



The following comprises the comments prepared by Garfield County in response to the Bureau of Land Management’s Northwest Colorado Greater Sage Grouse Draft Resource Management Plan and Draft Environmental Impact Statement (DEIS)

Date: December 2, 2013

[The following comments are formatted such that they are meant to address specific portions of the DEIS in a linear fashion from the beginning of the document. For the ease of the reader, a page number and actual text from the DEIS for reference will be provided in ***bold italics*** followed by a comment on that section.]

Main Document

Pg. xxxii: “No PPH, PGH, or linkage/connectivity habitat would be delineated under Alternative A. Goals and objectives for BLM-administered and National Forest System lands and mineral estate would not change. Appropriate and allowable uses and restrictions pertaining to such activities as mineral leasing and development, recreation, utility corridor construction, and livestock grazing would also remain the same. The BLM/USFS would not modify existing or establish additional criteria to guide the identification of site-specific use levels for implementation.”

- Add the requirements already listed in BLM Manual 6840 and USFWS Manual 2600 which require special management of candidate species habitat.
- The DEIS fails to acknowledge the fact that there are existing laws, regulations and policies that mandate the BLM and USFS manage habitat for candidate, sensitive, threatened, endangered and other special species designations.
- Add the fact that existing goals and objectives include managing candidate species so that they do not become listed, thus the No Action alternative is compatible with GRSG conservation.
- Change to state that the BLM/USFS are mandated by existing laws, regulations and policies to modify existing uses to protect candidate species and the GSG.

- Add a section to explain that USFWS did not direct BLM and USFS to rewrite RMPs and LUPs. Instead, USFWS merely pointed out that they did not have the ability to assess regulatory mechanisms because of how the information was being reported. As stated by USFWS at 75 FR 13976 – “the BLM...reported information at a different scale than was used for their landscape mapping. Therefore, we lack the information necessary to assess how this regulatory mechanism effects sage-grouse conservation...” USFWS was not looking for new regulatory mechanisms. It seems clear from the Warranted but Precluded determination that the agency was seeking evidence that the current regulatory mechanisms would be implemented and documentation of the effectiveness of those mechanisms.
- After reviewing the exact language of the Warranted but Precluded determination, BLM and USFW need to rewrite the No Action Alternative to clearly explain existing regulatory mechanisms in place as well as the authority under existing laws, regulations and policies, to protect and conserve sage-grouse habitat.

Executive Summary

ES.5 (Page xxix) Planning Criteria

- In direct conflict with the legal requirements, the BLM did not develop the Planning Criteria with Garfield County as a local Cooperating Agency. The draft policies contained DEIS do not meet the Planning Criteria as proposed by the BLM.

ES.1 (Page xxiii): “The planning area incorporates the PPH, PGH, and linkage/connectivity habitat. Though the planning area includes private lands, decisions are made only for BLM and USFS federal surface and federal minerals in this LUPA. Management direction and actions outlined in this LUPA apply only to these BLM-administered and Routt National Forest lands within the planning area and to federal mineral estate under BLM administration that may lie beneath other surface ownership; this is defined as the decision area.”

- This statement is misleading at best because the BLM has chosen to delineate Management Zones that include large areas of private land (private minerals and surface) and proposes to manage a disturbance cap program on those lands. The disturbance cap program, by design, will have an indirect impact on private land activities / disturbance by effectively holding cap space hostage on public lands hostage while cap space is consumed on private lands. The BLM states here that the “management direction and actions outlined in this LUPA apply only to BLM-administered lands”, yet the BLM specifically states in Appendix F that it will inventory disturbance on private lands in the cap management program which is a direct contradiction. (Please refer to Section II, page 6 of Exhibit C to the County’s comments that identifies a major concern regarding impacts to existing leaseholders in contrast to how the BLM proposes its disturbance cap management program.)

ES.1 (Page xxii): “This LUPA addresses GRSG habitat within northwest Colorado. The BLM’s Northwest Colorado District office has mapped this habitat preliminarily, in coordination with the Colorado Department of Natural Resources, Parks and Wildlife (CPW). GRSG habitat falls into one of the three following categories:

- **Preliminary Priority Habitat (PPH) - Areas that have been identified as having the highest conservation value to maintaining sustainable GRSG populations; include breeding, late brood-rearing, and winter concentration areas.**
- **Preliminary General Habitat (PGH) - Areas of seasonal or year-round habitat outside of priority habitat**
- **Linkage/Connectivity Habitat - Areas that have been identified as broader regions of connectivity important to facilitate the movement of GRSG and to maintain ecological processes**

PPH and PGH are considered preliminary until a decision on this document is made, at which point they would become Priority Habitat and General Habitat. Collectively, PPH, PGH, and linkage/connectivity habitat are referred to as all designated habitat (ADH).”

- The BLM uses maps in this EIS provided to them by CPW for the PPH, PGH, and ADH. These maps are currently defined by the BLM as “habitat” maps; however, in coordination meetings hosted by Garfield County as well as with Mike King, Executive Director of DNR and CPW, CPW explains that these maps are based on CPW’s Sensitive Wildlife Habitat map that is actually designed and used by CPW as a tool to require consultation only rather than a map that explicitly defines habitat as suggested by the BLM. (Please refer to Exhibit D, Letter to Mike King dated October 21, 2013.)
- This meeting reaffirmed that CPW developed and uses two maps regarding the management of GSG in Colorado which include the Sensitive Wildlife Habitat (SWH) map and the Restricted Surface Occupancy (RSO) map. It was made clear that the SWH map does not accurately delineate actual habitat; rather, it is used as a reference tool intended to require consultation for potential development within its boundaries and should not be construed as a map depicting any form of a “No Surface Occupancy” (NSO) policy. Additionally, the RSO map is intended to define a 0.6 mile buffer round an active lek with the purpose of prohibiting development activity. We also understand that the SWH map has been sent to the BLM in the form of the Preliminary Priority Habitat (PPH) map for use in their EIS. Further, CPW intends to adjust this Preliminary Priority Habitat (PPH) map with recent data collected by Dr. Brett Walker which is anticipated to more accurately define the PPH boundaries. Once this has occurred, Garfield County requests CPW to resubmit that revised map to the BLM for use in the EIS. (CPW staff also reaffirmed that the acceptable margin of error for distance from plotted bird locations was no greater than 50 meters.)
- There appears to be a fundamental disconnect between how CPW designed and uses the SWH map as a basis for consultation versus how the BLM is using the PPH map for project-specific land management policies and “in-the-field” decisions. As explained specifically to the County by

CPW staff on September 5, 2012 in a County Coordination meeting, this BLM - PPH map (which is CPW's SWH map) was generated at a 50,000-foot level not intended for specific "on-the-ground" land use management. Again, the County urges CPW and DNR (**Exhibit D**) to continue to provide that comment and direction to the BLM on the draft EIS. In effect, it should be made clear that the BLM - PPH map (based on CPW's SWH map) should be better defined as a Wildlife Consult Map that should not be confused with actual habitat for which the BLM is to manage for the survival of the bird.

- The County has analyzed CPW's SWH map and found it to be problematic if it is used for localized land use decisions. First, the habitat model designed by Dr. Mindy Rice et al. 2013 was done so using data on a moving 1-kilometer scale (0.6 mile grid cells). In doing so, it inaccurately typed large areas that do not include habitats known to support GSG such as pinyon-juniper, mixed conifer forest, and aspen groves. Furthermore, numerous other criteria that are known to directly influence suitable greater sage-grouse habitats were, admittedly by design, excluded from the habitat model, including slope parameters, relevant landforms, percent canopy cover, etc. Again, this model approach is too coarse to be used as an effective local habitat management tool which Dr. Rice specifically notes in her paper.
- In the design of the SWH map, CPW has applied an arbitrary four-mile buffer (eight-mile diameter) around active leks. (The four mile distance is believed to be the distance from the lek where 80% of the hens will nest.) However, this distance also assumes the birds will be nesting in their commonly understood habitat as is commonly found to be true in large expanses of gently rolling sage brush communities in Wyoming, Montana, etc. Garfield County does not have these same expanses of rolling sage brush communities; conversely, the habitat is severely fragmented in a scattered patchwork of sage brush on hill tops intermixed with large areas of non-habitat vegetation communities such as aspen, conifer, pinyon-juniper, etc. Moreover, the area in Garfield County also contains large areas of slopes (in excess of 30%) that are not known to support GSG. So, the County opposes an arbitrary application of a four-mile buffer around an active lek which captures thousands of acres of non-habitat where other land uses and activity could occur without requiring involvement from government agency oversight for the management of the GSG.
- Prohibition on surface disturbance within 4 miles of a lek in PPH, including during the lekking and early brood-rearing period when there is no specific cause and effect mechanism cited and the prohibition is solely based upon the subjective opinion of the NTT and opinions expressed in selected reports and publications. The DEIS effectively proposes "protecting" large areas (~50 square miles) of non-habitat and marginal habitat surrounding each lek without any demonstrable benefit to sage grouse populations, ignoring more appropriate conservation actions suited to local ecological conditions, and basing the presumed benefits of this recommendation upon speculation. (Please refer to **Exhibit M**: "How the NTT Report Changes the Way the BLM Operates" which contains internal BLM emails obtained through FOIA that underscore the BLM's own concern for lack of scientific citations and data to support opinions rather than actual science used in the NTT Report.)
- The scientific justification for requiring 4-mile buffers and surface disturbance caps (whether they are 1, 3, or 5%) is entirely based on the opinions of selected authors (some of whom were NTT members) and the erroneous assumption that a local and temporary displacement of sage grouse from an area of development means that a population decline has occurred. However,

none of the cited studies actually ever documented a population decline. One of the most frequently cited studies, the unpublished dissertation by Holloran (2005), was wrong in all of its predicted population declines. To the contrary, recent data from the state of Wyoming has documented that the sage grouse population in Pinedale actually experienced an overall increase from 1990 to 2012. Throughout that time period, it has consistently been above statewide averages and has the highest density of sage grouse in the state. (Please refer to **Exhibit M**: “How the NTT Report Changes the Way the BLM Operates” which contains internal BLM emails obtained through FOIA that underscore the BLM’s own concern for lack of scientific citations and data to support opinions rather than actual science used in the NTT Report.)

- CPW’s SWH map (which is used by the BLM as the PPH map) is also based on the agency’s “Occupied Range” map which appears to be an internal map maintained primarily by research staff and updated based on field-observations over time. This is problematic because the data used to inform this map is specific to individual professional opinion which may vary from time to time depending on individual field personnel and is not reproducible. In recent discussions with CPW staff, it became apparent that these opinions stray far from data that is cited in the literature from CPW biologists as to the accepted criteria for what defines habitat and where the GSG are commonly located within that habitat. The DEIS needs to disclose and clarify how changes in “occupied range” will be managed over time to address unoccupied habitats and newly discovered habitats.
- The County recently spent considerable resources to produce a highly accurate Suitable Habitat Map which is attached as **Exhibit B** to this packet of information. This map is a result of creating two distinct models (a weighted overlay model and a fuzzy overlay model). These models were driven by criteria developed from an exhaustive literature review using CPW’s own occupied habitat driven criteria (including slope, distance to forest, canopy cover, landforms and vegetation community). In addition, the Garfield County habitat model utilized a vegetation dataset with a much higher degree of accuracy, based on performing a supervised image classification process on 2-meter cell resolution color-infrared photography. Moreover, in recent meetings with CPW to validate our mapping, it became clear that our mapping had a high degree of correlation to relevant / recent bird location data points collected by CPW’s Dr. Brett Walker. In doing so, our model captured 92 percent of the bird locations within 100 meters of our habitat model. An important additional correlation is made with a high degree of accuracy when CPW’s lek data is overlaid on Garfield County’s Suitable Habitat map which is attached as Exhibit B to this letter. It should also be understood; the County’s Suitable Habitat map was created with a transparent process and is reproducible. To the contrary, after considerable effort, we found that the PPH / PGH map is not reproducible and is based on data that the BLM refuses to release to the public in order that it is verified.
- The net result proved that the PPH / PGH map in the DEIS has inaccurately mapped large areas of non-habitat (pinion-juniper, fir, and aspen groves) on the Roan Plateau in Garfield County as priority habitat. As understood in terms of acres, while BLM’s PPH map has mapped approximately 220,000 acres as priority habitat in their PPH map, Garfield County’s Suitable Habitat map identifies only 59,093 acres of suitable habitat. This is a 73% reduction in habitat in Garfield County. Put another way, the PPH / PGH map was developed with such a broad brush approach, it erroneously captured approximately 160,907 acres of land that does not have GSG habitat characteristics supported by relevant peer-reviewed literature and ‘data-verified’ field

observations. By doing so, it will have the practical effect of requiring a land owner to consult with CPW and BLM on projects that are clearly cited in areas of non-habitat.

- The DNR and CPW made it clear that the SWH map (PPH / PGH / ADH maps in the DEIS) is intended to be used as a tool for consultation only for projects within its borders and not specifically designed as an actual 'habitat' map to be interpreted as any form of NSO or otherwise by the BLM in developing land use policy. The County has urged CPW and DNR to continue to provide that direction in their comments to the BLM on the draft DEIS. In effect, it should be made clear that the BLM - PPH map (based on CPW's SWH map) should be better defined as a wildlife consult map that should not be confused with defining actual priority or general habitat for which the BLM is required to manage for the survival of the bird. The net result is that, to date, the BLM has yet to provide an actual habitat map in the DEIS upon which it intends to apply its land use policies in a selected alternative.
- The direction provided in the IM 2012-044 is as follows: *"Through the land use planning process, the BLM will refine Preliminary Priority Habitat and Preliminary General Habitat data (defined below) to: (1) identify Priority Habitat and analyze actions within Priority Habitat Areas to conserve Greater Sage-Grouse habitat functionality, or where possible, improve habitat functionality, and (2) identify General Habitat Areas and analyze actions within General Habitat Areas that provide for major life history function (e.g., breeding, migration, or winter survival) in order to maintain genetic diversity needed for sustainable Greater Sage-Grouse populations."* Despite this direction, the BLM has incorporated CPW's 50,000 foot view consultation maps for the basis for applying policy in the EIS rather than actual habitat maps that acknowledge local site variability in Garfield County such as the suitable habitat map contained in the Garfield County GSG Conservation Plan. The BLM's planning process which included multiple cooperator agency meetings did not provide any discussion on habitat mapping as to its origin or intent of use as specifically testified to by Jim Cagney in a Garfield County Coordination meeting despite the BLM Director's direction in IM-044 to consider new mapping information.

This has effectively resulted in cooperating agencies not having an accurate picture of what the purpose and need of the DEIS is, when on the one hand CPW has indicated that there are large areas of non-habitat captured in PPH/PGH, but then BLM is indicating that policy will be made solely for the protection of GRSG habitats on federal lands. The mapping and policy linkage process is confusing at best, and misleading for cooperating agencies and the public. Further, with the inclusion of habitat cap management maps, the whole issue of what is habitat, what the jurisdictional reach of the BLM will be, and the ability of the public to adequately assess the scope of the DEIS is significantly flawed. We request that the BLM fix the mapping issue in order to cooperating agencies and the public to accurately comment on the DEIS and proposed alternatives.

ES.2 (Page xxvi): "Purpose and Need for the Land Use Plan Amendments"

- This section seems to selectively mention portions of the Instructional Memorandum 2012-044 while omitting other provisions. For example, it fails to mention the following directive from the IM: *"While these conservation measures are range-wide in scale, it is expected that at the regional and sub-regional planning scales there may be some adjustments of these conservation*

measures in order to address local ecological site variability.” The DEIS does not comply with FLPMA’s requirement that there be coordination with local plans in order to resolve inconsistencies between plans. To date, the BLM has refused to resolve the inconsistencies between the policies in the DEIS and Garfield County’s Greater Sage Grouse Conservation Plan and CPW research publications which does address local ecological site variability. We request that the DEIS fully cite IM 2013-044 and not just select sections which limit the public’s ability to accurately assess and comment on the DEIS and alternatives. Further, the DEIS does little to acknowledge or discuss how local information will be incorporated into conservation measures, and we believe this is a fatal flaw of the DEIS.

ES.5: (Page xxx) “Planning Criteria”: “The BLM and USFS will coordinate with state, local, and tribal governments to ensure that the BLM and USFS consider provisions of pertinent plans, seeks to resolve inconsistencies between state, local, and tribal plans, and provides ample opportunities for state, local, and tribal governments to comment on the development of amendments.”

- Garfield County held five (5) coordination meetings with the BLM and CPW staff in order to present and discuss Garfield County’s concerns as well as work through inconsistencies between the BLM’s DEIS process and address “local ecological site variability”. While the BLM has incorporated the County’s Plan in the DEIS as a standalone appendix (Appendix D), it has not sought to resolve inconsistencies between the plan and the DEIS; rather, the BLM shifts that responsibility to the public to provide comment on the County’s plan rather than comply with their legally required responsibility. Specifically, the BLM states in Section 2.6.2 of Chapter 2 the following:

“The alternative is presented in Appendix C, Garfield County Greater Sage-Grouse Conservation Plan, but has not been analyzed in detail primarily because it is contained within the existing range of alternatives. The Garfield County alternative is more restrictive and more focused regarding “modeled suitable habitat” than Alternative A. The alternative is less restrictive and identifies less PPH than Alternatives B, C, and D. Given the Garfield County alternative’s position within the range of alternatives, the conservation measures contained could be selected, in whole or in part, pending detailed analysis in the final EIS. Consequently, the public is asked to review the Garfield County alternative and provide comments.”

- Garfield County has not identified how or where, as stated above, its plan is incorporated within the existing range of alternatives. BLM admits to not providing a detailed analysis of the plan. Further, the BLM shirks its responsibility and direction provided in IM 2012-044 requiring the following: “The BLM must consider all applicable conservation measures when revising or amending its RMPs in Greater Sage Grouse habitat. The conservation measures developed by the NTT and contained in Attachment 1 must be considered and analyzed, as appropriate, through the land use planning process by all BLM State and Field Offices that contain occupied Greater Sage-Grouse habitat. While these conservation measures are range-wide in scale, it is expected that at the regional and sub-regional planning scales there may be some adjustments of these conservation measures in order to address local ecological site variability. Regardless, these conservation measures must be subjected to a hard look analysis (emphasis added) as part of the planning and NEPA processes.” The net result is this DEIS has not provided a hard look analysis of the County’s plan as an alternative or as information towards local ecological site variability, and thus has directly ignored the direction provided in IM 2012-044. We request

the DEIS be re-done to follow IM 2012-044 and allow the public to reassess the impacts of implementation of the alternatives.

- Ignores the substance of local conservation plans, especially the Garfield County sage grouse plan, in favor of one-size fits all restrictions in its alternatives, in clear contrast to the stated position of the BLM. The DEIS lacks a comprehensive and objectively informative analysis of locally-appropriate conservation alternatives that could be used to guide management of BLM lands, while addressing specific threats to sage grouse. The DEIS is deficient in that it does not include conservation strategy for analyzing threats or their specific cause and effect mechanisms, and then mitigating the mechanisms that underlie each threat within the BLM's adaptive management framework. That approach for sage grouse was clearly articulated in the publication by Ramey, Brown, and Blackgoat (2011). (See **Exhibit Q.**)

Chapter 1: Introduction

Introduction – Overview 1.1.1 (Page 4): “The report drafted by the NTT, A Report on National Greater Sage-Grouse Conservation Measures (NTT 2011) provides the latest science and best biological judgment to assist in making management decisions relating to the GRSG.”

- In the field of science when the observations do not match the predictions of a hypothesis or theory, the hypothesis is falsified (i.e., it is wrong). The BLM cannot rely on research that has been found to be wrong. Holloran (2005) is one of the most widely cited studies in the DEIS, yet his predictions have been unfounded. (See **Exhibit Q.**)
- Furthermore, the BLM cannot rely on research whose authors relied on belief to reach their conclusions when the results lacked any statistical significance. One of the key studies cited in the NTT Report did exactly that: Lyon and Anderson (2003) erroneously characterized oil and gas development as having a negative effect on sage grouse nest initiation rates. That unsupported opinion, clearly contrary to the available data and analysis, has subsequently been cited by the BLM as a scientifically valid conclusion in the NTT Report, which portrays all oil and gas development in a negative light. The DEIS (page 516) then cites the NTT Report in support of its statements that negative effects have been reported 4-miles from oil and gas development: *“Recent studies have consistently demonstrated that oil and gas development and its infrastructure influence GRSG behavior and demographics at distances of up to 4 miles (NTT 2011). This prompts declines in lek persistence and male attendance, yearling and adult hen survival, and nest initiation rates. It also elicits strong avoidance response in yearling age classes, nesting/brooding hens, and wintering birds.”* However, as the following quotation indicates, the study by Lyon and Anderson (2003) relied on belief (rather than statistically significant results) to reach their conclusions: *“Finally, even though nest initiation between disturbed and undisturbed hens was not statistically significant, we believe lower initiation rates for disturbed hens were biologically significant and could result in lower overall sage grouse productivity.”* Additionally, Holloran (2005) reported that nest success that was virtually identical and not significantly different between disturbed and undisturbed areas, using a much larger sample size compared to Lyon and Anderson (i.e., n=213 used by Holloran vs. n=77 used by Lyon and Anderson). The BLM cannot base its management decisions on the basis of belief and opinion, while disregarding contrary results. (See **Exhibit Q.**)

- The DEIS needs to acknowledge the alternative hypothesis that sage grouse, like other animals, may be disturbed by human activity and will sometimes move away from it but that does not mean that they suffer a population decline. The birds may have simply responded by relocating, or coexisting with human activity (i.e. habituation). Neither the DEIS or the NTT Report acknowledge that that there has been no population-level decline reported in any of the cited studies, only decreased lek attendance in affected areas. The DEIS needs to be revised to explicitly acknowledge these facts and alternative hypotheses that are consistent with the data.
- The DEIS and the NTT Report do not acknowledge that Holloran (2005) reported results that the probability of sage grouse survival was higher (61.5 +6.4%) in disturbed areas compared to less impacted areas (29.6 +18.1%), or control areas (48.5 +14.4%). These results refute Holloran's (2005) own statements regarding population impacts. Furthermore, neither the DEIS or the NTT Report acknowledge that Holloran's (2005) predicted sage grouse population declines in the Pinedale area, of -8.7 to -24-4% annually, have not occurred. Instead, publicly available lek count data from the State of Wyoming show the population has been steadily increasing. (See **Exhibit Q.**)
- The Information Quality Act (IQA) requires that information used by agencies, including the BLM, be based upon verifiable data and reproducible results, and not based upon opinion. Moreover, the NTT Report cannot selectively use results from Lyon and Anderson (2003), or Holloran (2005) to support its recommendations, while failing to state that they were statistically insignificant and/or contrary to more recent and comprehensive data. And finally, Holloran (2005) did not use any hypothesis testing in his research. Instead, Holloran (2005) relied upon interpretation of data and results (rather than hypothesis testing), speculated on potential mechanisms that could cause a population decline, and did not provide any data that a population decline had actually occurred in the population in the Pinedale area. (See **Exhibit Q.**)
- The following two excerpts from Holloran (2005) best illustrate these issues (the underlining added for emphasis is ours):

"The results from this study suggest that dispersal from developed areas could be contributing to population declines. Although the proportion of potentially displaced adult and yearling males and yearling females breeding and nesting in areas removed from gas field infrastructure is unknown, offsite populations could be artificially enhanced by gas development. Because of potential density-dependent influences on breeding and nesting success probabilities (LaMontagne et al. 2002, Holloran and Anderson 2005), maintenance of these enhanced populations could require increasing the carrying capacity of offsite habitats." And, "adult male displacement and low juvenile male recruitment appear to contribute to declines in the number of breeding males on impacted leks. Additionally, avoidance of gas field development by predators could be responsible for decreased male survival probabilities on leks situated near the edges of developing fields (i.e., lightly impacted leks). Although site-tenacious adult females did not engage in breeding dispersal in response to increased levels of gas development, subsequent generations avoided gas fields, as suggested by the temporal shift in nesting habitat selection and differences in habitat selection by yearling and adult females. This suggests that the nesting population response is delayed avoidance of natural gas

development. The results suggest that male and female greater sage-grouse displacement from developing natural gas fields contributes to breeding population declines."

- Rather than being as conclusive as suggested by the DEIS and the NTT Report, this study was speculative (note use of the terms could, suggested, and potentially) and assumed that hypothetical worst-case scenarios would occur. The BLM cannot rely on the speculative opinion of Holloran (2005) as the basis for its DEIS. (Please refer to **Exhibit M**: "How the NTT Report Changes the Way the BLM Operates" which contains internal BLM emails obtained through FOIA that underscore the BLM's own concern for lack of scientific citations and data to support opinions rather than actual science used in the NTT Report.)

(Pg. xxix: "The BLM/USFS will use will use the Western Association of Fish and Wildlife Agencies Conservation Assessment of Greater Sage-Grouse and Sagebrush Habitats (Connelly et al. 2004) and any other appropriate resources (e.g., GRSG scientific literature) to identify GRSG habitat requirements and best management practices (BMPs)."

Pg. 24: "The BLM and USFS will use the WAFWA Conservation Assessment of Greater Sage-Grouse and Sagebrush Habitats (Connelly et al. 2004), and any other appropriate resources, to identify GRSG habitat requirements and best management practices (BMPs)."

- The discrepancy between stating that habitat descriptions and BMPs would come from the NTT report, when apparently they will also rely on WAFWA, yet curiously omit other very relevant and contemporary reports that provide additional parameters for habitat descriptions and potential BMPs.
- Relying on those reports as the only basis for habitat descriptions would technically exclude the PPR from having viable habitat as it doesn't meet the minimum patch sizes described, as well as other factors.
- There are many other reports that indicate other factors that influence habitat selection, primarily items like slope, landforms etc. There is also other information that have proven to be highly influential in local populations habitat selection; for example, Dr. Walkers work determined that distance from forested stands was an enormous factor in selection for the PPR population. To the point, while a wealth of information exists to better describe habitat selection, it was not utilized by CPW in their development of the PPH/PGH data set. Ultimately, the PPH/PGH data set conflicts with what is stated in the DEIS and furthermore were aware of much more information specific to NW CO populations that could better delineate habitats.

Pg. 25: "For BLM-administered lands, all activities and uses within GRSG habitats will follow existing BLM Colorado Public Land Health Standards. Standards and guidelines for livestock grazing and other programs that have developed standards and guidelines will be applicable to all alternatives for BLM lands."

- The DEIS does not evaluate how the current BLM Colorado Public Land Health Standards and other laws, regulations and policies address regulatory mechanisms to protect sage-grouse habitat.

Pg. 26: “The most current approved BLM and USFS corporate spatial data will be supported by current metadata and will be used to ascertain GRSG habitat extent and quality. Data will be consistent with the principles of the Information Quality Act of 2000.”

- The BLM needs to make the data used to develop the PPH and PGH maps available to be consistent with the Information Quality Act of 2000. The County has attempted to obtain spatial data and metadata through the use of the Colorado Open Records Act for the purposes of verification of our own mapping efforts and to understand the data behind actual bird locations. Unfortunately, the County’s request was denied by the BLM and CPW, and the DEIS is not compliant with the Information Quality Act of 2000. Mapping information should be made available to the public for review.
- The BLM should have a clear and full understanding of the data and maps being provided by CPW as it is one of the most critical components of the DEIS because it is those areas which will be subject to the implementation of the BLM’s policies. As an example of why this is critically important, in Grand County, the County had GRSG habitat re-mapped and validated with CPW bird location data. This exercise revealed three GRSG radio-telemetry points occurring in open waters in William’s Fork Reservoir approximately 280 meters from shore at the farthest point. This contradicts CPW’s assertion that their data have a maximum of 50-meter horizontal imprecision, or the alternative is that GRSG have now begun to select large water bodies as habitat and are swimmers. Ultimately, this is why having a clear knowledge of why birds are in certain locations is critical to understanding the meaning of the location data; the simple presence of a bird does not imply habitat. Unfortunately, the County (and the public) was denied this information as it was not provided despite public requests, nor was this data provided in the DEIS.

Chapter 2: Alternatives

The following comments are offered here as they apply to how the alternatives were derived and treat certain uses. Consider the following:

- 1) The DEIS lacks a comprehensive and objectively informative analysis of locally-appropriate conservation alternatives that could be used to guide management of BLM lands, while addressing specific threats to sage grouse. By ignoring the substance of local conservation plans, especially Garfield County’s Greater Sage Grouse Conservation Plan as an alternative, in favor of one-size fits all restrictions, the DEIS elevates speculative benefits of one-size fits all management prescriptions for sage grouse (recommended by the NTT and conservation groups) above other land use activities, in clear violation of the BLM’s multiple use mandate. The DEIS is deficient in that it does not include conservation strategy (like that in the Garfield County sage grouse plan) for analyzing threats, their specific cause and effect mechanisms, and then mitigating each threat within the BLM’s adaptive management framework.

- 2) The DEIS relies on recommendations in the NTT Report but does not acknowledge that these recommendations were influenced by special-interest litigants involved in settlement negotiations with the BLM. Publicly available records, including e-mails obtained under FOIA from the State of Idaho (excerpt below from a December 13, 2011 e-mail from the NTT lead for the BLM) reveal that special interest influence, rather than a transparent, inclusive, and scientifically defensible public process, was used in producing the NTT Report's recommendations:

*"Our timeframe is to complete the "updated" draft NTT report by COB tomorrow so I can ship it back to DC. Due to concerns by solicitors in DC the NTT report will look different. However the content is generally the same and due to the science review we did make changes to the Goals and Objectives section, some conservation measure in fluid minerals have been updated (i.e. 2.5% has been changed to 3% with rationale). The Policy recommendation change has undergone significant clarification again based on solicitor concerns in DC. **The solicitor concerns with the Policy recommendation piece stems from ongoing litigation discussions they currently having with litigants over BLM's recently completed LUPs.**" (See **Exhibit M.**)*

The BLM cannot rely on such tainted sources as a basis for its analysis and alternatives in the DEIS.

- 3) The DEIS presents a negative view of virtually all oil and gas development and is biased in its presentation of outdated information. The DEIS and its cited supporting studies failed to mention the existence of the following:
- a. Up to date information on the extensive mitigation and restoration efforts in the Pinedale Planning Area and elsewhere (see <http://www.wy.blm.gov/jio-papo/index.htm>);
 - b. Advances in technology and efficiency available on the BLM's own website and in the BLM presentations to the NTT ("Managing Oil and Gas" and "Best Management Practices" available in Appendix 5, pp 48-55 of the August 29 to September 2, 2011 NTT meeting summary);
 - c. More efficient operations and mitigation efforts further documented in Ramey, Brown, and Blackgoat (2011).
 - d. Neither the DEIS nor the NTT Report that the DEIS it relies upon, acknowledges that nearly all of these measures have been implemented in the years since Holloran's (2005) data gathering occurred (from 1997 to 2003). The BLM cannot rely on a selective presentation of outdated information as the basis of its DEIS alternatives. It must rely on data and information that is current. (See **Exhibit Q.**)
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Pg. 38-39: – No Action Alternative – “Goals and objectives for BLM-administered lands and mineral estate would not change. Appropriate and allowable uses and restrictions pertaining to activities such as mineral leasing and development, recreation, construction of utility corridors, and livestock grazing would also remain the same. The BLM would not modify existing or establish additional criteria to guide the identification of site-specific use levels for implementation activities.”

- Change to state that goals and objectives already include protecting candidate species including sage-grouse, such that they do not become listed as threatened or endangered.
- Change to explain that under existing law, regulations and policies, appropriate and allowable uses and restrictions may need to be adjusted to assure the habitat conditions for sage-grouse are considered.
- Change to state that BLM has the authority under existing laws, regulations and policies to modify existing and establish additional criteria to guide identification of site-specific use levels for implementation activities.
- Add statement regarding the BLM Colorado's Standards and Guideline - *Standard 4*. Special Status, Threatened, and Endangered Species (state and federal) – BLM is already legally mandated to manage lands to maintain or enhance GRSG by sustaining healthy, native plant and animal communities.

Pg. 73: No Action Alternative: “Colorado River Valley RMP: Make adjustments to grazing management (e.g., AUMs, periods of use, allotments, class of livestock, distribution) based on monitoring. Grand Junction RMP: Manage vegetation to meet BLM Standards for Public Land Health and Guidelines for Livestock Grazing Management in Colorado while taking in to account site potential as determined by ecological site inventories, Range/Ecological Site Descriptions, Soils, completed Land Health Assessments, and site-specific management objectives. Implement changes in livestock use through allotment management plans, grazing use agreements, and terms and conditions on grazing permits for priority allotments based on the current prioritization process and/or land health issues.”

- Throughout the DEIS, add thorough and honest discussions of what regulatory authority the agencies have under the No Action Alternative. As stated above, BLM and USFS are currently making adjustments to grazing based on monitoring of sage-grouse habitat.
- In addition, the DEIS fails to mention successes that have been achieved under existing regulations. For instance, there is evidence that GSG populations in NW Colorado (Moffat County) are at least stable if not increasing under current regulations.

Pg. 74-75: No Action Alternative – “Revise or implement allotment management plans/grazing use agreements to resolve conflicts between grazing and management of soils, riparian, and water resources. Kremmling RMP: Standard Operating Procedure (Required by Colorado Public Land Health Standard #4). Little Snake RMP: Identify and initiate restoration and rehabilitation of sagebrush habitat while maintaining a mosaic of canopy cover and seral stages. Special status, threatened and endangered species, and other plants and animals officially designated by the BLM and their habitats

are maintained and enhanced by sustaining healthy, native plant and animal communities Guidelines for Livestock Grazing Management A-3, #7, "Natural occurrences...should be combined with livestock management practices to move toward the sustainability of biological diversity across the landscape, including the maintenance, restoration, or enhancement of habitat to promote and assist recovery and conservation of threatened, endangered, or other special status species by helping provide natural vegetation patterns, a mosaic of successional stages, and vegetation corridors thus minimizing habitat fragmentation." Roan Plateau RMP: Ensure that Land Health Standards are being met through Land Health assessments, and application of the GSFO (CRVFO) Monitoring Plan. Use a combination of administrative solutions (season of use revisions, livestock exclusion, and stocking level adjustments) and rangeland projects (fences, ponds, etc.) to direct livestock use to meet resource objectives and Land Health Standards. White River RMP: Standard Operating Procedure (Required by Colorado Public Land Health Standard #4). Routt National Forest: Manage forage for livestock and wildlife based on specific habitat area objectives identified during allotment management plan revision (Management Area Prescription for 5.11, 5.12, 5.13, p. 2-40, p. 2-43, 2-45). Design livestock grazing prescriptions to include achievement of wildlife goals for deer and elk winter range (Management Area Prescription 5.41, p. 2-48)."

- As discussed above, the BLM and USFS should make it clear to the DEIS readers including USFWS, that the existing RMP and LUP provide a plethora of regulatory mechanisms to manage and protect GRSG habitat as well as other multiple use objectives. This remains a fundamental failure of the DEIS.
- With the implementation of the No Action alternative, GRSG can be effectively protected and their habitats maintained. Currently the DEIS provides only a biased assessment of effects, and presents a skewed position that one of the action alternatives must be selected in order for GRSG to be protected. We request the BLM re-assess the No Action alternative and incorporate the actual laws and regulations it currently is required to operate under.

Pg. 75 – 77: No Action Alternative - Colorado River Valley RMP: "Make adjustments to grazing management (e.g., AUMs, periods of use, allotments, class of livestock, distribution) based on monitoring. Grand Junction RMP: Manage vegetation to meet BLM Standards for Public Land Health and Guidelines for Livestock Grazing Management in Colorado while taking in to account site potential as determined by ecological site inventories, Range/Ecological Site Descriptions, Soils, completed Land Health Assessments, and site-specific management objectives. Implement changes in livestock use through allotment management plans, grazing use agreements, and terms and conditions on grazing permits for priority allotments based on the current prioritization process and/or land health issues. Revise or implement allotment management plans/grazing use agreements to resolve conflicts between grazing and management of soils, riparian, and water resources. Kremmling RMP: No similar action. Little Snake RMP: Sustain the integrity of the sagebrush biome to maintain viable populations of GRSG...consistent with local conservation plans. Identify and initiate restoration and rehabilitation of sagebrush habitat while maintaining a mosaic of canopy cover and seral stages. Roan Plateau RMP: Ensure that Land Health Standards are being met through Land Health surveys, and application of the GSFO Monitoring Plan. Use a combination of administrative solutions (season of use revisions, livestock exclusion, and stocking level adjustments) and rangeland projects (fences, ponds, etc.) to direct livestock use to meet resource objectives and Land Health Standards. White River RMP: Monitor, evaluate, and adjust livestock management practices to meet resource objectives. Routt National Forest: Develop site-specific vegetation utilization and residue

guidelines during rangeland planning, and document them in allotment management plans. In the absence of updated planning or an approved allotment management plan, apply the utilization and residue guidelines in Tables 1-2 and 1-3 (Range Guideline, p. 1-9). Table 1-2. Allowable Use Guidelines Table 1-3. Riparian Vegetation Residue Allowances Season of Use and Existing Rangeland Condition • Spring Use Pasture: Satisfactory=4 Inches, Unsatisfactory=6 inches. • Summer and Fall Use Pasture: Satisfactory=6 Inches and Unsatisfactory=6 Inches Manage forage for livestock and wildlife based on specific habitat area objectives identified during allotment management plan revision (Management Area Prescription for 5.11, 5.12, 5.13, p. 2-40, p. 2-43, 2-45). Design livestock grazing prescriptions to include achievement of wildlife goals for deer and elk winter range (Management Area Prescription 5.41, p. 2-48). Ecological Site Descriptions have not been developed for the Routt National Forest and we are not currently using them in NEPA or Allotment Management Plan revisions. The Routt National Forest completes Rangeland Health Assessments based on the R2 Rangeland Analysis and Management Training Guide (US Department of Agriculture, Rocky Mountain Region 1996) in NEPA and Allotment Management Plan revisions.”

- As discussed above the explanation of the No Action Alternative needs to be rewritten to explain every law, regulation, policy, plan and other regulatory mechanism already in place that allows the agencies to adjust livestock grazing and other resource management actions to protect and conserve GRS habitat. The above statement is one of many that prove the agencies already have all necessary tools. Alternatives B, C and D are unnecessary.

Pg. 75: Alternative B - (ADH) “Work cooperatively on integrated ranch planning within GRS habitat so operations with deeded/BLM and/or USFS allotments can be planned as single units.”

- Existing laws, regulations and policies allow this.
- Add this regulatory measure to the No Action Alternative and do it for both GRS habitat and non GRS habitat because it is good land management.

Pg. 77: Alternative B – “(PPH) Prioritize completion of land health assessments (USFS may use other analyses) and processing grazing permits within GRS PPH areas. Focus this process on allotments that have the best opportunities for conserving, enhancing or restoring habitat for GRS. Utilize BLM Ecological Site Descriptions (USFS may use other methods) to conduct land health assessments to determine if standards of range-land health are being met.”

- Add information to the No Action Alternative explaining that existing RMPs, LUPs, laws, regulations and policies already permit these prioritization and assessments.

Pg. 78: No Action Alternative – “a) the PNC, high seral and healthy mid-seral; b) sagebrush rangelands with a high to mid-seral plant community providing suitable habitat for deer winter range, GRS, and antelope. 2) Improve the present plant species composition on unhealthy or at risk rangelands to a healthy plant community within 10 years on all areas with a mid-seral and within 20 years on all areas with a low-seral plant community. Routt National Forest: Manage forage for livestock and wildlife based on specific habitat area objectives identified during allotment management plan revision

(Management Area Prescription for 5.11, 5.12, 5.13, p. 2-40, p. 2-43, 2-45). Design livestock grazing prescriptions to include achievement of wildlife goals for deer and elk winter range (Management Area Prescription 5.41, p. 2-48). Ecological Site Descriptions have not been developed for the Routt National Forest and we are not currently using them in NEPA or Allotment Management Plan revisions. The Routt National Forest completes Rangeland Health Assessments based on the R2 Rangeland Analysis and Management Training Guide (US Department of Agriculture, Rocky Mountain Region 1996) in NEPA and Allotment Management Plan revisions.”

- Add explanation regarding the fact that BLM has the regulatory authority to accelerate the rangeland improvement under the No Action (Current Management) Alternative and the USFS has the regulatory authority to redesign livestock grazing prescriptions to include achievement of wildlife goals for GRSG.

Pg. 79 – 80: No Action Alternative – “Colorado River Valley RMP: Make adjustments to grazing management (e.g., AUMs, periods of use, allotments, class of livestock, distribution) based on monitoring. Grand Junction RMP: Manage vegetation to meet BLM Standards for Public Land Health and Guidelines for Livestock Grazing Management in Colorado while taking in to account site potential as determined by ecological site inventories, Range/Ecological Site Descriptions, Soils, completed Land Health Assessments, and site-specific management objectives. Implement changes in livestock use through allotment management plans, grazing use agreements, and terms and conditions on grazing permits for priority allotments based on the current prioritization process and/or land health issues. Revise or implement allotment management plans/grazing use agreements to resolve conflicts between grazing and management of soils, riparian, and water resources. Kremmling RMP: Common to all -Interpreting Indicators of Rangeland Health Tech Ref 1734-6. Little Snake RMP: Overall habitat goals for the sagebrush biome and GRSG established. Roan Plateau RMP: Ensure that Land Health Standards are being met through Land Health surveys, and application of the GSFO (CRVFO) Monitoring Plan. Use a combination of administrative solutions (season of use revisions, livestock exclusion, and stocking level adjustments) and rangeland projects (fences, ponds, etc.) to direct livestock use to meet resource objectives and Land Health Standards. White River RMP: Livestock and big game management techniques will be used to retain ~50 percent herbaceous growth by weight through September 15, on GRSG brood and nest habitats. Routt National Forest: Manage forage for livestock and wildlife based on specific habitat area objectives identified during allotment management plan revision (Management Area Prescription for 5.11, 5.12, 5.13, p. 2-40, p. 2-43, 2-45). Design livestock grazing prescriptions to include achievement of wildlife goals for deer and elk winter range (Management Area Prescription 5.41, p. 2-48). Ecological Site Descriptions have not been developed for the Routt National Forest and we are not currently using them in NEPA or Allotment Management Plan revisions. The Routt National Forest completes Rangeland Health Assessments based on the R2 Rangeland Analysis and Management Training Guide (US Department of Agriculture, Rocky Mountain Region 1996) in NEPA and Allotment Management Plan revisions.”

- Add the fact that both agencies already have regulatory authority under BLM Colorado Public Lands Health Standards, BLM Manual 640 and FSM 2600 to design livestock grazing prescriptions to protect and conserve GRSG habitat.

Pg. 79: Alternative B – “(ADH) Conduct land health assessments that include (at a minimum) indicators and measurements of structure/condition/composition of vegetation specific to achieving GRSG habitat objectives (Doherty et al. 2011). If local/state seasonal habitat objectives are not available, use GRSG habitat recommendations from Connelly et al. 2000b and Hagen et al. 2007.”

- We recommend adding this guidance to Alternative A after correcting the reference to Connelly et al. 2000b. According to the references listed on Page 999 of the DEIS, Connelly et al. 2000b refers to a publication titled “Effects of predation and hunting on adult sage-grouse *Centrocercus urophasianus* in Idaho. *Wildlife Biology* 6:227-32.” A thorough reading of that publication did not reveal GRSG habitat recommendations. As a result, the DEIS has misapplied this citation to the DEIS and should be removed.
- To assist the reader in understanding the DEIS recommendation, add: Hagen et al 2007 agreed with the GRSG management guidelines for breeding habitats published by Connelly et al. (2000), recommending 15-25% sagebrush cover, 10% forb cover, 15% grass cover and 18-cm grass height. However, per Hagen et al (2007), citing Bates et al. 2004, because “these measurements are generally recorded over relatively small scales (30 m), identifying the appropriate proportions of these vegetative characteristics in a larger landscape is paramount.”

Pg. 80-82: No Action Alternative – “Colorado River Valley RMP: Assess vegetation attributes within grazing allotments to ensure that BLM Colorado Standards for Public Land Health and Guidelines for Livestock Grazing Management are met per established protocols and technical references. Grand Junction RMP: Manage vegetation to meet BLM Standards for Public Land Health and Guidelines for Livestock Grazing Management in Colorado while taking in to account site potential as determined by ecological site inventories, Range/Ecological Site Descriptions, Soils, completed Land Health Assessments, and site-specific management objectives. Implement changes in livestock use through allotment management plans, grazing use agreements, and terms and conditions on grazing permits for priority allotments based on the current prioritization process and/or land health issues. Revise or implement allotment management plans/grazing use agreements to resolve conflicts between grazing and management of soils, riparian, and water resources. Kremmling RMP: No similar action.

Little Snake RMP: • Manage for a diversity of seral stages within plant communities. • Restore natural disturbance regimes, such as fire, and vegetation treatments to accomplish biodiversity objectives. • Establish desired plant communities in coordination with stakeholders across the LSFO. • Restore a diversity of seral stages within sagebrush communities • Maintain large patches of high - quality sagebrush habitats, consistent with the natural range of variability for sagebrush communities in northwest Colorado. Roan Plateau RMP: Ensure that Land Health Standards are being met through Land Health surveys, and application of the GSFO Monitoring Plan. Use a combination of administrative solutions (season of use revisions, livestock exclusion, and stocking level adjustments) and rangeland projects (fences, ponds, etc.) to direct livestock use to meet resource objectives and Land Health Standards. White River RMP: Acceptable desired plant communities will be managed in an ecological status of high-seral or healthy mid-seral for all rangeland plant communities. An exception may be provided for wildlife habitat -areas where specific cover types are needed. The required cover type in those wildlife habitat areas will be the desired plant communities. The ecological status of a desired plant community in specified wildlife habitat areas could be lower than high seral. In which case, the desired plant communities will be managed, at a minimum, to maintain an at-risk rating (Table 2-6 of Appendix D [of the White River RMP]) and have a stable to improving

trend in ecological status. Routt National Forest: Develop site-specific vegetation utilization and residue guidelines during rangeland planning, and document them in allotment management plans. In the absence of updated planning or an approved allotment management plan, apply the utilization and residue guidelines in Tables 1-2 and 1-3 (Range Guideline, p. 1-9) as described above.”

- As discussed above, the No Action Alternative clearly has regulatory mechanisms in place to protect and conserve GRS habitat, as demonstrated by the above information as well as the litany of other BLM and FS laws, regulations, policies and manual direction.
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Pg. 80: Alternative B – “(ADH) Develop specific objectives to conserve, enhance or restore GRS PPH based on BLM Ecological Site Descriptions (USFS may use other methods) and assessments (including within wetlands and riparian areas). If an effective grazing system that meets GRS habitat requirements is not already in place, analyze at least one alternative that conserves, restores or enhances GRS habitat in the NEPA document prepared for the permit renewal (Doherty et al. 2011b; Williams et al. 2011).”

- Since these tools are available under the No Action Alternative, the DEIS needs to be rewritten to fully define the No Action Alternative. After the No Action Alternative is rewritten, the agencies should be able to conclude that existing RMPs and LUPs have adequate regulatory mechanisms in place necessary to protect and conserve GRS habitat.
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Pg. 82: No Action Alternative - ...

- To avoid further repetition, please see above and incorporate those comments into the entirety of Tables 2-3 and 2-4.
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Pg. 80: Alternative B – “(ADH) Develop specific objectives to conserve, enhance or restore GRS PPH based on BLM Ecological Site Descriptions (USFS may use other methods) and assessments (including within wetlands and riparian areas). If an effective grazing system that meets GRS habitat requirements is not already in place, analyze at least one alternative that conserves, restores or enhances GRS habitat in the NEPA document prepared for the permit renewal (Doherty et al. 2011b; Williams et al. 2011).”

- Since these tools are available under the No Action Alternative, the DEIS needs to be rewritten to fully define the No Action Alternative. After the No Action Alternative is written, the agencies should be able to conclude that existing RMPs and LUPs have adequate regulatory mechanisms in place necessary to protect and conserve GRS habitat.
-

Pg. 130, 132 etc.: Alternative C – “Some bird species prefer to nest in undisturbed cover. In areas where these species are a primary consideration, manage livestock grazing to avoid adverse impacts to nesting habitat.”

- Delete this statement throughout the DEIS. Insert - Manage livestock grazing to attain GRSG goals for percent vegetation (sagebrush, other shrubs, grasses and forbs) necessary for shelter, feeding and breeding.
 - The use of the word “Some” bird species....is not helpful in reaching any conclusions. Which bird species is the DEIS specifically referring to? What is the objective foundation for this conclusion? (Please refer to **Exhibit M**: “How the NTT Report Changes the Way the BLM Operates” which contains internal BLM emails obtained through FOIA that underscore the BLM’s own concern for lack of scientific citations and data to support opinions rather than actual science used in the NTT Report.)
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Pg. 132: Alternative C. – “Hold project proponents, including livestock operators, ROWs holders, and other permittees deemed necessary by the Authorized Officer, responsible for monitoring and controlling noxious weeds that result from any new facilities, improvements or other surface disturbances authorized on BLM land (e.g. roads, communication sites, pipelines, stock ponds, fences). Little Snake RMP: Monitor, prioritize, and treat noxious weeds.”

- The RMP should not include provisions that are impossible to implement and enforce. How would the requirement be enforced? Wouldn’t it take more time to monitor and enforce the provision than to leave land management agencies in charge of noxious weed control? Would some noxious weed treatments require cultural resource or threatened and endangered species surveys prior to implementation? How would ranchers and others know when these surveys are triggered? Roads, pipelines, fences, etc benefit many users. How would the work be split up? Does the BLM want to make the project proponents responsible and waive sovereign immunity to hold them accountable?
-

Pg. 133: No Action Alternative – “Require the use of weed free hay and feed for livestock. Require weed control actions for all disturbances, including hose less than 1 acre in size. “

- We suggest the weed free hay statement be deleted as unnecessary. The Colorado BLM and Colorado Forest Service already require weed free hay and feed for livestock.
 - Change “hose” to “those”
-

Pg. 136: Alternative B – “(PPH) During fuels management project design, consider the utility of using livestock to strategically reduce fine fuels (Diamond at al. 2009), and implement grazing management that will accomplish this objective (Davies et al. 2011; Launchbaugh et al 2007). Consult with ecologists to minimize impacts to native perennial grasses consistent with the objectives and conservation measures of the grazing section.”

- Add this measure to all alternatives.
-

Pg. 154: Alternative C - “(ADH) Authorize no new water developments for diversion from spring or seep sources within GRSG habitat.”

- In general, Alternative C has too many fatal flaws to go into great detail about each one. However, a few comments will be included in this review. The statement above is one of many examples of why Alternative C is not reasonable. Saying “no” to anything perceived as unnatural is not good natural resources management. There are times and places when the authorization of new water development for diversion from spring or seep sources within GRSG habitat will benefit GRSG. As an example, a new water development that diverts water from a badly trampled wild horse spring or seep and uses that water to irrigate a meadow to increase herbaceous vegetation near GRSG nesting habitat could benefit GRSG chicks as well as other wildlife resources.

Pg. 154: Alternative C – “(ADH) Avoid grazing and trailing within lekking, nesting, brood-rearing, and winter habitats during periods of the year when these habitats are utilized by GRSG.”

- As discussed above, Alternative C is fatally flawed – natural is not realistic nor is it the best management practice in many cases. Avoiding grazing within leks, nesting, brood-rearing, and winter habitats when GRSG are present goes against science.
- As noted by sage-grouse biologists Gary Back and Donald Klebenow, sage-grouse tend to be found where cattle are present in meadows. Sage-grouse avoid ungrazed meadows. Dense, grassy meadows that are grazed lightly or moderately are attractive to sage grouse. Oakleaf (1971) indicated that grouse seemed to avoid meadows where dense stands of grass or grasslike species were dominant. Controlled grazing was recommended as a tool to prevent grass stands from becoming too dense. Essentially, the logic goes like this: if the DEIS eliminates ranchers, then there is no grazing which then leads to no GSG. Is that the desire of the DEIS?
- Scientific data demonstrate the positive correlation of livestock grazing and sage-grouse habitat health (See Davies, Back, McAdoo, Klebenow, Back, Burkhardt, etc).
- There is a risk in discontinuing livestock grazing during periods when sage-grouse are present if the current GRSG populations are currently healthy. The unintended consequences of this action include driving more ranchers out of business, which results in subdivision of ranchland which increases fire danger, noxious weeds, predators, non-native vegetation, and other factors that could result in harm to existing sage-grouse populations that are acclimated to current conditions.

Pg. 155: Alternative D – “Sagebrush or 15 percent canopy cover of Mountain Sagebrush. Manage for a total disturbance cap of less than 30 percent, to include all loss of sagebrush from all causes including anthropogenic disturbance, wildfire, plowed field agriculture, and vegetation treatments. This cap is applied to PPH that supports sagebrush ecosites in the Colorado MZ. Sites capable of supporting

sagebrush habitat will count against the cap until they have recovered to at least 12 percent canopy cover in Wyoming big sagebrush and 15 percent in mountain big sagebrush dominated areas (Bohne et al. 2007)."

- The DEIS is unclear or completely omits the studies that specifically support the BLM's use of "thresholds" such as 15% sagebrush canopy cover and 30% disturbance cap. Without specific citations from scientific studies, these provisions appear to be completely arbitrary. The DEIS needs to provide information about how and where these thresholds were determined, how they relate to Colorado, and re-evaluate the impacts they will have on other resources in the planning area as well as the socioeconomic impact they will have on the planning area, or else the Final EIS documents will not likely withstand legal or scientific scrutiny. Moreover, we find the DEIS to be arbitrary in that it appears to simply extrapolate the science from one area and apply to another.

Pg. 161:

GRSG PPH NSO-46d. Apply NSO stipulation for fluid mineral leasing in PPH.

- The DEIS states that areas within PPH and PGH "does not contain large continuous sagebrush stands" (Pg 245), and on Pg 256 the DEIS states "Hagen (1999) found GRSG distribution in Piceance Basin to be highly clustered, implying that the availability of suitable habitat was, therefore, also clustered." Also, the DEIS states "Habitat potentially suited for use by Parachute-Piceance-Roan GRSG comprises only 16 percent of the mapped overall range. Although this pattern moderates at lower elevations where ridgeline habitats broaden, bird distribution tends to be confined to higher elevations (greater than 7,400 feet in the east, greater than 7,700 feet in the west) and modeled habitat at lower elevations supports few birds."

Based on these facts, applying NSO's within non-habitats is essentially disallowing multi-use activities to occur which do not impact sage-grouse habitats. The DEIS indicates that only 16% of the PPR area actually supports GRSG habitat. The use of the PPH and PGH maps in areas of non-habitat is not accurate and unduly burdens non-habitats. Please explain what the intent of the PPH and PGH maps are, if within the PPR area, they encompass is 84% non-habitat. (See Page 256 of the DEIS.)

GRSG ADH NSO-46d. Apply NSO stipulation for fluid mineral leasing in ADH within a minimum distance of 0.6-mile from active leks.

- How often will lek data be updated? Who will update the lek data, and how will this data be made available to the public?

GRSG ADH TL-46d. Within ADH, prohibit surface occupancy within a minimum of 4 miles from active leks during lekking, nesting, and early brood rearing.

- Is this NSO only for suitable GRSG habitats, or does this include non-GRSG habitats?

Pg. 166:

GRSG PPH Notice to Lessees-54d. Within PPH, complete Master Development Plans instead of single-well Applications for Permit to Drill for all but exploratory wells.

- As the DEIS fully discloses that within the Roan Plateau area around 84% of the area mapped as PPH is actually non-habitat, please explain why a MDP is necessary if activities avoid GRSG habitats.
-

Pg. 186: Alternative C – “(ADH) Avoid sagebrush reduction/treatments to increase livestock or big game forage in occupied habitat and include plans to restore high-quality habitat in areas with invasive species.”

- This measure is illogical. GRSG need mosaics of sagebrush, grass and forbs. It vegetative management that increases livestock or game forage also improves GRSG habitat, it should be promoted.
-

Pg. 189 – Alternative C – “Areas closed to grazing 1,702,800 acres”

- This measure is illogical. What is the rationale for concluding that sage-grouse will benefit from elimination of livestock grazing on over 1.7 million acres? The elimination of grazing would most likely increase the potential for catastrophic fire; which in turn would increase the potential for the spread of invasive species, which would then take decades to restore sagebrush ecosystems after wildfires.
- As detailed in “Saving the sagebrush sea: An ecosystem conservation plan for big sagebrush plant communities’ Davies et al (2011) state that “In contrast to heavy grazing, moderate levels of grazing with periods of rest and/or growing season deferment do not negatively impact sagebrush plant communities (West et al., 1984; Courtois et al., 2004; Manier and Hobbs, 2006). Properly managed livestock grazing can also decrease risk, size, and severity of wildfires (Diamond et al., 2009; Davies et al., 2010a) and thereby decrease the risk of post-fire exotic annual grass invasion (Davies et al., 2009). Though appropriately managed grazing is critical to protecting the sagebrush ecosystem, livestock grazing per se is not a stressor threatening the sustainability of the ecosystem. Thus, cessation of livestock grazing will not conserve the sagebrush ecosystem.”

Chapter 3: Affected Environment

Pg. 211: “Uncontrolled livestock grazing in riparian areas and degradation of willow shrub riparian systems may adversely affect” Wilson’s warbler.

- This statement is purely speculative as it uses the word “may”. If the DEIS is unable to state that uncontrolled grazing will actually have an adverse impact, then the argument for limited grazing fails.

- By definition, livestock grazing on BLM and USFS lands is “controlled.” This statement needs to be qualified or deleted. Where is there “uncontrolled livestock grazing” within the planning area? Why is there “uncontrolled livestock grazing”? What is “uncontrolled livestock grazing”?
- Later in the DEIS, on pages 334 – 335, authors do recognize that all livestock grazing on BLM lands is controlled: “Active grazing use authorization, management actions, and long term rangeland health in each allotment are monitored and evaluated, based on existing data. Adjustments are made by agreement or decision in accordance with legislation, regulations, and policy to ensure that public land resources are maintained or improved for future commodity and non-commodity values. Resource specialists use a variety of tools to monitor rangeland health including a series of rangeland health indicators that help them make determinations regarding the relationship between livestock grazing and the Colorado Standards for Public Land Health (see **Appendix K**, BLM Standards for Public Land Health and Guidelines for Livestock Grazing Management in Colorado).
- Later in the DEIS, on pages 336, authors also recognize that livestock grazing on USFS lands is controlled: “All allotments on the Routt National Forest are managed under allotment management plans and annual operation instructions that implement livestock grazing standards and guidelines of the Routt National Forest Revised Forest Plan ROD (USFS 1998).”

Pg. 226: “GRSG are considered a sagebrush ecosystem obligate species. Obligate species are those species that are restricted to certain habitats or to limited conditions during one or more seasons of the year to fulfill their life requirements. GRSG are only found where species of sagebrush exist.”

- This statement is contradicted throughout the document. While asserting above that GrSG are only found where sagebrush exists, the document implies the utilization of other habitats by GrSG not considered sagebrush communities. The cap management program describes the potential for other habitat types to be managed similarly if CPW determines the habitat to contribute to the health of the GrSG population, with no explanation of other habitat types that may support the GrSG. If the GSG is actually not a sagebrush obligate, provide the scientific basis that supports its use of other habitat.

Pg. 242: “As a result, the 156 million acres of sagebrush that existed historically were reduced to 119 million acres by 2004 (Connelly et al. 2004). Currently, sagebrush communities and GRSG are at risk from multiple sources across multiple scales (BLM 2004b). About 56 percent of the potential pre-settlement distribution of habitat is currently occupied by GRSG (Connelly et al. 2004).”

- Connelly (2004) used a hypothetical “pre-European sage grouse distribution” but provides no data or evidence of historic sage grouse habitat or populations. The Final EIS must be based on science, not speculation.
- Connelly’s 2004 monograph relies on extensive GIS analysis to translate speculative habitat conditions into theoretical historical habitat, which is then compared to current potential sage grouse habitat. The theoretical habitat loss since European settlement is calculated through this exercise. Areas known to be historically occupied by sage grouse were not included, and areas

where there is no data of sage grouse occupancy are included. Speculative models are substituted for lack of historic data on sagebrush extent and sage grouse distribution, and are the basis of a mere guess at what was historic habitat. Thus, Connelly (2004) information is misleading, as are the subsequent analyses BLM and USFS use in reliance on Connelly (2004).

- This DEIS is for NW Colorado. The DEIS does not provide Colorado specific science that establishes the historic range of the GSG. It appears that the authors extrapolate unfounded opinions from Connelly's 2004 monograph and apply them to Colorado without scientific foundation.

Pg. 245: "As is the case with the North Eagle/Southern Routt population on the east side of the CRVFO, the Roan Plateau is at the southernmost part of the range for this species. It is incorporated in the Parachute-Piceance-Roan population. Although the area is mapped as preliminary general habitat (PGH), it does not contain large contiguous sagebrush stands. GRSG habitat use studies are ongoing on the Roan Plateau. Currently, the BLM's only data comes from global positioning system monitoring by the CPW where some use was noted in the Anvil Points area. Overall habitat use by GRSG is most likely transitory in nature."

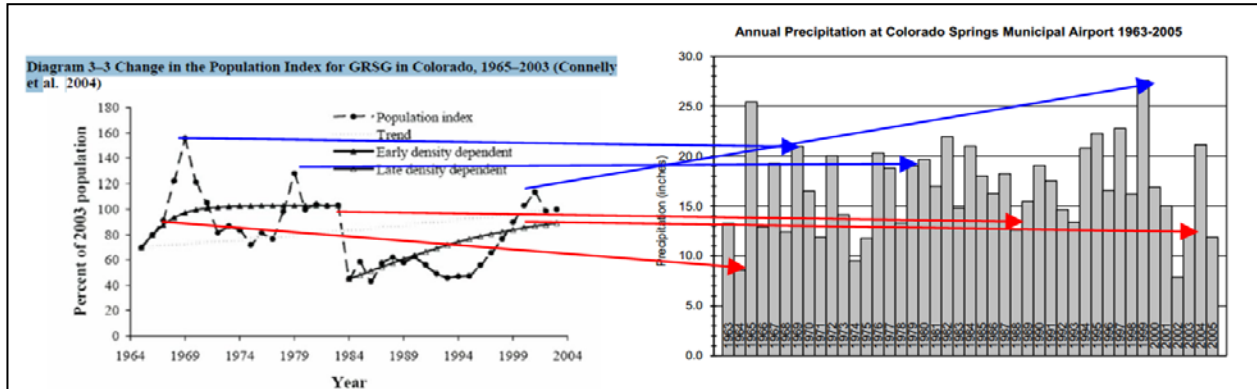
- Referring to the statement "Although the area is mapped as preliminary general habitat (PGH),...", the statement is false and unfounded based on the current CPW PPH/PGH dataset that delineates priority and general habitats. In fact, within the PPR population which totals approximately 365,052 acres, only 144,567 acres (40%) are mapped as general habitat (PGH), while the remaining 220,485 acres (60%) are mapped as priority habitat (PPH). It appears the authors are confusing a small portion of the "Roan" (aka Naval Oil Shale Reserve) in this statement; instead, the "Roan" is actually the entire area encompassed in the PPR mapped area as stated above consistent with the PPR planning area.
- The last statement of the paragraph reads "Overall habitat use by GRSG is most likely transitory in nature.", which suggests that the PPR population is not permanent in nature. If that is the case, by what means are modeled population results measured to ascertain baseline numbers? In addition, if the very nature of the population is unstable due to the 'transitory' use, how is the stability of future populations measured?

Pg. 246: "WAFWA Management Zone II has the largest regional extent and highest breeding density of GRSG in the western US, with several important populations in the Wyoming Basin, including Jackson and Routt Counties, Colorado. Livestock grazing is ubiquitous across these sagebrush ranges, which also have seasonal importance for native ungulates and wild horses (Manier et al. 2013). Changes in land cover and land use are contributing to population declines in this region (Manier et al. 2013)."

- Where did the Manier get the wording for the statement that livestock grazing is ubiquitous? Did the authors of this DEIS examine anything they cut and pasted to see where it came from? The federal agencies and their consultants appear to have stopped thinking and started cutting and pasting words that seem to fit the subject matter, whether they are true and relevant or not. The best we can determine, the statement comes from the 2008 WildEarth Guardians'

Sagebrush Sea Campaign, which was a nonscientific movement by a special interest group. If assumed to be true where livestock grazing is actually ubiquitous in Colorado, then Colorado livestock have begun mountain climbing.

Pg. 254 – Diagram 3-3 (Figure displayed on the left below)



- Did Connelly (Diagram 3-3) and the authors of the DEIS examine GRSG populations in relation to precipitation (figure in the right above)? See <http://geosurvey.state.co.us/water> - for the precipitation example above.
- As shown above, low GRSG population years (1964, 1983, and 2003) in the DEIS figure on the left and high GRSG population years (1969, 1979, and 1999) from precipitation data, directly correlate low and high GSG years with corresponding low and high annual precipitation years.
- Though this in only one example and we were unable to determine exactly where in Colorado Connelly's data was collected in relation to the precipitation data, the point is that more information is needed prior to concluding anthropomorphic changes are causing all or most GRSG population fluctuations. Both natural and anthropomorphic factors need to be examined in relation to GRSG populations.
- Predators are known to be cyclic. Predator population numbers in relation to sage-grouse population fluctuations should be included in the NEPA analysis. All data and graphs used in the EIS should be examined to determine whether the author of the publication used unbiased data. BLM and USFS are responsible for the content of the document. Cutting and pasting information does not constitute adequate NEPA analysis.
- Instead of creating broad sweeping policies that adversely affect the nation, the Department of Interior and Department of Agriculture need to start over and determine the veracity of the data they are using in NEPA documents. The DEIS is fatally flawed.

Pg. 256: "Hagen (1999) found GRSG distribution in Piceance Basin to be highly clustered, implying that the availability of suitable habitat was, therefore, also clustered."

“Due to the peculiar configuration of habitat associated with the Parachute-Piceance-Roan population, these GRSG are believed to be particularly vulnerable to development and habitat-related effects. The characteristic pattern of GRSG habitats in the Parachute-Piceance-Roan are such that each parcel of ridgeline habitat (generally 400 to 1,000 feet in width) is separated from adjacent ridgeline habitats by 1,000-to 3,000-foot intervals of habitat unsuited for occupation or ground movement. Habitat potentially suited for use by Parachute-Piceance-Roan GRSG comprises only 16 percent of the mapped overall range. Although this pattern moderates at lower elevations where ridgeline habitats broaden, bird distribution tends to be confined to higher elevations (greater than 7,400 feet in the east, greater than 7,700 feet in the west) and modeled habitat at lower elevations supports few birds.”

- Both statements above seem to acknowledge the very fragmented nature of suitable habitat areas currently present within the PPR region and even describe the suitable habitat as areas occurring on the broader ridgelines where sagebrush communities exist. While the distinction between suitable habitats in the PPR region is made in the text, it does not appear to be reflected in the PPH/PGH map, as all areas are considered some degree of suitable habitat per the PPH/PGH delineations. Please provide a rationale why PPH/PGH maps, if so inaccurate, are being used to delineate NSO areas, MDP areas operator required BMPs, but then cap management uses ReGAP data to delineate actual habitats. This places significant burdens on the public and operators to plan and negotiate with the BLM and CPW for activities in non-habitats. Please explain this rationale.
- “...habitat unsuited for occupation or ground movement.” This statement seems contradictory; areas that are not suitable for occupation and/or movements should be identified as ‘non-habitat’.

Pg. 421: “In addition, various trends threaten the economic viability of livestock grazing and ranching, and the number and size of ranches is decreasing in parts of the Socioeconomic Study Area, especially in Garfield, Grand, and Routt Counties (BLM 2011a, 2011b).”

As before, many residents expressed concerns that constraints on energy development, mining, and ranching might create economic hardship within their communities. Additionally, some argued that constraints on livestock grazing would exacerbate existing trends of conversion of ranch lands to agricultural and residential uses, perhaps with the unintended consequence of decreasing available GRSG habitat.”

- Garfield County has been uniquely affected by BLM and USFS management actions that continue to decrease the economic viability of ranching, energy development, and mining within the County. (Refer to ***Exhibit D.***)
- We request the DEIS clearly identify benefits livestock grazing provide to GRSG including but not limited to reducing fuel loads, maintaining large expanses of open space that might otherwise be subdivided, increasing vigor of meadows and riparian habitat, etc.

Page 432-434+ – 2007... 2010...2011....2012...

- The economic data for farm, nonfarm, crop and livestock is inconsistent and NOT the “best available science” though the DEIS states on Page 458 that the “best available information pertinent to the decisions to be made was used in developing the LUPA.”
 - The best available scientific data for socioeconomic analysis is 2012 data. The next version of the DEIS should update all socioeconomic data to 2012.
-

Environmental Justice (Page 442 – 443) – 1996 and 1998 economic data from BLM and USFS

- It is particularly egregious to state the DEIS contains the best available data, then use BLM and Forest Service wage data that is 17 years old.
 - The next version of the DEIS must be updated with the real federal salary data from at least 2012.
-

Page 446 – “The placement of salt and mineral supplements could lead to cattle concentration in terrestrial wildlife species habitats. This could displace species, cause nests to be trampled, and reduce habitat quality. Impacts could be both short term and long term and could range from minor to major, depending on the grazing intensity, duration, season of use, and local climate”

- Salt and mineral blocks can be placed away from leks. This livestock management strategy is already in Colorado and other western states. Salt and mineral blocks are a tool for encouraging livestock to concentrate in certain areas. Thus, under the No Action Alternative, the impact, if found, can readily be alleviated.
-

Page 468-469 - “In areas that are available for livestock grazing, there could be more impacts on terrestrial wildlife than in areas where livestock grazing is excluded. The impacts resulting from livestock grazing on wildlife habitat include competition for forage and water and habitat use. Grazing, invariably, reduces the height and ground cover of plants, at least temporarily. This would reduce the cover wildlife species need for protection, escape, feeding (including the availability of prey populations), roosting, breeding, and nesting. Inappropriate grazing, or overgrazing, could change habitat effectiveness and the connectivity of wildlife habitats by changing the structure, composition, or diversity of vegetation. The placement of salt and mineral supplements could lead to cattle concentration in terrestrial wildlife species habitats. This could displace species, cause nests to be trampled, and reduce habitat quality. Impacts could be both short term and long term and could range from minor to major, depending on the grazing intensity, duration, season of use, and local climate.”

- These statements are arbitrary and not based on science. A range conservationist with expertise in livestock grazing and sage-grouse needs to rewrite this section. The paragraph demonstrates lack of knowledge and biased instead of the best available science.

- Before stating that there are impacts from grazing due to “competition for forage and water and habitat use” there needs to be the science that demonstrates that any of these factors are limiting to the sage grouse.
 - The DEIS needs to explain what sage-grouse eat. They eat a variety of foods including sagebrush, forbs and insects. Of these items, cattle really only have the potential to compete for forbs. Why? Because sagebrush is not nutritious for cattle or other livestock: its characteristic aroma comes from chemicals evolved to poison herbivores. Cattle will eat sagebrush if they have to, but enough of it will make them sick, kill off their gut bacteria, and generally cause them to lose vigor. Livestock don’t eat insects so here is no competition there, though there is science to prove livestock increase insect production and benefit sage-grouse chicks. Unless water can be shown to be a limiting factor for sage-grouse in portions of Colorado, this impact is also misstated.
-

Page 469 – “Alternative A would allow livestock grazing, with no restrictions in place to protect GRSG habitat specifically and therefore would have the greatest impact on terrestrial wildlife.”

- This sentence needs to be rewritten as follows: Alternative A requires federal land management agencies to manage livestock and other resources to protect GRSG habitat. BLM and USFS laws, regulations, policy and manual direction make the protection of GRSG habitat mandatory so as not to lead to listing of this or any other candidate or special status species. Under the No Action Alternative, livestock grazing would continue to be managed and monitored to assure GRSG habitat is conserved and maintained such that the GRSG does not need to be listed.
-

Page 469 – “Alternative B would have the same areas available for livestock grazing as Alternative A; however, more restrictions would be in place to protect GRSG habitat, so it would have fewer impacts on terrestrial wildlife.”

- Rewrite to state – Alternative B would have the same areas available for livestock grazing as Alternative A; however, more restrictions would be in place to protect GRSG habitat, so it would have greater adverse impacts on the livestock industry and economy.
-

Page 469 - “Alternative C would have no areas available for livestock grazing within ADH and therefore would have the fewest impacts on terrestrial wildlife.”

- Rewrite to state - Alternative C would have no areas available for livestock grazing within ADH and therefore would violate FLPMA. This alternative would also cause irretrievable and irreversible impacts to ranchers, the local economy and the national economy. As with the timber industry, once it is shut down, the skilled worker base and industry infrastructure deteriorate. This alternative would trigger ranches to be sold, subdivisions to be built, open space to be lost, noxious weeds to increase, catastrophic fires to increase, and the irreversible loss of GRGS and their habitat.”

Page 469 – “Alternative D is similar to Alternative B but would be slightly more restrictive. This is because GRSG habitat objectives within grazing allotments would be applied to ADH and not just PPH. This alternative would have fewer impacts than Alternative A and would have greater impacts than Alternative C.”

- Rewrite to state - Alternative D is similar to Alternative B but would be slightly more restrictive. This is because GRSG habitat objectives within grazing allotments would be applied to ADH and not just PPH. This alternative would have more adverse impacts to GRSG than Alternative A and would have greater impacts than Alternative C. The alternative would violate FLPMA and create the most significant adverse irretrievable and irreversible impacts to ranchers, the local economy and the national economy. This alternative would cause the greatest irreversible loss of GRGS and their habitat.

Page 493 – “Impacts are most likely to occur in site-specific areas where improper grazing is occurring. Improper livestock grazing could result in direct adverse impacts at site-specific locations to select streams containing sediment-intolerant aquatic species.”

- Where is “improper grazing” occurring and why? Under the No Action Alternative, if there is “improper grazing”, both BLM and USFS have the ability to correct the problem.

Page 493 – “Livestock grazing could lead to changes in vegetation plant species and functional group composition through vegetation removal, disturbance, and trampling and increased potential for weed introduction and spread. Livestock and wildlife grazing in riparian areas can prevent regeneration of woody and herbaceous riparian vegetation necessary to stabilize stream banks. Grazing can also reduce litter and fine fuel loading, which could alter fire size and severity.

Livestock often use riparian areas for water and shade, which may cause greater impacts on these areas by concentrating livestock use. Livestock could cause impacts by altering stream functionality and vegetation structural diversity. Livestock could also contribute to the spread of invasive species in riparian areas.

Livestock grazing can increase sediment load in streams from animal concentration areas, collapsing banks, stream-channel alteration, and vegetation removal in riparian areas. Increased sediment in streams, rivers, and reservoirs decreases the potential for wild fish to reproduce, fills in pools, leads to channel degradation, and increases stream temperatures. Changes in water temperature also would result from changes in the amount of vegetative cover. Changes in the aquatic habitat would lead fish to alter their uses of the stream, moving to different areas for feeding and spawning, depending on habitat conditions.

Livestock near aquatic systems could change coldwater aquatic habitat quality through nutrient inputs from manure (Larsen et al. 1994). In addition, livestock grazing could change aquatic habitat connectivity when they are allowed next to or within aquatic systems; grazing could alter bank stabilization and water quality and thus alter habitat conditions in certain areas. Water developments near tributary creeks could affect the hydrologic regime of these systems by withdrawing water.”

- Rewrite as: Though there are numerous examples of riparian areas being historically overgrazed, federal and state agencies have enacted laws, regulations and policies to stop this practice. In particular, in 1997 Colorado has enacted the BLM Colorado Public Land Health Standards to ensure proper livestock management. Sixteen years later, many grazing management strategies are being used to restore riparian systems in Colorado. Recent experience has shown that with proper grazing, livestock can be present while stream systems are improving.
 - Managed livestock grazing could lead to changes in vegetation plant species and functional group composition by maintaining vegetation at a healthier, early seral stage. Livestock and wildlife grazing in riparian areas can prevent degradation and decadence of woody and herbaceous riparian vegetation and stabilize stream banks. Grazing can also reduce litter and fine fuel loading, which could reduce fire size and severity.
-

Page 494 - "In areas that are available for livestock grazing, there would be more impacts on aquatic wildlife from vegetation management activities and range improvements than in areas where livestock grazing is excluded."

- Rewrite to state: In areas that are available for livestock grazing, there would be more beneficial impacts on aquatic wildlife from vegetation management activities and range improvements than in areas where livestock grazing is excluded. Where livestock are excluded, riparian vegetation can peak at a climax stage that results in low diversity, low palatability and decadent grass and forbs. Fires burn hotter in ungrazed habitat and significant losses of GRSG habitat could occur.
-

Page 494 - "Areas available for livestock grazing would primarily be associated with vegetation management and range improvements, such as fencing, water developments, weed treatments, chemical, biological, or mechanical vegetation treatments, burning, and seeding of disturbed areas or weed-treated areas. The primary impacts from rangeland vegetation management are habitat alteration and increased sediment loading and turbidity. Where treatments are occurring in watersheds containing occupied habitats of sediment-intolerant species (e.g., trout, sculpin species, and mountain whitefish), there is an increased risk of the identified impacts to occur because these species require cold, clear, well-oxygenated water in which to thrive."

- Rewrite to state that "Areas available for livestock grazing would primarily be associated with vegetation management and range improvements, such as fencing, water developments, weed treatments, chemical, biological, or mechanical vegetation treatments, burning, and seeding of disturbed areas or weed-treated areas. The primary impacts from rangeland vegetation management are short term habitat alteration and increased sediment loading and turbidity followed by long term habitat improvements and decreases in sediment loading and turbidity as vegetative management strategies take hold. Where treatments are occurring in watersheds containing occupied habitats of sediment-intolerant species (e.g., trout, sculpin species, and mountain whitefish), both BLM and USFS laws, regulations and policies require additional best

management practices are used to avoid adverse impacts to species requiring cold, clear, well-oxygenated water in which to thrive.”

Page 494 – 496 – To avoid being repetitive, the impact section on livestock grazing needs to be rewritten. Old literature and cut and paste of irrelevant, antiquated statements about all of the negative effects of livestock grazing need to be rewritten by professional range specialists that are knowledgeable about the current state of livestock grazing in Colorado. The old rhetoric needs to be discarded. An honest, objective analysis of livestock grazing, under current laws and regulations is needed.

Page 496 – “In areas that are available for livestock grazing, there would be more impacts on aquatic wildlife from water depletions than in areas where livestock grazing is excluded.”

- The entire section on water depletion needs to be rewritten. Unless water is a limiting factor in a certain area, the analysis lacks validity.
- How much water do GRSG need? When? How often?

Chapter 4: Environmental Consequences

Pg. 507: “Not all habitats within mapped priority and general GRSG ranges are capable of supporting GRSG populations.”

- The above statement acknowledges that many ecological sites capable of supporting sagebrush present within the mapped priority and general GrSG ranges are not capable of supporting GrSG populations. This seems to imply that the mere presence of sagebrush communities does not, in and of itself, determine suitable habitat for the GrSG. Accepting that statement, will a distinction be made between effective and ineffective ecological sites capable of supporting sagebrush? If so, how will the distinction be made and applied? Will the ineffective sites be a component of the cap management disturbance program? If so, why, if the areas are essentially determined to be of no habitat value to the species?

Page 512 – 513 – Delete the following outdated information, much of which is not data from Colorado:

~~In areas that are available for livestock grazing, there could be more impacts on GRSG than in areas where livestock grazing is excluded.~~

~~Potential impacts of herbivory (plant eating) on GRSG habitat include long term impacts of historic overgrazing on sagebrush habitat and GRSG habitat changes due to herbivory (Beck and Mitchell 2000).~~

~~By altering habitat components necessary for GRSG habitats, livestock grazing can impact the suitability and extent of GRSG habitats (Wyoming Sage Grouse Working Group 2003). Holloran et al. (2005) suggest that annual livestock grazing in GRSG nesting habitats may adversely impact the next year’s nesting success.~~

Start the section with “Important objectives in managing livestock grazing are”

Page 513 and 514 – Comparison of Alternatives –

- To avoid being redundant in these comments, we refer you to comments we made regarding Page 469 comparison of alternatives and we recommend a similar rewrite here.
 - Remainder of DEIS – Livestock section is speculative and needs to be updated to reflect current conditions and laws including the BLM Colorado Public Land Health Standards. The antiquated cut and paste analysis perpetuates false claims and an invalid analysis.
-

Pg. 622: “Operators need predictable continuity of operations before acquiring or developing a lease”

- Understanding that the development/implementation season for many areas of northwestern Colorado is ultimately constrained by weather, particularly at higher elevations, how does adding additional timing stipulations that encumber huge portions of developable land during a very constrained implementation season satisfy the assumption that operators need predictable continuity of operations?
-

Pg. 897: Table 4.14. One Year Impact of Management Actions Affecting Grazing on Output, Employment, and Earnings by Alternative

- There should not be dollar signs (\$) in the rows for employment (Alternative B and Alternative D).
-

Pg. 898, second paragraph. [Referring to grazing impacts under Alternative C] “The impact of Alternative C may also be greater than estimated, if the closure of federal lands makes some grazing operations no longer viable.”

- This is an important observation, which also applies to the other alternatives. Grazing on public lands is an essential component for many ranching operations in western Colorado that would not be financially viable without it. Since grazing on public lands typically occurs during about four months out of the year (which is the component included in the economic impact estimates in the EIS), if the loss of grazing access makes those ranches no longer viable, the actual economic impact could be about three times the figures provided in the EIS.
 - Similarly, the same observation should be offered for oil and gas development. The core oil and gas reserves are located in areas that are interwoven public and private lands. Prohibitions on public lands will influence the viability of development on private lands and vice versa.
-

Pg. 902: Table 4.16. Average Annual Impact of Management Actions Affecting Oil and Gas on Output, Employment, and Earnings by Alternative

- We were able to essentially replicate the employment estimates provided in this table based on the assumed total employment impact per well for drilling (13.1 jobs) and completion (8.2 jobs) provided in Table M.21 of Appendix M, and the projected number of wells drilled on the Federal Surface provided in Table M.17 over the 20 year period. Our calculations are within one percent of the numbers provided in Table 4.16.
- The main document (Page 902) notes that “only new wells projected for the future 20 horizon were considered” and “Existing wells would not be impacted ...” It should also note, however, that the employment totals do not include projected new wells on State and Fee Surface, which were evidently also assumed to not be impacted by the management alternatives. However, the text in other areas (such as grazing, on page 896) notes that “although [grazing] on private lands could also be impacted by access restrictions, they are not included in the quantitative estimates but rather discussed qualitatively.” The same would seem to apply to oil and gas wells, but this issue is not noted in the text.
- As noted above, Appendix M (Table M.21) provided the employment to well ratios for drilling and completion that appear to have been used to generate Table 4.16. However, Appendix M also provides estimates of the employment associated with ongoing well production (Table M.22). Since we were able to replicate the employment estimates in Table 4.16 based only on the employment ratios for drilling and completion, it appears that the employment associated with ongoing production from the wells was not included in Table 4.16. This would likely be a substantial number of jobs, particularly as the number of operating wells accumulates over the 20 year period. We calculated the annual oil and gas production jobs based on the employment to production ratios provided in Table M.22 and the projected production volumes from Federal Surface wells provided in Table M.18 (after dividing the volumes by 20 to annualize them). That calculation indicates the difference in average annual production jobs between Alternative A and Alternative C could be another 5,325 jobs. Further, these production jobs are high paying, essentially permanent positions in the community.

Pg. 903, third paragraph. “Alternative C-Management under Alternative C ...”

- In this section related to effects on oil and gas, the paragraphs for Alternative A, Alternative B and Alternative D each begin with a sentence describing why the alternative would affect oil and gas production. The same type of introduction should be included for Alternative C.

Pgs. 906-907, “Impacts on Tax Revenues and Payments to States and Counties”

- As noted in the first paragraph of this section, “the largest impact of management alternatives on county fiscal revenues would be through taxes paid by the oil and gas sector.” However, after making that statement, there is no further discussion about the impacts of the alternatives on county revenues and no comparison of the effects of the alternatives.
- Impacts on county revenues, particularly property taxes, are a major concern for the oil and gas producing counties, where oil and gas properties can be the largest source of county revenues.

On a proportional basis (relative to overall sources of revenue) these effects would be much larger for the affected counties than the changes in state severance tax revenues or federal royalties (which are estimated in this section) would be to the State of Colorado or the federal government. Some effort to quantify these effects on county revenues is crucial in the interest of disclosing the socioeconomic effects of the alternatives.

- To further emphasize the importance of this issue, the Garfield County Assessor’s office recently examined the current contribution of oil and gas properties to the local tax base. That analysis revealed that more than 70 percent of the tax base (assessed property value) for the County government and the RE-2 school district was attributable to oil and gas properties, while more than 90 percent of the tax base for School District 16 was attributable to oil and gas. The analysis also identified a number of fire and hospital districts that rely on oil and gas properties for at least 75 percent of their assessed value. All told, oil and gas-related property tax revenues contributed a total of over \$90 million in 2012 to the County and at least 10 other local government jurisdictions in Garfield County.
- Consider the graph below to illustrate the tax revenues that almost exclusively support towns and special districts in Garfield County that are not considered in the DEIS socio-economic impact analysis. Despite the fact that the BLM did not coordinate with the special districts and towns listed below in the formation of the alternatives in the DEIS, the analysis itself ignores the tax implications of the proposed alternatives to their districts in terms of property tax revenues that maintain their ability to provide services to the district and citizens.

Taxing Entity	2013 Estimated % of			
	2012% of Assessed value Attributable to Oil and Gas	2012 Revenue Attributable to Oil and Gas	Assessed Value Attributable to Oil and Gas	2013 Revenue Attributable to Oil and Gas (Estimated)
Garfield County	73.03%	\$ 39,202,342	70.20%	\$ 27,766,900
Town of Parachute	27.84%	\$ 111,630	22.00%	\$ 76,244
City of Rifle	0.16%	\$ 1,059	0.49%	\$ 2,520
Town of Silt	0.00%	\$ -	0.00%	\$ -
RE-2 School District	78.80%	\$ 16,845,974	76.36%	\$ 11,723,957
School District 16	93.73%	\$ 8,429,264	92.64%	\$ 5,644,774
Burning Mtn Fire Protection District	77.25%	\$ 3,025,665	77.84%	\$ 2,472,041
Debeque Fire Protection District	94.52%	\$ 1,548,867	94.38%	\$ 1,326,773
Grand Valley Fire Protection District	93.89%	\$ 4,220,698	92.72%	\$ 2,801,262
Rifle Fire Protection District	77.71%	\$ 3,856,212	72.19%	\$ 2,317,445
Grand River Hospital District	88.41%	\$ 15,892,975	86.83%	\$ 11,287,653
Totals		\$ 93,134,686		\$ 65,419,569

Pg. 909, third row of initial paragraph. “This 2.95 percent one year impact of Alternative C with respect to Alternative A compares with an average annual employment growth of 1.39 percent in the nine years between 2001 and 2010 ...”

- This text is misleading in several ways. First, the difference in employment between Alternative A and Alternative C is not a one year impact, but is the average annual difference throughout the 20 year period.
- The comparison of the employment effects with average annual employment growth over the previous decade also fails to portray an accurate picture of current socioeconomic realities in western Colorado. Year end 2012 data from the Quarterly Census of Employment and Wages published by Colorado Labor Market information shows that the socioeconomic study area has actually lost more than 14,000 jobs and \$252 million in annual wage earnings since 2007. This corresponds to an annual average decrease in employment of 1.9% per year and average annual decrease in wage earnings of 0.9% per year over the most recent five year period.

Pg. 911, fourth paragraph. “Alternative A -Current management ...”

- The two sentences in this paragraph completely contradict one another. The paragraph needs to be rewritten.

Pg. 912, third paragraph. “Specific communities will also not be impacted in the same way by the management alternatives.”

- This is an important point. The rest of this paragraph focuses on the impacts of changes in grazing for the Town of Walden and Jackson County. While this is a valid example, the largest economic impacts associated with the management alternatives relate to oil and ~~gas~~ ^{gas} related employment. Small and medium sized communities heavily dependent on oil and gas employment and activity, including DeBeque, Parachute, Silt, Rifle, Rangely, Meeker and Craig may also be disproportionately affected. Even Grand Junction, though much larger, could be substantially affected since it is the main service center for the oil and gas industry in western Colorado.

Pg. 914-916, Environmental Justice Impacts

- This section again notes concern about potential disproportionate impacts on Walden and Jackson County, citing a commenter from the Economic Strategies Workshop in 2012. However, the quantitative evaluation of potential environmental justice concerns focuses entirely on county level data for the study area. As suggested in the preceding comment, there are specific and identifiable communities within the study area that may be particularly affected due the large role of the oil and gas industry in their economies. A quick review of 2007-2011 data from the American Community Survey indicates that Craig, DeBeque, Glenwood Springs, Grand

Junction and Walden all have poverty rates above the state average. The most important example of a potential environmental justice impact, however, is probably the Town of Parachute. Based on the ACS data, over 39 percent of the residents in Parachute live below the poverty level, more than three times the state average. In summary, the environmental justice analysis should include identification and evaluation of impacts on disadvantaged communities by place of residence, not just county of residence.

Appendix F: Disturbance Cap Management

General fundamental failure of the DEIS regarding the Disturbance Cap Management Program:

The presumed need for a 3% disturbance cap originated with opinion expressed by Walker et al. (2007) in the discussion of their paper. They stated, "...we believe the conservation strategy most likely to meet the objective of maintaining or increasing sage-grouse distribution and abundance is to exclude energy development and other large scale disturbances from priority habitats, and where valid existing rights exist, minimize those impacts by keeping disturbances to 1 per section with direct surface disturbance impacts held to 3% of the area or less." However, Walker et al. (2007), like Holloran (2005), who had previously proposed a restriction of one well per section, never actually tested the effectiveness of these disturbance caps. Instead they modeled sage grouse response in lek attendance in terms of distance(s) from potential sources of disturbance. Therefore, the need for a 3% disturbance cap (or 1% or 5% caps, and one-well per section) in the NTT Report and DEIS, represents nothing more than the opinions of Holloran (2005) and Walker et al. (2007) that were stated in the conclusions of their papers, and by the NTT members, at least one of whom was an author of the NTT report. The BLM cannot rely on such untested opinion as a basis for its alternatives in DEIS. If it does, it will have effectively replaced the scientific method in implementation of the NEPA (i.e., data, hypothesis testing, and reproducible results) with the opinions expressed by the authors of the cited studies, especially when those opinions are erroneously represented by the BLM as if they were rigorously tested against the data. **(Please refer to Exhibit M: "How the NTT Report Changes the Way the BLM Operates" which contains internal BLM emails obtained through FOIA that underscore the BLM's own concern for lack of scientific citations and data to support opinions rather than actual science used in the NTT Report. This exhibit points directly to BLM's own concerns over a lack of science to support a percentage cap, etc.)**

Pg. F-1: "This cap management approach does not suggest that GRSg use only the most preferred sagebrush habitat."

- This statement (and those quoted below) directly contradicts the statement on page 226 of the main DEIS as true, "*GRSG are considered a sagebrush ecosystem obligate species. Obligate species are those species that are restricted to certain habitats or to limited conditions during one or more seasons of the year to fulfill their life requirements. GRSg are only found where species of sagebrush exist.*"
- Page 245 of the main DEIS: "*As is the case with the North Eagle/Southern Routt population on the east side of the CRVFO, the Roan Plateau is at the southernmost part of the range for this species. It is incorporated in the Parachute-Piceance-Roan population. Although the area is*

mapped as preliminary general habitat (PGH), it does not contain large contiguous sagebrush stands."

- Page 256: "Hagen (1999) found GRSG distribution in Piceance Basin to be highly clustered, implying that the availability of suitable habitat was, therefore, also clustered."
- Page 256: "The characteristic pattern of GRSG habitats in the Parachute-Piceance-Roan are such that each parcel of ridgeline habitat (generally 400 to 1,000 feet in width) is separated from adjacent ridgeline habitats by 1,000-to 3,000-foot intervals of habitat unsuited for occupation or ground movement."
- Page 256: "Adding to this vulnerability, the Parachute-Piceance-Roan population is distributed in clusters across the Piceance Basin and Roan Plateau. The birds' primary distribution across the Cathedral Bluffs and Roan Plateau is divided into two relatively distinct subcomplexes: the Figure Four area to the west and the Barnes Ridge area to the east. Although CPW monitoring of telemetered birds has established that there is regular, but infrequent, interchange among these groups, the large interval of land separating these subgroups (about 9 miles) is relatively devoid of suitable habitat."
- Page 507: "Not all habitats within mapped priority and general GRSG ranges are capable of supporting GRSG populations."

Pg. F-1: (Lines 22-27, Page F-1) "This cap management approach does not suggest that GRSG use only the most preferred sagebrush habitat. Consequently, the Northwest Colorado habitat map does not attempt to make this localized distinction, and most of the provisions of Alternative D apply to habitat designations on the Colorado map without reference to specific ecological sites. However, under Alternative D, management of the disturbance cap is restricted to this preferred sagebrush habitat."

- This directly conflicts with the direction provided to the BLM in the Instructional Memorandum (IM) 2012-044 which requires the BLM to address local ecological site variability. Specifically: "While these conservation measures are range-wide in scale, it is expected that at the regional and sub-regional planning scales there may be some adjustments of these conservation measures in order to address local ecological site variability." As a result, the BLM directly ignored this direction.
- This is further underscored in the IM which states that habitat maps can be refined as new information becomes available. Specifically: "PPH and PGH data and maps have been/are being developed by the BLM through a collaborative effort between the BLM and the respective state wildlife agency, and are stored at the National Operations Center (NOC). These science-based maps were developed using the best available data and may change as new information becomes available. Such changes would be science-based and coordinated with the state wildlife agencies so that the resulting delimitation of PPH and PGH provides for sustainable populations." Garfield County has provided this information to BLM numerous times but CPW and the BLM have refused to acknowledge and incorporate the County's habitat mapping despite the fact that it is based on best available data and is science-based.

- The first sentence states: *“This cap management approach does not suggest that GRSG use only the most preferred sagebrush habitat.”* This seems to say the GSG use more than what has been defined as “most preferred habitat.” However, the last sentence states: *“However, under Alternative D, management of the disturbance cap is restricted to this preferred sagebrush habitat.”* This last sentence seems to say the GSG uses only “preferred sagebrush habitat.” To the reader, these two sentences seem to contradict each other. It appears the BLM does not actually know which type of habitat is truly important in applying the disturbance cap management approach. Recall, the DEIS states that areas within PPH and PGH “do not contain large continuous sagebrush stands” (Pg 245), and on Pg. 256 the DEIS states *“Hagen (1999) found GRSG distribution in Piceance Basin to be highly clustered, implying that the availability of suitable habitat was, therefore, also clustered.”* Also, the DEIS states *“Habitat potentially suited for use by Parachute-Piceance-Roan GRSG comprises only 16 percent of the mapped overall range. Although this pattern moderates at lower elevations where ridgeline habitats broaden, bird distribution tends to be confined to higher elevations (greater than 7,400 feet in the east, greater than 7,700 feet in the west) and modeled habitat at lower elevations supports few birds.”* It would seem that the cap program, if used, should be retooled to be consistent with the data cited in the DEIS.

Pg. F-3: “The initial calculations and the analysis in this document are based on sagebrush maps created using the Regional GAP Analysis Project data, but implementation would be based on site-specific information wherever it is useful. Areas currently dominated by sagebrush, or specially identified by CPW as contributing to the health of GRSG populations, would be included in the analysis and calculations, independent of ecological site maps.”

- This statement appears to stray from previous statement of “The reference to ecological sites supporting sagebrush is intended to focus disturbance cap management on the most preferred sagebrush habitat.” (pg. F-1). The inclusion of the statement, “...or specially identified by CPW as contributing to the health of GRSG populations...” seems to afford great discretion in determining the areas that are managed under the cap management disturbance program, allowing for areas to be managed under the program that are deemed suitable habitat based solely on the judgment of CPW. Accepting the statement on page 226 of the main DEIS as true, *“GRSG are only found where species of sagebrush exist.”*, why would other vegetation communities be proposed to be managed under the cap management disturbance program?
- Who would be responsible for providing site-specific information regarding what is truly habitat? If CPW or the BLM, would they re-map habitats? Would a project proponent be responsible to collect site-specific information? Who would determine what is habitat? Would it be data from the WAFWA report? ReGAP? PPH/PGH maps? If a project proponent expends significant time and resources to provide site-specific data, would CPW/BLM accept this information even through CPW did not “specifically identify” the site-specific information? This places a significant burden on project proponents, with no or at least very vague guidance on how site-specific information would be collected, who would review it, and what the definition of effective GRSG habitat actually is, given the DEIS utilizes multiple maps showing significant differences in what habitat really is, but all maps claim to be “defining” habitat.

- The Cap Management program states that implementation of the cap program would be based on Ecological Sites Supporting Sagebrush in PPH maps (Re-GAP data) as well as site-specific information wherever it is useful. Additionally, the same section goes on to say: *“Areas currently dominated by sagebrush, or specially identified by CPW as contributing to the health of GSG populations, would be included in the analysis and calculations, independent of ecological site maps.”* As one reads these two passages, it essentially says that more than a map will be considered. However, no criteria or standards are offered or defined for those other opinions leaving total and unchecked discretion to CPW or some unidentified authorized officer to make those decisions which is arbitrary. Ultimately this means that while there is a new map delineating specific areas of sagebrush that would be used as the basis for the cap management program, the BLM and CPW will also include other undefined discretionary information at their whim in the field that has not been evaluated, and there is no method proposed for how these areas of non-habitat would also be tracked in the cap management program.
- As noted in Exhibit P, the map of “Ecological Sites Supporting Sagebrush” fails to differentiate between sagebrush habitat quality or use by GSG. As a result, the agencies may be arbitrarily expanding areas subject to the management restrictions outlined in the DLUPA/EIS to areas that do not actually contain active leks or GSG habitat. In addition, there is no scientific evidence that enforcing rigid, uniform restrictions across thousands of acres will actually benefit the species and its habitat, which is counter to the agencies’ objectives for this planning process. These factors undercut the agencies’ ability to work with users of public lands to identify site-specific plans that allow for development while protecting the GSG and high-quality habitat.

Pg. F-3 and 4: “The BLM would not inventory private lands, nor does the BLM intend to monitor the activities of private landowners.”...“Known disturbance on private surface would be considered using air photos as appropriate and included in disturbance cap calculations.”

- The second sentence directly contradicts the first. Merriam-Webster defines the term inventory as “the act or process of making a complete list of the things that are in a place”. If the BLM intends to utilize publicly available aerial photography to map and quantify public land disturbance, thereby creating a list of private land disturbances that are subsequently stored and utilized in a database, then by definition, an inventory has been created. Regarding the statement, “...nor does the BLM intend to monitor the activities of private landowners.”, how would private land disturbances be tracked in the cap management disturbance program if not monitored?
 - Who would be responsible for identifying known disturbances on private surface? Would the BLM conduct the inventory, or would a project proponent be responsible to collect this information? How far out from a project would a proponent or the BLM be looking at activities on private lands? Would this data be available to other project proponents within that area? Who would track the disturbance cap calculations, if different entities are looking at different activities on private lands?
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Pg. F-4: Mitigation

- There is no formal “cap and trade” program associated with this EIS; it is left up to individual “authorized officers” to negotiate with operators on a case-by-case basis at their discretion.
- In-direct Mitigation: The EIS does suggest that there can be “indirect” mitigation such as conservation easements or research projects on private land; however these efforts would not positively affect (add back to) the cap. The EIS goes on to say that these types of efforts “may” warrant approval of projects that use cap space. So, even through a private land owner places their land in a permanent conservation easement to preserve sagebrush (removing the possibility for other beneficial uses forever) the BLM refuses to let it count against creating cap space. Moreover, the BLM states that if you do those things, there is no guarantee that you will receive any benefit and that it is left to the unchecked discretion of some “authorized officer” to make that decision.
- Juniper/Pinyon Encroachment Counts Against the Cap: The natural process of JP Encroachment counts against the cap on both public and private land. It is unclear what measures the BLM will take to do their part in treating this encroachment on BLM to create cap space. The County might suggest the BLM must meet or exceed (in equal acreage) JP treatments on BLM as is completed on private and split-estate...in other words, the BLM must match what the private land owners does to create cap space for JP removal.

Pg. F-4: (Lines 6-19) Management of valid existing rights would be similar to the management of private land. The BLM has no authority to deny valid existing rights; consequently, decisions made by entities with valid existing rights would affect what the BLM can authorize for other potential users of land it administers in the management zone.

- This EIS states it will honor valid existing rights on BLM Land or split-estate; however, those existing rights as they are developed (read: disturbed) will count against the cap even if located on private land within the Management Zone. So, as valid existing rights on private land are developed, those will also count against the cap. So, in effect, even through the BLM has already leased valid rights for anticipated development, they will count the resulting disturbance towards the cap in addition to any ‘new’ leases rights. In this way, the BLM will retroactively apply the provisions of this EIS against already existing valid leases.

Pg. F-4: “Easements on private lands that preserve sagebrush and funding of research are examples of mitigation that would not affect disturbance cap calculations but may warrant approval of projects that use cap space.”

- Why are private lands conservation efforts not considered as credits to the cap management disturbance program, yet disturbances occurring on private lands are counted against the program? Considering the fact that enormous portions of effective habitat coincide with private

lands, does the exclusion of private lands not greatly skew the ability to understand forecasted population dynamics as well as habitat quality? In determining potential impacts to GrSG habitats, it is explicitly stated that private lands will be included in the cap management program with the reasoning that animal species do not respect arbitrary legal/political boundaries and that the end goal is conservation of the specie's entire habitat. To that end, it should stand to reason that any objective assessment in managing and understanding future population and habitat dynamics should be inclusive of private land conservation efforts as well, since they will be highly utilized by the GrSG and are an important source of effective habitat to the species.

Pg F-5: "The authorized officer may authorize disturbance in excess of the 5-percent disturbance cap without requiring additional mitigation with concurrence from CPW under the following scenario: Where data-based documentation is available to warrant a conclusion that GRSg populations in the applicable Colorado GRSg MZ are healthy and stable at objective levels, or increasing, and that a specific proposal for development would not adversely affect GRSg populations due to habitat loss or disruptive activities.

This exception standard has been designed to ensure that sufficient data is in place to warrant the exception. In most cases this exception could require project proponents to fund studies necessary to secure the data-based documentation requirement. These contrasts with a standard where data would be required to prove a proposal would adversely affect GRSg. If the authorized officer finds that the data available is insufficient or inclusive, the exception would not be granted."

- Regarding the potential for project proponents required to fund studies to demonstrate current and future population dynamics, how would this be accomplished? It would seem that this requirement encumbers the project proponent with meeting an objective that is not well, if at all, defined. By what threshold are the populations determined to be 'healthy and stable'? What level of population density is required to achieve a 'healthy and stable' population? At what point would population levels exceed the ability of surrounding habitats to support the population, thereby degrading the health of the existing GrSG population? If the population proposed to be studied is predominately transitory in nature, as has been suggested for the PPR population, what is the baseline population by which future populations should be compared? Would the project proponent be required to fund CPW to perform the studies, or would they have the option of consulting with a third-party independent biologist? If the latter, will a defined framework/method exist to guide the biologist in projecting future population numbers, or will the biologist have the freedom to analyze population dynamics by the method of their choice? Would the populations study be applicable to the entire population of a management zone, or to a restricted sub-population?
- How long or how large of an area would need to be studied? An entire Management Zone? Would funding be used to study GRSg off of public lands? Would studies be available to other entities? If so, then one project proponent may end up funding a large study, which others would benefit from? Or would CPW have the ability to extract funds from multiple project proponents? Would the data from studies be available to the general public? What criteria would the authorized officer use to determine if data is insufficient or inclusive? Who would establish what a sufficient study is? Would the public be able to comment or review a proposed study, or would a study be proprietary as CPW currently adheres to?

- If the BLM is going to pass the burden of funding studies for collecting GRSG data on to project proponents, this “unfunded mandate” needs to be better clarified so that a project proponent can determine what financial, time and administrative burdens they will be faced with for a activity which may be related to mineral extraction, recreation, grazing or other activity on public lands.
- Reliance on archaic and statistically invalid lek-count data collection to estimate sage grouse population trends as a basis for management. The lack of resolution in these data, their non-random sampling, and fact that sage grouse populations are known to fluctuate, means that it would be impossible to discern any pattern in the data that could be used to guide management actions in a timely manner, or that would be scientifically defensible. This would result in a virtual state of paralysis imposed on almost all land use activities.
- The BLM’s approach is to rely on an undefined assessment of whether sage grouse populations are healthy, stable, or increasing. As an example, none of the population trend diagrams in the DEIS contain any confidence intervals around population estimates. This renders the interpretation of any trends derived from those data as meaningless.
- The DEIS relies on an archaic and statistically invalid lek-count data collection system to estimate sage grouse population trends as a basis for management. The DEIS, under Adaptive Management and Monitoring (page 193), describes an “effectiveness monitoring component” to *“identify any changes in habitat conditions related to the goals and objectives of the plan and other range-wide conservation strategies (U.S. Department of the Interior 2004; Stiver et al. 2006; U.S. Fish and Wildlife Service 2013). When available from WAFWA and/or state wildlife agencies, information about population trends will be considered with effectiveness monitoring data (taking into consideration the lag effect response of populations to habitat changes [Garton et al. 2011]). The information collected through the Monitoring Framework Plan outlined in Appendix J will be used by the BLM/FS to determine when adaptive management hard and soft triggers (discussed below) are met.”* However, what the DEIS does not acknowledge is that male lek count data is not randomly sampled and is a statistically invalid measure of population trends, and that the 95% confidence intervals surrounding the estimates are generally larger than the estimates themselves (WAFWA 2008; Ramey et al. *in press*). Therefore, the adaptive management strategy proposed in the DEIS cannot be based upon these statistically invalid measures. (See **Exhibit Q.**)
- Receiving any mitigation credit is also virtually impossible because it is impossible to produce scientifically defensible trend estimates. Case in point, the DEIS (on page 258) states, *“The populations naturally fluctuate, so it is difficult to determine at any given time if a population is increasing, decreasing, or staying stable.”* With this being acknowledged, it is virtually guaranteed that no mitigation credit will be given by the BLM in implementation of the DEIS. Therefore, the DEIS must award mitigation credit based upon the type and extent of mitigation implemented (i.e., see Ramey, Brown, and Blackgoat). (See **Exhibit Q.**)

- The DEIS adaptive management strategy must take into account the fact that any statistically valid and scientifically defensible trend estimate must also take into account the fact that sage grouse populations naturally fluctuate (i.e., the data must be normalized to account for regional fluctuations). (See **Exhibit Q.**)
- And finally, the DEIS provides no reproducible, quantitative definition for what is determined to be a “healthy, stable, or increasing” population. This lack of definitional basis puts the BLM squarely in violation of the Information Quality Act and its management decisions under the DEIS are outside the realm of science. (See **Exhibit Q.**)

Pg. F-5: “A key provision of Alternative D is to limit disturbance in any management zone to less than 5 percent.”

- Is this provision applicable to PPH only, or ADH?
- Does this include private lands within a Management Zone? Who would be tasked with collecting surface impact data on private lands? Who would manage a “Management Zone” impact database?

Pg. F-6: “The authorized officer may consider the relative value to society in terms of employment, tax revenue, and project need versus the potential for impacts on GRSG.”

- How are defined financial metrics (e.g. employment, tax revenues) and relative assessments (i.e. project need) compared to potential impacts on GrSG? What defines potential impacts? Fragmentation of habitat? Seasonal disruptions? Projected population declines? Is there a dollar value applied to individual birds and/or effective habitats to evaluate the financial benefits of a project compared to the financial loss of impacting GrSG?
- Would each project need to provide a socio-economic report so that an authorized officer can weigh the societal benefits? Is there a threshold at which a project is beneficial to the public? Please explain how this would work.

Pg. F-6: “Proposals that appear to make a disproportionate adverse impact on GRSG, compared to the relative value to society, may be deferred or rejected because the authorized officer determines through environmental documentation that the project is not a prudent use of cap space.”

- In the sentence above, the term ‘prudent’ appears to exist solely at the discretion of the approving officer. What relative assurance exists for project proponents if ultimately the project could be denied not by exceeding proposed cap thresholds or negatively impacting GrSG populations, but solely at the personal opinion of the approving officer who may be biased towards conservation efforts or resource development?
- *This seems to be very arbitrary, could you please provide additional information on how an authorized office would weigh a benefit to society vs. a “disproportionate” impact to GRSG.*

Stated objective of Alternative D:

Pg. F-6: "Independent of the surface disturbance caps, the intent of Alternative D is to avoid, minimize, and mitigate surface-disturbing and disruptive activities that could adversely affect GRSG habitat or the ability of GRSG to use it."

Minimizing surface disturbance is achieved through the use of the surface disturbance cap management program:

Pg. F-1: "Alternative D limits anthropogenic disturbance in PPH to less than 5 percent of ecological sites capable of supporting 12 percent canopy cover of Wyoming sagebrush, or 15 percent canopy cover of mountain sagebrush."

Pg. F-2: "Consequently, the BLM would manage a total disturbance cap of less than 30 percent, to include all loss of sagebrush from all causes, including anthropogenic disturbance, wildfire, plowed field agriculture including upland hay, and vegetation treatments. This cap would be applied to all designated habitat in the entire management zone."

The cap management disturbance program is restricted to ecological sites capable of supporting sagebrush as identified through REGAP:

Pg. F-1: "However, under Alternative D, management of the disturbance cap is restricted to this preferred sagebrush habitat."

The cap management disturbance program may also include areas not dominated by sagebrush, but that may provide benefit to the health of GrSG populations, at the discretion of CPW:

Pg. F-3: "The initial calculations and the analysis in this document are based on sagebrush maps created using the Regional GAP Analysis Project data, but implementation would be based on site-specific information wherever it is useful. Areas currently dominated by sagebrush, or specially identified by CPW as contributing to the health of GRSG populations, would be included in the analysis and calculations, independent of ecological site maps."

The 5% cap threshold may be exceeded under specific conditions:

Pg. F-5: "The authorized officer may authorize disturbance in excess of the 5-percent disturbance cap without requiring additional mitigation with concurrence from CPW under the following scenario: Where data-based documentation is available to warrant a conclusion that GRSG populations in the applicable Colorado GRSG MZ are healthy and stable at objective levels, or increasing, and that a specific proposal for development would not adversely affect GRSG populations due to habitat loss or disruptive activities."

A project should be approved so long as proposed activities do not exceed defined thresholds and not negatively impact GrSG populations:

Pg. F-6: "Surface-disturbing activities that do not exceed the disturbance caps would be approved, subject to program-specific provisions found in Alternative D, with the following stipulation: as long as

there is a reasonable presumption that the proposal and disturbance would not entail a decline of GRSG populations due to habitat loss or disruptive activities.”

A potential secondary condition of approval may consider the relative value of the project to society compared to potential impacts of the GrSG population:

Pg. F-6: “The authorized officer may consider the relative value to society in terms of employment, tax revenue, and project need versus the potential for impacts on GRSG. Proposals that appear to make a disproportionate adverse impact on GRSG, compared to the relative value to society, may be deferred or rejected because the authorized officer determines through environmental documentation that the project is not a prudent use of cap space.”

Ultimately, the project will be considered by the BLM, in conjunction with all other managed resources, lending preference to GrSG habitats:

Pg. F-6: “In order to preclude unintended consequences, Alternative D uses the following guideline to assign an appropriate priority to GRSG issues: Consider GRSG habitat requirements in conjunction with all resource values managed by the BLM, and give preference to GRSG habitat unless site-specific circumstances warrant an exemption.”

- As a project proponent, it would appear the following steps would be necessary to determine if a proposed project will be accepted and approved by the BLM:
 1. *Determine if the proposed project falls within delineated PPH or PGH, regardless if the project is actually within GRSG habitat as defined by WAFWA, or if the project is within “preferred sagebrush habitat”.*
 2. *If project occurs within PPH, determine the net amount of project surface disturbance that results from implementation and mitigation within ReGAP mapped ecological sites, and apply to overall cap disturbance to ensure surface disturbance remains below 5% within ecological sites capable of supporting sagebrush within the entire Management Zone. If the Management Zone has not been inventoried for existing disturbances, the project proponent would have to fund someone to inventory the Management Zone, however, it is not specified who would ensure this is accurately tracked, if this work would be accepted by BLM or CPW, or if this information would be available to other project proponents. At this point there is still no validation process for inaccurate ReGAP mapping. If project occurs within PGH, determine the net amount of project surface disturbance that results from implementation and mitigation, and apply to overall cap disturbance to ensure surface disturbance remains below 30% within ecological sites capable of supporting sagebrush, regardless of mapping accuracy.*
 3. *Have site inspected for other potential habitats that may provide benefit to the GrSG population based on CPW consultation. If other suitable habitats are determined to be present, then deduct from cap management program. However, beneficial conservation activities on private lands do not count towards cap management.*

4. *If the project does not exceed the authorized cap threshold of 5%, then the project should be approved, provided that it does not negatively affect GrSG populations through habitat fragmentation or disruption, or at the discretion of a CPW reviewer.*
 5. *If the project exceeds the authorized cap threshold of 5%, then the project may still be considered and approved provided that the project proponent proves that the proposed activities would not adversely affect GrSG populations. The burden of proof would likely be achieved by funding studies of GrSG populations, presumably across the entire Management Zone, with no specified time limit or funding limit, or approved based on mitigation (i.e., funding) additional studies for CPW to conduct.*
 6. *Lastly, as a final condition of approval, the BLM authorized officer may weigh the relative value of the proposed project to potential impacts to GrSG populations, giving preference to the GrSG habitats.*
- Based on the steps outlined above that would be required of all project proponents, at what point would the proponent have assurance that the project would be accepted? It would appear as though there are a set of fairly defined metrics in terms of surface disturbance allowances; however, they are subsequently obscured by the amount of discretion employed at all steps in the alternative in not only evaluating impacts to GrSG habitats, but also the amount of discretion employed in determining what actually is effective habitat, what amount of fragmentation/disruption may be allowed to occur before being deemed impactful, as well as the discretion employed in assessing the relative value of the proposed project to society. Furthermore, at the BLM's and CPW's discretion, it may be deemed necessary to perform a study that demonstrates the continued stability of the GrSG population, without providing a framework for doing so nor indicating the extent of the population required to be studied. Ultimately, it seems as though a project proponent could stay within the defined surface disturbance cap thresholds and still be denied approval based on discretion in determining impacts to the health of GrSG populations; likewise, it appears a project proponent could exceed the stated cap thresholds and still be approved based on discretion of the BLM. With the amount of discretion available to the BLM to approve or deny proposed projects under Alternative D, what assurances exist that GrSG habitats and populations will be conserved and persist?

This framework for assessing potential impacts and approving/disapproving projects does not provide assurances that either: a). a project that does not impact habitat would be approved, or b). actual GRSg habitats would be protected. All it assures is that any recreational, agricultural, mineral, or other activity within the PPH/PGH areas would have to go through a lengthy, expensive, and arduous process. The only assurance is that private landowners, a project proponent, or industry would have to significantly fund third party consultants or CPW to conduct large GRSg studies for an indeterminate amount of time or costs, at the discretion of CPW and BLM, with no assurance of the permitting process. The only assurance from the BLM and CPW that they would be reasonable in the application of this process is "trust us". Given the financial implications and time involved to conduct such studies, the BLM needs to provide a clearer process.

- How is the surface disturbance cap management program implemented and maintained? How are the necessary hardware, software and employee resources funded? How current would the

program be maintained to accurately reflect on-the-ground conditions? Will the public, or project proponents, have access to the database? How would the cap management program contribute to understanding the current and projected health and viability of GrSG populations?

- How would the BLM handle areas that do not support sagebrush, but are mapped by ReGAP as being an “ecological site supporting sagebrush”? What is the process for validating the ReGAP mapping?
- Please define “preferred sagebrush habitat”, as we now have PPH/PGH, ReGAP ecological sites, site-specific validation, and WAFWA definitions of habitat. And evidently this is all up to further interpretation from CPW or the authorized officer.
- Please provide concrete information on how the CPW will identify habitats “contributing to the health of GRSg populations”. Who at CPW would be authorized to make this determination? Are their determinations based on facts and data, or are they a matter of opinion based on an on-site visit?
- Reliance on disturbance caps that have no demonstrable conservation benefit to sage grouse, do not mitigate the cause and effect mechanisms of purported threats, and are based upon opinion rather than data, whether these disturbance caps are 1, 3, or 5%, or one well per section.

Pg. 41: “Birds in this population have been documented to use atypical habitat, including sagebrush/mixed shrub communities where the mountain shrub component is greater than 10 percent (Apa 2010). PPH mapped by CPW has incorporated known seasonal bird movements and habitat use within this population.”

- While Apa (2010) and other CPW staff (Walker pers comm. 2013) indicate that GSG utilize sagebrush habitats with mixed mountain shrub communities components with greater than 10% foliar cover; the incorporation of large, contiguous stands of mixed mountain shrublands, Gambel oak woodlands, aspen and coniferous forests, and pinyon/juniper habitats is not consistent with Apa or CPW’s work in the area. While it is recognized that this population is different from the national range in how they use habitats, the PPH/PGH maps do not reflect GSG habitats or what GSG actually utilize. Drawing huge “red blobs” around the PPR area does not accurately reflect GSG habitats and does not reflect the best, more recent available science from CPW’s own research staff. Further, it ignores numerous studies produced by CPW (CPW 2008, Apa 2010, Walker 2010), and we fail to see how the PPH/PGH maps actually reflect the use of “best available science”
- The statement that PPH have captured "known seasonal bird movements" does not provide evidence that GSG utilize non-habitat types, and does not justify the incorporation of large, continuous stands of aspen, conifer, gamble oak

Pg. 256: “The characteristic pattern of GRSg habitats in the Parachute-Piceance-Roan are such that each parcel of ridgeline habitat (generally 400 to 1,000 feet in width) is separated from adjacent

ridgeline habitats by 1,000-to 3,000-foot intervals of habitat unsuited for occupation or ground movement.”

- This statement acknowledges that the non-habitat areas captured by mapped PPH areas are not utilized for overland movements, directly contradicting previous statements, and introduces ambiguity and multiple confounding baseline conditions which the EIS is based on. We believe that with such conflicting definitions of habitat, the impact analysis in the EIS is flawed at best, and unusable at worst. We request the EIS impact assessment be re-done using an assessment process that accurately identifies suitable GSG habitat, and the likely impacts to actual habitat.

Pg. 256: “Adding to this vulnerability, the Parachute-Piceance-Roan population is distributed in clusters across the Piceance Basin and Roan Plateau. The birds’ primary distribution across the Cathedral Bluffs and Roan Plateau is divided into two relatively distinct subcomplexes: the Figure Four area to the west and the Barnes Ridge area to the east. Although CPW monitoring of telemetered birds has established that there is regular, but infrequent, interchange among these groups, the large interval of land separating these subgroups (about 9 miles) is relatively devoid of suitable habitat.”

- If this is true, then why is such a large area mapped as PPH/PGH and potentially subject to regulations that would unnecessarily encumber operators? The statement above indicates that these areas are not utilized for ground movement; if the areas are not suitable habitat and not utilized for seasonal movements, why are they included at all?

Pg. 201: “Preclude new surface occupancy on existing leases within PPH.”

- The document acknowledges that there are vast areas of non-habitat are captured within mapped PPH (see pg. 256). Will these non-habitat areas also preclude surface occupancy even though these areas provide no substantive benefit for the health and population of the birds? How would precluding surface occupancy in these existing leased areas within non-habitat help GSG if there is admittedly no habitat and no effective GSG use of these areas? How will the BLM compensate leasees who have purchased leases in areas which are being changed to NSO areas? This stipulation introduces significant “takings” of previously leased areas, while not actually protecting GSG or their habitats. This shows that the EIS is definitely flawed in its analysis and application of conservation techniques.
- The idea of limiting surface disturbances (presumably roads and pad sites) to one per section seems to have the unintended consequence of promoting further fragmentation of habitat. Furthermore, the 3 to 5% cap may have the unintended consequence of extending development than typical. As a disturbance cap is reached in an area, operators may have to stop and wait until some areas become reclaimed, and then once an area is reclaimed, operators would then be able to proceed with other operations. This assumes that keeping an area as 95% habitat with much longer periods of ongoing human activities in an area is a greater benefit to GSG. Accepting this, wouldn't a timeline of development that is lengthened be more harmful to the local population given the longer period of displacement? Applying a 3-5% blanket disturbance cap may be over-simplifying the issue, and we request that the BLM do a better job of analyzing

the indirect impacts of applying blanket disturbance caps, and incorporate a better understanding of mineral resource development.

Pg. 201: "If the lease is entirely within PPH, do not allow surface occupancy of any portion within 4 miles around the lek and limit permitted disturbances to one per section with no more than 3 percent surface disturbance in that section."

Pg. 201: " If the entire lease is within the 4-mile lek perimeter, limit permitted disturbances to one per section with no more than 3 percent surface disturbance in that section. Require any development to be placed at the most distal part of the lease from the lek, or depending on topography and other habitat aspects, in an area that is demonstrably less harmful to GRSg, such as based on topography or vegetation."

- States that permitted disturbances should be limited to one per section. One what? One pad, one acre? One continuous area of disturbance regardless of size? What if the disturbance is within one of the "expansive areas of non-habitat"? Please explain how keeping development out of non-habitat areas would benefit GSG, and outweighs the financial and operational impacts to existing leasees?
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Pg. 246: "In Grand County, there is a high risk of habitat fragmentation and loss due to urban development and related infrastructure, especially at the east end of the county."

- This is speculation. What evidence supports this statement? There appears only be minimal risks to GSG habitat due to development in the eastern side of the County, where very limited habitat has been mapped. So how did the BLM come up with an assumption of a "high risk" from urban development? Existing human populations near larger GSG blocks of habitats are at a very low density, and are within private lands. Is the BLM suggesting that they should regulate private land developments in the County, as there is a "high risk" of potential impacts on private lands?
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Pg. 252: "The overall results indicated that lek size has decreased, but populations have increased in Colorado."

- Does this statement not completely undermine the entire Purpose and Need of the document? Why would an entire environmental analysis be performed to determine appropriate conservation measures on a species whose population is increasing? Given the well documented amount of development (both mineral and exurban) that has occurred in western CO over the last few decades, how do you explain the population growth if development and related disturbances are repeatedly cited as being one of the primary factors contributing to decline in GrSG health and populations?
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Pg. 253: "Populations in the late 1960s and early 1970s were approximately 0.7 to 1.6 times the current populations (see diagram 3.3, Change in the Population Index for GRSG in Colorado, 1965-2003 (Connelly et al. 2004)) with relatively large population fluctuations."

- Again, this sentence demonstrates that the CO population has increased over the last several decades, or at least suggests that the whole need for this EIS is in question. During the time period cited (60's and 70's) there was lower population densities and yet the extent of development and related disturbances in western Colorado was lower. Excluding those influences, what explains the large fluctuations in population when those primary threats were absent? If these basic biological issues are unknown, then what confidence does the BLM have that issuing such overarching and financially burdensome stipulations would actually help GSG, given the massive potential impact to western Colorado's financial stability?

Pg. 253: "Although GRSG populations have definitely declined nationwide, the GRSG in Colorado have been increasing for about the last 17 years, and breeding populations have not declined for the last 39 years (see Figure 3-5, Greater Sage Grouse Breeding Bird Density, for current densities in the planning area). However, Braun (1995) reported a long-term decline in GRSG distribution and abundance. Similarly, Connelly and Braun (1997) indicated that GRSG breeding populations declined by 31 percent and production declined by 10 percent when they compared the long-term average of males/lek to the average obtained from the 1985 to 1994 data."

- The last two sentences directly contradict the first, please explain what populations in Colorado are actually doing. Further, how can the impact analysis be done when the BLM doesn't know if populations are increasing or decreasing? What baseline assumptions were used to establish your existing conditions?
- Utilizing lek count data during the time period specified as a means of comparison seems faulty; the next page discusses the inconsistencies and limitations of the data collected by CPW prior to implementing consistent protocols prior to 1998.

Pg. 255: Top Graph - By including 0 counts (presumably years where counts were not collected), the trend is inaccurately shifted down.

Pg. 255: "The present emphasis on developing natural gas reserves on these ranges has the potential to impinge heavily on GRSG habitats and behaviors and contribute substantially to declining trends."

- Yet very intense development has already occurred in the time period graphed above; in spite of the intense development, lek and population counts have increased. How then is the notion that additional development of equal intensity would somehow "contribute substantially to declining trends"? Furthermore, the graph above seems to defy the notion of declining trends within the PPR population.

- The literature used as a basis of impact from natural gas development comes from high-density natural gas and oil fields in Wyoming, where pad density is around one pad per 10 acres. Please provide an analysis of why using this literature is relevant in Colorado, given the extremely low pad densities in many areas of GSG habitat. This is speculation. (See **Exhibit Q.**)
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Pg. 256: “Due to the peculiar configuration of habitat associated with the Parachute-Piceance-Roan population, these GRSG are believed to be particularly vulnerable to development and habitat-related effects.”

- This statement should not be accepted as it is asserting an opinion that is directly contradicted by the data shown on the previous page. The statement is speculative and completely unsupported. (See **Exhibit Q.**)
 - The statement indicates that habitats within the PPR area are not likely as extensive as the PPH/PGH mapping suggests, and further introduces confusion into the habitat issue within the PPR.
 - The DEIS needs to acknowledge the alternative hypothesis that sage grouse, like other animals, may be disturbed by human activity and will sometimes move away from it but that does not mean that they suffer a population decline. The birds may have simply responded by relocating, or coexisting with human activity (i.e. habituation). Neither the DEIS or the NTT Report acknowledge that that there has been no population-level decline reported in any of the cited studies, only decreased lek attendance in affected areas. The DEIS needs to be revised to explicitly acknowledge these facts and alternative hypotheses that are consistent with the data. (See **Exhibit Q.**)
 - Connelly (2004) used a hypothetical “pre-European sage grouse distribution” but provides no data or evidence of historic sage grouse habitat or populations. The Final EIS must be based on science, not speculation.
 - Connelly’s 2004 monograph relies on extensive GIS analysis to translate speculative habitat conditions into theoretical historical habitat, which is then compared to current potential sage grouse habitat. The theoretical habitat loss since European settlement is calculated through this exercise. Areas known to be historically occupied by sage grouse were not included, and areas where there is no data of sage grouse occupancy are included. Speculative models are substituted for lack of historic data on sagebrush extent and sage grouse distribution, and are the basis of a mere guess at what was historic habitat. Thus, Connelly (2004) information is misleading, as are the subsequent analyses BLM and USFS use in reliance on Connelly (2004).
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Pg. 253: “Population trends based on counts of male GRSG at leks decreased over the assessment period, regardless of the parameter used, with a significant decline in males per lek; see diagram 3–2 below.”

Pg. 253: “A decline in lek size was also reflected in the distribution of leks among size classes, with medium and large leks each comprising over 30 percent of the leks sampled from 1965 through 1979, but for the remainder of the period, the proportion of medium and especially small leks increased.”

- The graph referenced on pg. 253 (Diagram 3-2) shows a significant population decline since 1964 based on inferring population trends by male lek counts. However, there is no indication that the data are accounting for potential dispersal to other leks. In fact, the very next bulleted point (directly above) indicates that while the number of large leks decreased, the number of small and medium-sized leks increased, supporting the idea that the birds were dispersing to other leks, and not necessarily supporting the notion of a declining population.
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Pg. 258: “GRSG populations have fluctuated greatly since 1984 in both Middle Park and North Park. The CPW counted GRSG males on strutting grounds consistently and reliably since the 1970s in North Park and the 1990s in Middle Park. According to these counts, 1984 GRSG populations were at their lowest levels recorded between 1984 and 1997 in North Park. GRSG males counted in 1984 totaled 466. From 2000 to 2005, counts in North Park were above 1,000 male GRSG. Currently, the 3-year running average for North Park (2010 to 2012) is 755 males. Lek count effort has been fairly consistent in North Park since 1973, and the entire data set was used to generate the North Park Population MZ in the Colorado GRSG Conservation Plan (2008). Diagram 3–6, Annual Male High Count for the North Park GRSG Population, illustrates that the annual male high count for the North Park GRSG population has fluctuated through time, but the population has remained fairly stable for the past 40 years. The 2010 to 2012 3-year average is close to the long-term median (1973 to 2012) for the population and well within the North Park Population MZ (639 to 1,214) recommended in the Colorado GRSG Conservation Plan (2008).”

- Do the lek counts account for potential dispersal to other leks during lower years? If the birds dispersed to other leks during lower years then the high counts at leks may decline at some leks while increasing at other leks. The stability of the long term trend at 800 males seems to support this notion.
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Pg. 258-259: “The Middle Park population has fluctuated around and within the population MZ recommendations (185 to 286) provided in the Colorado GRSG Conservation Plan (2008) and could be considered stable.”

- Again, if the population is demonstrated as being stable and meeting existing population objectives, why are additional conservation measures being considered?
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Pg. 266: “There are no pending land acquisitions within the planning area.”

- Please provide documentation that this statement is accurate, as given a review of BLM NEPA reviews for potential land exchanges, this statement appears to be inaccurate.

NTT Report Comments

The DEIS relies on recommendations in the NTT Report but does not acknowledge that these recommendations were influenced by special-interest litigants involved in settlement negotiations with the BLM. Publicly available records, including e-mails obtained under FOIA from the State of Idaho (excerpt below from a December 13, 2011 e-mail from the NTT lead for the BLM) reveal that special interest influence, rather than a transparent, inclusive, and scientifically defensible public process, was used in producing the NTT Report's recommendations:

*"Our timeframe is to complete the "updated" draft NTT report by COB tomorrow so I can ship it back to DC. Due to concerns by solicitors in DC the NTT report will look different. However the content is generally the same and due to the science review we did make changes to the Goals and Objectives section, some conservation measure in fluid minerals have been updated (i.e. 2.5% has been changed to 3% with rationale). The Policy recommendation change has undergone significant clarification again based on solicitor concerns in DC. **The solicitor concerns with the Policy recommendation piece stems from ongoing litigation discussions they currently having with litigants over BLM's recently completed LUPs.**"*

Clearly, the BLM cannot rely on such tainted sources as a basis for its analysis and alternatives in the DEIS.

Pg. 227: "With respect to maintaining viability of GrSG populations in the presence of oil and natural gas extraction, we conclude that the impacts of well-field development and production are most effectively mitigated by, in order of decreasing efficacy,

- ***Maximizing the extent of sage-grouse demographic recovery to near levels observed before the onset of well-field development;***
 - ***Minimizing the time period of maximum demographic impact (D);***
 - ***Minimizing the time period over which demography recovery is achieved (T2)."***
- Regarding the first bullet, CPW has indicated that across much of Colorado, GSG populations are increasing, or at least are stable. How would the BLM force operators and applicants to comply with this recommendation?
 - The last two bullet points regarding effective mitigation certainly seem reasonable, essentially implying that minimizing the duration of the development phase for gas infrastructure minimizes impacts on local bird populations. However, applying an arbitrary annual surface disturbance cap (e.g. the 3-5% surface disturbance cap) seems to run contrary to that idea, effectively forcing the development phase to be extended and prolonged. To illustrate, let's assume that "ABC Gas Company" has just approved an MDP for a 30,000 acre unit proposed to have 80 pads at build out. In the first year, ABC would like to implement an aggressive construction schedule and build 16 of the pads that are linked together along a common gathering system and road network to utilize resources efficiently and ultimately reduce costs. However, the amount of surface disturbance that would be caused by the development effort would exceed the allowable surface disturbance cap amount, thereby limiting the operator's ability to proceed with those plans. So, what are the consequences? Most obviously, the disturbance phase required to construct those 16 pads is prolonged, not due to technical

constraints or lack of resources, but rather due the arbitrary surface disturbance cap. This directly contradicts the bullet points above. Secondly, the operator is forced to incur greater development costs as the implementation effort would be required to occur over a much longer duration. Stipulations should allow for a case-by-case analysis of potential impacts to GSG habitats, as some situations may prove to be less impactful to GSG and their habitats, rather than simply applying disturbance caps.

Predation

- The DEIS Ignores predation as the primary demonstrable source of mortality to sage grouse, in favor of an approach that relies on a series of land use setbacks, disturbance caps, and restrictions based around speculative benefits to sage grouse that have not been shown to be effective by any data. (See *Exhibit Q*.)
- The DEIS ignores management of raven predation on sage grouse eggs and broods as a conservation strategy despite the fact that predation has been shown to be a major issue for sage grouse and that the State of Wyoming, in collaboration with the USDA-APHIS, has recently undertaken a major raven management program. (See *Exhibit Q*.)
- Sage grouse eggs are preyed upon by a wide variety of predators including red foxes, coyotes, badgers, black-billed magpies, and ravens. Juvenile and adult sage grouse predators include golden eagles, prairie falcons, coyotes, badgers, and bobcats. Sage grouse broods are preyed to ravens, red foxes, raptors, ground squirrels, snakes, and weasels. However, of the predators above, ravens are the most ubiquitous. Research (Coates 2007; Coates and Delehanty. 2004; Coates et al. 2008; Coates and Delehanty 2010; Christiansen 2011) and more recent data gathered by the USDA, has shown that ravens have the greatest impact on sage grouse and that their numbers are far in excess of historic levels (Christiansen 2011). (See *Exhibit Q*.)
- The DEIS and NTT Report ignore the management of ravens as a conservation priority to reduce predation on sage grouse eggs and broods (and thereby a viable management strategy to increase overall survivorship and recruitment of sage grouse). The only mention of ravens in these documents is that their numbers are the result of human activities, and that transmission lines and tanks provide predator roosting opportunities (and therefore sage grouse avoid these structures.) There is an implicit assumption that ravens can be managed indirectly through the regulation of human activities. This is an unproven strategy and is unlikely to be effective at reducing raven predation on sage grouse unless coupled with active / lethal control of ravens to reduce the size their populations (Coates and Delehanty 2010). There is abundant research on raven predation on sage grouse and other species, yet the DEIS all but ignores the importance of this threat (Boarman 1993; Boarman 2003; Boarman et al. 1995; Boarman and Heinrich 1999; Boarman et al. 2006; Bedrosian and Craighead 2010; Bui 2009; Cagney et al. 2010; Coates 2007; Coates and Delehanty 2004; Coates et al. 2008; Coates and Delehanty 2010; Conover et al. 2010; Cote and Sutherland 1997; DeLong 1995; Gregg et al. 1994; Heinrich et al. 1994; Moynahan et al. 2007; Preston 2005; Ramey, Brown, and Blackgoat 2011; Schroeder and Baydack 2001; Snyder et al. 1986, Sovada et al. 1995; Watters et al. 2002; and Webb et al. 2009). The DEIS must include in each alternative a raven management program such as the one undertaken by the USDA-APHIS Animal Damage Control at landfills across southern Wyoming at the request of the

Wyoming Game and Fish Dept. (Wyoming Game and Fish 2012, USDA/APHIS/Wildlife Services 2013). (See **Exhibit Q**.)