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Mr. Elijah Waters
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RE: Draft Environmental Impact Statement (EIS) for Domestic Sheep Grazing Permit Renewals (DOI-BLM-CO-S060-2014-0001-EIS)

Dear Mr. Waters,

Thank you for the opportunity to comment on the draft Environmental Impact Statement (EIS) for Domestic Sheep Grazing Permit Renewals (DOI-BLM-CO-S060-2014-0001-EIS). Colorado Parks and Wildlife (CPW) participated as a cooperating agency on this document. CPW provided comments on the administrative drafts (April 2017 and June18), and has participated in discussions with the BLM regarding Best Management Practices (BMPs) throughout the process.

CPW appreciates the working relationship and interactions with your staff in the Gunnison Field Office, and your efforts to consult with us as the document was developed. CPW's goal with our participation was to provide technical and scientific expertise during the development of the EIS. Overall, the EIS accurately reflects the best available science associated with disease transmission between domestic and bighorn sheep. CPW remains concerned with several aspects of the EIS described below that should be modified in the final EIS and Record of Decision (ROD).

Project Overview

The BLM is in the process of renewing permits for nine domestic sheep grazing allotments covering approximately 66,000 acres of public lands within Gunnison, Hinsdale, and Ouray counties. There are two existing active sheep permittees that utilize the allotments to graze approximately 5,100 domestic sheep annually. There are eighteen domestic sheep or goat grazing allotments that were not considered in the EIS as either part of the proposed action or within the alternatives for a variety of reasons (pg. 3). The BLM will decide on what terms and conditions may be applied to the grazing permits in the ROD.

Gunnison sage-grouse:

CPW is concerned with the potential impacts of domestic sheep grazing on Gunnison sage-grouse (GuSG). The Sapinero allotment has nearly 100% overlap with federally designated Critical Habitat for GuSG. Alternatives A, C, and D would allow for a 43% increase in AUMs on the Sapinero allotment. The EIS makes an effect determination that grazing "may affect, but is not likely to adversely affect" GuSG. Land Health Assessments conducted by the BLM in 2011 indicate that domestic sheep grazing is contributing to the spread of cheatgrass in the area. Federal managers have noted patches of cheatgrass near domestic sheep bedding areas and on shallow soil rock outcroppings. CPW is aware that the BLM has collected more monitoring vegetation data in these allotments since 2011. We recommend that the BLM include this information in the EIS, continue these monitoring efforts, and map existing cheatgrass patches to better understand how the current domestic sheep grazing regime is influencing the spread and distribution of cheatgrass and, consequently, impacting GuSG habitat.

CPW is also concerned that historic and current domestic sheep grazing has significantly reduced the diversity of mesic plants in wet meadow communities, increased soil erosion and altered hydrology in relation to vehicular travel routes and trailing by domestic sheep in the Sapinero and Goose Creek allotments. The current domestic grazing regime is contributing to the lack of flowering plant diversity in wet meadows as observed by the dominance of rocky mountain iris. These impacts have resulted in lower quality brood-rearing and summer-fall habitats for GuSG. CPW and our partners recently spent over $40,000 to improve wet meadows within the Sapinero domestic sheep allotment. As mentioned in the EIS, these large riparian/wetland restoration projects are designed to restore and enhance the resilience of priority brood-rearing habitat. Success of restoration is dependent on precipitation and heavily influenced by livestock grazing intensity and duration. The best restoration results have occurred when AUMs are maintained or reduced which allows a greater portion of plants to mature and seed. The draft EIS (pg 54) mentions that wet meadow restoration efforts can "offset or mitigate rangeland degradation by domestic sheep." CPW respectively disagrees with this conclusion. These restoration efforts are directed at improving seasonally specific brood-rearing habitat, which CPW has identified as a critical bottleneck in conserving viable populations of GuSG (Davis 2012).

The improvement of brood-rearing habitat will have no impact on Gunnison sage grouse conservation efforts if cheatgrass is allowed to flourish and further degrade sagebrush uplands. The sagebrush uplands function as nesting habitat, another important component required before brood-rearing can occur. Therefore, mesic restoration efforts (brood rearing habitat) do not compensate for reduced or degraded upland habitat (nesting habitat) from cheatgrass expansion. We recommend that the EIS be modified to identify specific minimization and mitigation efforts that will be incorporated into the grazing permits to reduce cheatgrass expansion in the uplands and restore plant diversity in mesic habitats so that they continue to function for GuSG.

Rocky Mountain Bighorn Sheep Management

Bighorn sheep are the only ungulate listed as a species of greatest conservation need in CPW's State Wildlife Action Plan (SWAP)(CPW 2015). Specifically, the SWAP indicates that the highest priority threat is pathogen transmission by livestock (Chapter 5 - Table 7). The best protection for maintaining bighorn sheep herds is to maintain total spatial and temporal separation of domestic and bighorn sheep (WAFWA 2012

The EIS analysis area is centered on RBS-21, which contains Game Management Units S21 and S33. RBS-21 is a Tier 1 bighorn priority population (*Tier 1: a larger herd with genetically native animals to the area*). The analysis also extends out to RBS-20 (also Tier 1) and Tier 2 populations like RBS-22, RBS-27, RBS-25 (*Tier 2: smaller herds comprised of native or transplanted individuals*). CPW has invested extensively in bighorn recovery efforts from the 1970's until the early 2000's, transplanting over 400 individuals to key locations within this analysis area, where bighorn had been extirpated a century earlier (George et al. 2009). The analysis area represents the highest degree of overlap between the number of bighorn herds and domestic sheep allotments in the state of Colorado (George et al. 2009: pg 64).

CPW's current management direction for RBS-21 as approved by the CPW commission is to manage for a stable population size and distribution (Diamond and Banulis 2012). The decision to manage for a stable population and distribution in RBS-21, rather than an increasing one, was to ensure that future risks of contact with domestic allotments were not elevated; a decision that came at the cost of not having bighorn sheep in a significant portion of suitable habitat. The management direction in RBS-22 and RBS-20, which are within the analysis area and foray distance to the allotments, are for an increasing population size and distribution (Diamond and Ferraro 2013, Weinmeister 2012).

Documented Disease Transmission

The susceptibility of bighorn sheep to pathogens originally introduced by domestic livestock is regarded as the primary factor limiting bighorn sheep populations in Colorado, through either all-age die offs, or long-term reductions in lamb recruitment leading to stagnant populations (George et al. 2009). As mentioned in the EIS, we agree that respiratory disease risk is the greatest concern for bighorn herd managers for this particular analysis area (Diamond and Banulis 2012, Weinmeister 2012, Diamond and Ferrero 2013). This risk has been documented within the analysis area through chronic or sporadic suppressed lamb-recruitment (CPW unpublished data), bighorn mortalities from respiratory disease after contact with domestic sheep (Spicer 1999, Diamond and Ferrero 2013), and all-age die-off events (Spicer 1999, Diamond and Ferrero 2013). In addition, CPW has documented 25 stray domestic sheep occurrences, 34 bighorn foray events, and seven comingling events between bighorn sheep and domestic sheep within the analysis area. Furthermore, high prevalence of *Mycoplasma ovipneumonia*, followed by a period of low lamb recruitment has been documented in the Tier 1 herd of S33 (CPW unpublished data), similar to that documented nearby in a recent CPW study (Grigg et al. 2017).

Risk of Contact Model and Foray Analysis

The risk-of-contact analysis methods implemented in this EIS exemplify the best available science using peer- reviewed research (O'Brien et al. 2014). The Core Herd Home Range (CHHR) used in the model is based on the bighorn summer range Species Activity Map (SAM) polygon (CPW data). A spatial polygon of CHHR is a required parameter in the ROC model (O'Brien et al. 2014). We offer a word of caution that the CHHR boundary is not a fixed and hard line given annual distributional changes of the bighorn herds and the course scale at which the CPW SAM maps were created. Using CHHR to potentially delineate allotment boundaries does not result in an actual on the ground spatial buffer between bighorn use areas and domestic sheep allotments.

The output from the ROC analysis is likely a conservative quantification of the true disease risk to bighorn. The ROC tool does not model the risk of stray domestic sheep outside the allotments or domestic sheep present during unauthorized periods, which may also pose a risk of disease transmission (pg 35). The EIS correctly identifies that "forays by bighorn sheep threatens to increase the risk of contact and disease transmission among bighorn sheep populations" (pg 26). Risk represented by domestic sheep going into areas directly overlapping summer home ranges is of concern, but the greater difficulty in managing risk is with bighorns foraying out of summer ranges. Bighorn foray events documented within the analysis area support a 35 km buffered analysis area. Given the abundance of bighorn sheep habitat overlapping the allotments, there are no localities within the allotments that are outside the range of high foray probability.

Predictions of the risk-of-contact model used in the EIS are bolstered by observed bighorn forays in the analysis area (CPW unpublished data). Foray probability is the highest immediately adjacent to the CHHR. Prohibiting these foray movements with management actions (i.e. euthanization of bighorn outside bighorn core range) would ultimately decrease genetic connectivity between the populations. CPW supports the inter-herd movements of bighorn to take place naturally as manually augmenting these bighorn populations will not occur in the near future. Overall, CPW's management direction is consistent with BLM's direction in this EIS (pg 26) that maintaining connectivity between bighorn sheep populations and herds is important to the long-term sustainability of bighorn. This direction is also consistent with other BLM guidance (Secretarial Order 3362, BLM 2016: Manual MS-1730, Management of Domestic Sheep and Goats to Sustain Wild Sheep, and BLM Manual 6840 pertaining to Special Status Species).

Grazing Best Management Practices:

The attraction between bighorn and domestic sheep is well documented, and should not be unexpected given the genetic similarities. We appreciate BLM considering management practices through implementing terms and conditions in domestic sheep permits, along with additional site-specific or new practices that help achieve effective separation and minimize the risk of contact, based on the best available science (BLM 2016). The EIS does acknowledge that these practices are unproven, that the efficacy on reducing contact is unknown, and that currently, physical separation of domestic sheep or goats from wild sheep is the only effective means to reduce the potential for pneumonia-type disease transmission (WAFWA 2012; BLM

2016).We agree that locating strays and monitoring bighorn movements is difficult in the remote/rugged terrain in the allotments and between allotments (EIS pg 29). In the analysis area, it is impossible to always know how many bighorns have had contact with domestic sheep (case example in CPW files). Contact between domestic sheep and bighorn sheep has been documented multiple times within the analysis area (Wilson's Landing, Placer Gulch, Burns Gulch). Unreported and undetected contact events are highly probable, given the presence of stray domestic sheep, foraying bighorn behavior, and contact events within the analysis area, and the rugged and remote terrain.

CPW has carried out bighorn euthanasia management actions in two cases where bighorn and domestic sheep comingled; there are five other documented cases where euthanasia could not be carried out. The application of grazing BMPs complimented by CPW's intent to euthanize bighorn that have contacted domestic sheep does not ensure that the transmission of disease will not occur given the remote and rugged terrain and lack of contact detectability in the analysis area - an issue acknowledged in the EIS (pg 29). The EIS should be modified to acknowledge that these efforts alone do not definitively reduce the risk of contact and possible disease transmission to Rocky Mountain bighorn sheep." (pg 39, 41, 43).

Economic Analysis:

We appreciate the economic analysis regarding bighorn sheep hunting. As noted (pg 60), the analysis area has the potential to influence the availability of ~19% all bighorn sheep licenses in the state of Colorado. Given the inter-herd dynamics documented in this analysis area by CPW, it is conceivable that a major disease die-off event could indeed influence the entire meta-population and severely impact hunting opportunity within the state.

CPW is currently restricting the size of the S33 and S21 bighorn herds due to the risk of disease from domestic sheep (Diamond and Banulis 2012). Assuming that the bighorn sheep habitat within the allotments became inhabited, the winter habitat could sustain ~100 more bighorn sheep based on current estimates of carrying capacity (Diamond and Banulis 2012). This estimated increase is likely conservative. A larger population size could sustain an increase in the number of bighorn sheep licenses available to the public.

Cumulative Impacts:

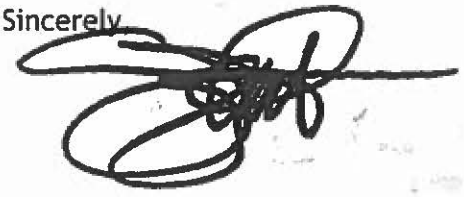
CPW recognizes that the analysis area is only one part of a larger landscape comprised of a patchwork of domestic sheep allotments and bighorn herds. We encourage the BLM to conduct NEPA analysis in adjacent BLM lands and in cooperation with NEPA analysis on adjacent USFS lands. In many cases, analyses of these adjacent allotments are impacting not only the same bighorn herds examined in this current analysis, but also the same set of permittees.

Conclusion:

CPW supports effective separation of bighorn and domestic sheep. Please consider that this analysis area is unique and presents a unique set of circumstances making the implementation of BMPs for herders and CPW (i.e., bighorn euthanasia) difficult due to a vast rugged and remote landscape. We understand that BLM has not yet selected a preferred alternative in the current

draft EIS. We look forward as a cooperating agency (MOU dated March 2016) to working with BLM to develop the Final EIS that will help guide the effective management and conservation of bighorn sheep and Gunnison sage-grouse in Southwestern Colorado. If you have any questions, or would like to discuss our recommendations, please feel free to contact me.

Sincerely,



Cory Chick, SW Region Manager

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