the NOPA at 10-11 does not mention proper use criteria for bitterbrush. Shrub use is proposed at 35%, which again, may be too destructive of these important shrub screening and cover habitats for sage-grouse.

Nest site evaluations in the Bodie PMU find forbs such as milkvetch (Astragalus sp.),

hawksbeard (Crepis sp.), phlox (Phlox sp.), groundsmoke (Gayophytum sp.), and yarrow (Achillea millifolium) important for sage-grouse. We saw all these species with the exception of groundsmoke on the allotments[mdash]the Forest must ensure these forbs remain plentiful enough to provide nesting and foraging habitat in future. Abundant forbs are an important source of nutrition for pre-laying hens and hens with broods (Connelly et al. 2000). June hatching dates have been documented in the Bodie PMU and some potential for nest disturbance and trampling does exist for late season nesters (NDOW 2004).

Gregg et al. (2009) say poor habitat quality may be an important causative factor in reduced annual recruitment in sage-grouse. They found that both food and cover variables were positively associated with chick survival, including Lepidopteran availability, slender phlox (Phlox gracilis) frequency, total forb cover, and total grass cover. The hazard of an individual chick[rsquo]s death decreased 8.6% for each percentage point increase in total grass cover when the proportion of short grass was greater than 70%. The high-quality nutrition of certain insects and forbs may be important for early growth in chicks. Habitat management that promotes Lepidoptera and phlox abundance during the May and June early brood-rearing season should have a positive effect on brood survival, the authors say.

Summer habitat for sage-grouse in the Bodie PMU is at higher elevations, and sage-grouse often cluster around meadows, springs, and streams. These areas should be protected from heavy grazing. Due to their limited extent and susceptibility to livestock grazing induced ecological changes, the availability of quality meadow and riparian habitats may be a significant limiting factor for sage-grouse in the PMU (NDOW 2004).

Winter habitat commonly includes lower elevation stands of dense sagebrush.

Fragmentation of these stands by cattle and fencing will impact sage-grouse habitat and recovery as well. A good model for managing sage-grouse areas with no cattle grazing can be found at Sheldon National Wildlife Refuge Nevada. Managers describe how sage-grouse habitats are recovering without cattle grazing. Refuge management for sage-grouse recommends [ldquo]Conservation Measures: Rest from livestock grazing.[rdquo]9 Long term overutilization and annual long-duration spring grazing have contributed to risks to sage-grouse. Cattle grazing was removed from the Refuge to allow uplands to recover. Higher elevation sites appear to be recovering well, with vigorous grasses noticeable. Even in the absence of horse use, recovery in lower elevation sites will be slow. Refuge habitats still suffer the effects of historic overgrazing, particularly at lower elevations. Lack of understory for nesting cover and spring forage is another risk to sage-grouse, from over utilization of the understory in these communities. In many areas grass plants are still lacking, even 8 years after cattle were removed. Conservation measures considered to aid in restoration of the sage-brush-steppe here include prescribed fire.

The Forest should do detailed surveys for sage-grouse, any new lek(s), nesting areas, early brood rearing areas, and other habitat use. During our visit in May 2018, we saw large areas of the Jordan Basin, Dunderberg, Cameron Canyon, and parts of the Summers Meadow Allotments that appeared to be excellent habitat for sage-grouse. Both winter and summer habitat was present, with dense sagebrush and bitterbrush. Brood-rearing habitat on shrub-meadow edges appeared to be of high quality and recovering from past sheep grazing. We found native bunchgrasses, rhizomatous meadow grasses, and forbs were growing well in this ungrazed condition.

We attach our comments (WWP 2019a and 2019b, and WWP and American Bird Conservancy 2019) to the U.S. Fish and Wildlife Service on the status review of the Bi-State DPS of greater sage-grouse, for the record, to show our observations of how livestock grazing has cumulatively and significantly impacted the habitats across the range of this DPS.

Recommendations for Baseline Conditions

Any analysis should include a detailed and thorough description of historical ecological baseline natural conditions in the Bi-State area, before European contact and before livestock grazing, such as existed before 1850. Looking at relict native vegetation communities, we believe conditions of natural meadows, grasslands, riparian groves, and sagebrush steppe have changed fairly drastically since this early time, and some areas appear to be trending to further disturbance and aridity. Comparing ungrazed reference sites to equivalent grazed and ditched pastures should be one method for determining healthy baseline conditions of these natural communities.

We recommend establishing reference sites and assessing vegetation communities and ecosystem health based on the state-of-the-art multi-agency Interpreting Indicators of Rangeland Health protocol.10 This protocol assesses soils and soil health in a more thorough manner than other rangeland management techniques.

New Livestock Water Structures and Fences Are a Particular Threat to Sage-grouse

The NOPA at 11 proposes to reconstruct three old, non-functioning water facilities for cattle: Three existing but poorly functioning water developments would be reconstructed to provide reliable stock watering points that would be located outside of riparian areas. One is on the southern end of the Dunderberg pasture near Kavanaugh Ridge Road, one is downstream in the Dog Creek drainage, and one is in the Jordan Basin pasture. (Figure #) Water sources would be fenced to prevent use by livestock. Troughs would have wildlife escape ramps.

There is no detail about what springs, streams, or wells would be piped to provide water to troughs. This level of detail should be provided in an EIS.

New fences are proposed to be constructed around the water sources, yet this needs analysis as to the significant impacts on sage-grouse. Even with marking/flagging, mortality of sage-grouse has been shown to continue at fences. Further new barbed-wire fences are also proposed around historic structures (NOPA at 12).

Christiansen (2009) documented only a 61% decrease in collision mortalities with marked barbed-wire fences. So even when such decreases (61-83%) are achieved, there remains a massive amount of collision mortality, the remedy for which is avoid building fences in sage-grouse habitats.

Water projects also expand livestock use into less impacted sagebrush habitats. Salting and feeding of nutrients and supplements on the allotments can further create disturbed areas where weeds invade, shrub structure is altered, and the ground is trampled.

Livestock presence may subsidize the local raven population (Horney 2008). Ravens are visual foragers and use fence posts as perch sites to increase their visual fields. Livestock presence may be beneficial to ravens in other ways too, providing carcasses and disturbances that facilitate raven presence and foraging.

Predation on sage grouse nests by ravens and other [ldquo]subsidized[rdquo] predators is of particular concern. Ravens predate on sage-grouse eggs and may take chicks. Nesting and brood rearing are performed entirely by the hens. Nesting may occur mid-April through mid-June, and occasionally into July if a hen loses her first clutch and re-nests. Incubation takes 25-27 days with peak hatching occurring mid-May through mid-June. The hen sits on her nest for most of the day but may leave for brief periods at dusk and dawn. Nest predators such as ravens may key on these movements by the hens to locate and predate on eggs in the nest (Coates and Delehanty

2008).

Dispersing livestock waters through sage grouse habitat subsidizes ravens and other predators. There is evidence that ravens show a preference for stock tanks rather than natural springs as a water source (Knight et al. 1998).

The Conservation Objectives Team (U.S. Fish and Wildlife Service 2013 at 45-46) report for greater sage-grouse in general included grazing management recommendations, including: Ensure that [grazing] allotments meet ecological potential and wildlife habitat requirements; and, ensure that the health and diversity of the native perennial grass community is consistent with the ecological site[hellip].[Range management structures] that are currently contributing to negative impacts to either sage-grouse or their habitats should be removed or modified to remove the threat. (Emphasis ours.) Cattle Grazing Will Significantly Impact Federally Endangered Sierra Bighorn Sheep

Because Sierra Nevada bighorn sheep (Ovis canadensis sierrae) Critical Habitat overlaps the proposed allotments, and because cattle will affect bighorn by potential disease transfer and behavioral modification, impacts will be significant to this rare species. The NOPA did not acknowledge our concerns discussed in our prior scoping comment letter on this project. Therefore, the Forest must undertake a full Environmental Impact Statement and analyze these potential impacts.

The Sierra Nevada subspecies of bighorn sheep was reduced to approximately 100 animals by the mid-1970s, and was added to the U.S. Fish and Wildlife Service Endangered Species list through an emergency declaration in 2000. Since this time, the population of Sierra Nevada bighorn sheep has grown to roughly 600 animals. Bighorn sheep remain at risk of disease from livestock pathogens throughout the West, with authorized grazing on public lands a limiting factor for many populations. The allotments being analyzed for this project contain occupied Sierra Nevada bighorn sheep habitat. Cattle grazing has the potential to negatively impact bighorn populations: cattle are known to carry pathogens that can be transmitted to bighorn sheep, cattle may displace bighorn sheep from optimal habitats, reducing foraging efficiency, and cattle contribute to the spread of noxious weeds which outcompete native vegetation, degrade bighorn sheep habitat and increase fire risk. As we have detailed in our previous August 5, 2019, comment on this Project, Cattle have been implicated in pneumonia-related die-offs of bighorn sheep, as well as in outbreaks of Bovine Viral Diarrhea and other diseases impacting wild sheep. Bovine respiratory syncytial virus (BRSV) and bovine parainfluenza virus 3 have been identified as co-agents in pneumonia outbreaks in bighorn sheep populations, affecting bighorn herds exposed to primary agents Mycoplasma ovipneumoniae and Mannheimia haemolytica. Mannheimia haemolytica originating in cattle is believed to have been a primary respiratory disease agent in at least one bighorn sheep pneumonia outbreak.

Wilderness and Roadless Area Impacts and the Proposed Plan Amendment

In our earlier comments, we pointed out the Forest Service needed to address the impacts of the proposed action on the Hoover Wilderness and adjacent/contiguous roadless areas. Part of that evaluation would be a map showing those boundaries. The new PA does not correct that oversight and thus it is impossible, without consulting other materials, to determine how the plan amendment allowing these water developments might affect the Hoover Wilderness or adjacent roadless areas. There is no map showing the relevant boundaries.

A plan amendment that allows cattle watering structures could affect distribution of livestock in Wilderness. Currently, there is no allowable use by cattle. The allotments were formerly used by sheep, which tend to have different negative impacts than do cattle. How will amending the plan to allow these proposed water developments affect livestock use, both authorized and unauthorized? For example, the Dunderberg Mine pasture would have a new water development. A small portion of this pasture appears to be in the Hoover Wilderness.

The wording of the proposed amendment suggests future water developments would be allowed as a result of the plan amendment in the Hoover Wilderness or adjacent roadless areas without an additional amendment. Structures are generally prohibited in Wilderness. Yet, the potential impacts or implications of such new developments are not addressed in the new PA. Thus, the proposed plan amendment may be significant and could have a far greater impact than the PA leads the reader to believe.

Whitebark Pines Need Protection From Damage by Livestock

In December 2020, the US Fish and Wildlife Service proposed listing the whitebark pine (Pinus albicaulis)11, which we have found present on higher elevations within the allotments proposed to be opened for cattle grazing. Particularly fine stands are present in the Dunerberg and Jordan Basin units.

Disease, beetle infections, drought, climate change, and altered fire regimes have reduced populations nearly by half. Healthy whitebark pines play an important role in slowing runoff from snowmelt, reducing soil erosion, and providing high-energy seeds to birds and mammals. Whitebark pine provides food for Clark[rsquo]s nutcracker, among many other wildlife species. Whitebark pines are culturally important to Indigenous tribes.

Yet the Forest proposes no mitigation measures to protect these trees from rubbing by cattle, trampling of roots, erosion around trees, and potential impacts to sapling recruitment. These impacts need analysis in an EIS.

Traditional Ecological Knowledge Should Be Incorporated Into An EIS

We support the inclusion of local Paiute oral traditions and Traditional Ecological Knowledge (TEK) into any status review, as equally important to Western scientific knowledge. This deep source of knowledge can be useful to all stakeholders, and can give perspective to historic conditions. With current baselines already much altered since the 1800s and early 1900s, TEK can inform possible future goals of restoration of habitats and recovery of sage-grouse populations.

In July 2018 we spent time in the Bodie Hills with members of the Bridgeport Paiute Tribe, learning about the TEK in this region. We encourage the Service to invite and interview native people to give testimony as to their deep knowledge, memories, and oral traditions about their historic and pre-historic observations of sage-grouse and habitats in this area. This knowledge should be integrated into any management planning for recovery of sage-grouse.

For example, we learned from Joseph Lent[mdash]Bridgeport Paiute[mdash]that along Aurora Creek in the Bodie Hills this area used to have sage-grouse leks. The old people, he said, used to burn the meadows to open up the sagebrush and create more grass. This also increased the edible grass and shrub seeds that people collected for food: Great Basin wildrye, ricegrass, buckberry, and gooseberry. Suckers (Catostomus spp.) were common in creeks in the Bodie Hills in early days of his memory, he showed us, that are now devoid of surface water. He and his family used to net suckers in Clark Canyon Creek. Informants told us they used to see a lot of sage-grouse dancing in Aurora Meadows, but now there are none here. Cheatgrass has come in, they told us. But now due to cattle impacts there is no water here. The Clark Canyon tributary of Aurora Creek, for example, was heavily impacted by cattle during our July 2018 field visit to the Bodie Hills[mdash]there was only trampled mud and banks, no meadow vegetation, and browsel ines on the willows. No surface water remained. This habitat in the past apparently held a viable sucker population, and could have been good sage-grouse habitat. Yet now it is highly degraded by cattle grazing on this allotment. We do not see how this management on public land is helping to stave off listing of the Bi-State DPS of greater sage-grouse.

There are oral histories of wagons crossing Bridgeport Valley in the early 1900s, and having large numbers of sage-grouse fly out of the meadows and sagebrush flats. Currently, sage-grouse seem to be absent from Bridgeport Valley.

Conclusion

The potential exists for significant impacts to sage-grouse and other species and habitats from this Project, we oppose amending the LRMP, and we ask that an Environmental Impact Statement be prepared for the proposal which includes an alternative that does not amend the LRMP.

Thank you for considering these comments. Western Watersheds Project, Center for Biological Diversity, and Wilderness Watch thank you for this opportunity to assist the Forest by providing comments for this important proposed action. Please keep us informed of all further substantive stages in this and related NEPA processes and documents by contacting us at the emails provided below.

Sincerely,

Laura Cunningham

California Director

Western Watersheds Project

Lisa T. Belenky, Senior Attorney

Center for Biological Diversity

Gary Macfarlane

Board Member

Wilderness Watch

Laura Cunningham

Western Watersheds project