Western Watersheds Project

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Working to protect and restore Western Watersheds

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January 10, 2008

Dear Ms. Rugwell,

Enclosed are our comments on the Moxa Arch Infill EIS. We are glad to hear that the BLM is planning to redo the air-quality analysis based on the strong concerns of the EPA, the DEQ, the conservation community and others. What is disappointing is the poor quality of the air-quality analysis given the importance of this issue.

Our fundamental concern with the EIS is the fact that the BLM treats these public lands is a sacrifice zone. The EIS lays out a wide range of significant impacts yet provides little if any effective mitigation. For instance even if we are to assume that the highest priority for this area is the extraction of natural gas in the profit private corporations there are a wide range of actions the BLM could require that would dramatically reduce the level of impacts most obvious is requiring no new well pads and that all drilling take place from currently disturb sites. In addition centralized gathering and processing facilities could also be required. Remote monitoring could also be required, but none of these are required. Given the technologically and economically feasible mitigation measures that could be required we can only see the BLM's lack of requiring these mitigation measures as a violation of the Federal Land Policy and Management Act because this project causes "unnecessary and undue degradation".

Issues from a NEPA standpoint are numerous. For instance, more compressor stations will be necessary to service the increase in drilling activity. These compressor stations are a connected action and must be analyzed within the same NEPA document. Anything less violates NEPA. The same goes for pipeline capacity. Currently, gas prices in the area are substantially reduced compared to the national average because pipeline capacity is insufficient to deliver the currently produced gas to market. Clearly, with more production more pipeline capacity will be required. This again is a connected action which must be analyzed in this NEPA process.

The entire point of conducting a NEPA analysis of this or any other Project is to determine the environmental impacts that such a project will have on the environment.

Unfortunately this current process fails to achieve that purpose. The EIS fails to provide any site-specific information as to the placement of well pads, roads, transmission lines or other facilities by stating that the locations of these are unknown at the time. But this is exactly what the purpose is up this NEPA process and must not be pushed off for the APD process. The BLM cannot provide any accurate information in this process without laying out where the activities will take place. This completely vitiates the current NEPA process and must be corrected before the process continues. We do not by the BLM's excuse that these cannot be known at the time.

While the various sections dealing with wildlife impacts note significant impacts to various wildlife species, the current document fails to make use of current scientific understanding of habitat needs, modeling and other analysis techniques to determine more accurately what the impacts will be. For instance, no analysis has been conducted regarding effective habitat size. For instance after full development how many acres within the project area will be farther than 200 m from an open road?

The NEPA document fails to examine the assumptions and predictions of the previous NEPA document and thus fails to examine what worked and what didn't work, what assumptions were correct and what assumptions were incorrect. Such analysis is critical to the current undertaking. Without this information how can the public what the decision-maker understand the accuracy and efficacy of the current analyses. For instance, the current EIS states repeatedly that attempts at revegetating disturb sites has been wholly unsuccessful. Understanding the reasons for this lack of success is critical in the current analyses. Was the failure a result of the lessee’s failure to implement recovery procedures? Where the procedures implemented properly but fail?

Was the monitoring and mitigation in the previous decision accomplished successfully? What are the results? We have no idea because the current NEPA document provides none of this critical information.

The NEPA document fails to provide any information whatsoever regarding the impacts of the proposed project on global climate change in the production of greenhouse gases. This violates NEPA.

The NEPA document lays out significance criteria for each of the areas under analysis, but to document fails to provide any monitoring of these criteria to determine what the impacts actually are. Such monitoring is critical to better understanding the impacts of these type of projects. Far too often the BLM approves project after project after project yet fails to gather any information regarding the impacts of these projects and puts out bogus NEPA for each future project failing to take into account or learn from previous projects.

On page 1-5 it states that "it is unknown whether additional gas transmission lines would be required to transport the gas produced from wells drilled under the proposed action." But this is wholly false given the wide range of press reports and other information widely circulated in the public regarding the lack of gas transmission space currently in southwestern Wyoming.

In section 1.5.3, the EIS fails to lay out all of the direction from the Kemmerer Resource Management Plan that applies to this project.

The EIS fails to clearly explain how the project will comply with EO 13112.

On page 2-3, the EIS states "Additional compression of the gathering system in the project area will likely be required and added to existing compression infrastructure over the 10-year development period. Additionally, it is estimated that three to four new compressors could be required to accommodate the maximum anticipated compression growth that would result from the proposed action." Here again it is clear that these additional compressor stations which will be required as a result of this project must be analyzed within this NEPA process itself. Anything less violates NEPA. Compressor stations are often a major source of air pollutants such as CO, CO2, Nox and other pollutants these must be analyzed within this current project.

The fact that being EIS delineates numerous mitigation measures and BMPs but fails to require the use measures in the proposal vitiates all impact analyses. Analyzing based on the implementation of these measures without requiring these measures violates NEPA. Many of the measures are vague, poorly delineated and have no in the assurance of being implemented. The EIS states that many of these measures will be implemented on a "case-by-case basis" but fails to provide any indication of how it will be decided in these measures are implemented or not. Given the BLM's poor performance on these matters one can only assume that it will be extremely rare that many of these mitigation measures will actually be implemented.

We do not understand why the BLM refuses to implement a prohibition of the disturbance of "sensitive soils". One of the more useful mitigation measures would be to disallow any surface disturbing activities on the soils.

Many of the determinations in this analysis, such as on page 2-22 where the BLM states that the proposed action will cause "no significant increases in noxious weeds expected because the BLM stipulations and current operator management practices" this absurd statement flies in the face of all experience in the field of invasive species. Such absurd and unsupported determinations violates NEPA.

One of the interesting aspects of the EIS is the admission that significant climate related changes have taken place and are taking place. But the EIS fails to analyze the impacts of this project on the further climate change or the success of future reclamation efforts over the life of the project in a dryer and hotter climate. This violates NEPA.

Much of the data presented in the air quality section is either woefully out of date such as data from the late 90s or fails to include the latest information from various monitoring locations with the most recent information beamed in the year 2004 despite the fact that more recent data is widely available.

Even though the EIS states on page 3 – 28 that "streams in the MAA are sensitive to disturbance and to increases in surface runoff or tributary in float and sediment" but the DEIS fails to take into account the impacts that the one to 2000 miles of new roads, pipelines and 2000 more well pads will have on drainage patterns and increases in runoff. While in forested systems they're often needs to be more than 10% of the area disturbed to have a significant impact on overland flow, within these type of systems with high clay content, low infiltration rates, and high salt content flow patterns and infiltration are

impacted much more easily. To add to this nearly all the streams within the project area are listed as Functional at Risk or Nonfunctional meaning that currently they are not able to withstand even natural flood events and our weekend in their ability to withstand stresses.

The EIS fails to even mention infestations cheatgrass.

While the EIS basically states that project area will be a sacrifice zone and no longer able to support sage grouse, it neither discusses all the current research regarding sage grouse and oil and gas development nor does it implement as requirements the mitigation measures outlined in the various sage grouse management documents available to it.

In regards to sage grouse, Sage grouse depend almost entirely on sagebrush for food and protection from predators. In the summer, the birds depend on the grasses and plants that grow under the sagebrush to provide nesting material, as well as high protein insects that are critical to the diet of chicks in the first few months of life. In winter, almost 99 percent of their diet is sagebrush leaves and buds. Recent estimates indicate that the sage grouse populations have declined by approximately 86 percent from historic levels. One of the greatest threats to sage grouse populations is the destruction and loss of habitat from a variety of management activities including oil and gas development and livestock grazing.[1] Yet the EIS Fails to even mention the reduction in habitat effectiveness caused by current or past livestock grazing or that in combination with the proposed project.

In presettlement times, the range of the sage grouse paralleled the range of big sagebrush. Basin big sagebrush provides important cover for sage grouse.[2] Populations of sage grouse have declined primarily because of loss of habitat due to overgrazing, elimination of sagebrush, and land development.[3] Sage grouse populations began declining from 1900 to 1915, when livestock utilization of sagebrush rangeland was heavy.[4] In the 50's and 60's, land agencies adopted a policy of aggressive sagebrush control in order to convert sagebrush types to grassland. Chaining, frequent fire, and herbicide treatments reduced sagebrush by several million acres and sage grouse numbers plummeted drastically.[5]

Sage grouse historically occurred throughout the range of big sagebrush (*A. tridentata*), except on the periphery of big sagebrush distribution or in areas where it has been eliminated.[6] Sage grouse prefer mountain big sagebrush (*A. t. ssp. vaseyana*) and

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[1] U.S Fish and Wildlife Service April 16, 2004

[2] Benson, Lee A.; Braun, Clait E.; Leininger, Wayne C. 1991. Sage grouse response to burning in the big sagebrush type. In: Comer, Robert D.; Davis, Peter R.; Foster, Susan Q.; [and others], eds. Issues and technology in the management of impacted wildlife: Proceedings of a national symposium; 1991 April 8-4. Snowmass Resort, CO. Boulder, CO: Thorne Ecological Institute: 97-104.

[3] Hamerstrom, Frederick; Hamerstrom, Frances. 1961. Status and problems of North American grouse. Wilson Bulletin. 73(3): 284-294.

[4] Patterson, Robert L. 1952. The sage grouse in Wyoming. Federal Aid to Wildlife Restoration Project 28-R. Denver, CO: Sage Books, Inc. 341 p.

[5] Call, Mayo W. 1979. Habitat requirements and management recommendations for sage grouse. Denver, CO: U.S. Department of the Interior, Bureau of Land Management, Denver Service Center. 37 p.
Mattise, Samuel N. 1995. Sage grouse in Idaho: Forum 94'. Technical Bulletin No. 95-15. Boise, ID: U.S. Department of the Interior, Bureau of Land Management, Idaho State Office. 10 p.

[6] Call, Mayo W.; Maser, Chris. 1985. Wildlife habitats in managed rangelands--the Great Basin of southeastern Oregon: sage grouse. Gen. Tech. Rep. PNW-187. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station. 30 p.

Wyoming big sagebrush (*A. t. ssp. wyomingensis*) communities to basin big sagebrush (*A. t. spp. tridentata*) communities. Sage grouse are totally dependent on sagebrush-dominated habitats.[7] Sagebrush is a crucial component of their diet year-round, and sage grouse select sagebrush almost exclusively for cover.[8]

When not on the lek, sage grouse disperse to the surrounding areas.[9] Some females probably travel between leks. Patterson[10] reported that in Wyoming, 92 percent of sage grouse nests in Wyoming big sagebrush were in areas where vegetation was 10 to 20 inches (25-51 cm) tall and cover did not exceed 50 percent.

The importance of sagebrush in the diet of adult sage grouse is impossible to overestimate. Numerous studies have documented its year-round use by sage grouse.[11] A Montana study, based on 299 crop samples, showed that 62 percent of total food volume of the year was sagebrush. Between December and February it was the only food item found in all crops. Only between June and September did sagebrush constitute less than 60 percent of the sage grouse diet.[12]

In places, the number of young sage grouse simply is not enough to sustain a stable population. Sage grouse have one of the lowest recruitment rates of any upland game bird in North America. Loss of habitat, predation, drought, and poor weather conditions

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[7] Benson, Lee A.; Braun, Clait E.; Leininger, Wayne C. 1991. Sage grouse response to burning in the big sagebrush type. In: Comer, Robert D.; Davis, Peter R.; Foster, Susan Q.; [and others], eds. Issues and technology in the management of impacted wildlife: Proceedings of a national symposium; 1991 April 8-4. Snowmass Resort, CO. Boulder, CO: Thorne Ecological Institute: 97-104.

[8] Patterson, Robert L. 1952. The sage grouse in Wyoming. Federal Aid to Wildlife Restoration Project 28-R. Denver, CO: Sage Books, Inc. 341 p.

[9] Wallestad, Richard; Pyrah, Duane. 1974. Movement and nesting of sage grouse hens in central Montana. Journal of Wildlife Management. 38(4): 630-633.

[10] Patterson, Robert L. 1952. The sage grouse in Wyoming. Federal Aid to Wildlife Restoration Project 28-R. Denver, CO: Sage Books, Inc. 341 p.

[11] Beck, D. I. 1975. Attributes of a wintering population of sage grouse, North Park, Colorado. Fort Collins, CO: Colorado State University. 49 p.Thesis.

Call, Mayo W. 1979. Habitat requirements and management recommendations for sage grouse. Denver, CO: U.S. Department of the Interior, Bureau of Land Management, Denver Service Center. 37 p.

Call, Mayo W.; Maser, Chris. 1985. Wildlife habitats in managed rangelands--the Great Basin of southeastern Oregon: sage grouse. Gen. Tech. Rep. PNW-187. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station. 30 p.

Klebenow, Donald A. 1973. The habitat requirements of sage grouse and the role of fire in management. In: Proceedings, annual Tall Timbers fire ecology conference; 1972 June 8-9; Lubbock, TX. No. 12. Tallahassee, FL: Tall Timbers Research Station: 305-315.

Patterson, Robert L. 1952. The sage grouse in Wyoming. Federal Aid to Wildlife Restoration Project 28-R. Denver, CO: Sage Books, Inc. 341 p.

Schneegas, Edward R. 1967. Sage grouse and sagebrush control. Transactions, North American Wildlife Conference. 32: 270-274.

Sime, Carolyn Anne. 1991. Sage grouse use of burned, non-burned, and seeded vegetation communities on the Idaho National Engineering Laboratory, Idaho. Bozeman, MT: Montana State University. 72 p. Thesis.

Wallestad, Richard. 1975. Life history and habitat requirements of sage grouse in central Montana. Helena, MT: Montana Department of Fish and Game. 65 p. In cooperation with: U.S. Department of the Interior, Bureau of Land Management.

Wallestad, Richard; Peterson, Joel G.; Eng, Robert L. 1975. Foods of adult sage grouse in central Montana. Journal of Wildlife Management. 39(3): 628-630.

[12] Wallestad, Richard. 1975. Life history and habitat requirements of sage grouse in central Montana. Helena, MT: Montana Department of Fish and Game. 65 p. In cooperation with: U.S. Department of the Interior, Bureau of Land Management.

during hatching and brooding periods have been cited as factors leading to poor recruitment.[13]

Lack of adequate nesting and brooding cover may account for high juvenile losses in many regions.[14] A decline in preferred prey may also result in increased predation on sage grouse. Nest losses to predators vary throughout the range of sage grouse, but predators are more successful in areas of poor-quality nesting habitat.

Wyoming, in general, has the strongest sage grouse population in the world. Fragmentation of the habitats upon which this population depends will slowly unravel the entire presently linked sage-grouse population in Wyoming. This has already happened in most other states with disastrous results and has already started in Wyoming -- most noticeably at the periphery of the historical distribution. Once this continuity becomes fragmented, the overall distribution fabric is lost and sage-grouse populations will become disjointed and subject to greatly reduced abundance as well as local extirpation (Braun 2002).

Given this information, it is disheartening, to say the least, that the WFO has limited its discussions of the proposed action's impacts to sage grouse to a mere listing of mitigation measures. The fact the Wyoming BLM continues to allow such miserable disclosure of impacts and continually fails to acknowledge the impacts its management activities have on this species will likely lead to further declines and most likely extirpation, because the agency continues to arbitrarily and capriciously ignore the impacts decisions such as this one have on sensitive species such as sage grouse.

Moreover, the impacts on sage-grouse extend beyond impacts to leks.

Several scientists have researched and documented the biology and habitat requirements for sage grouse during their various life stages. These life stages include leks or breeding, nesting, brood-rearing and wintering. Braun et al (1977) in their review[15] found that leks or breeding sites were generally open areas surrounded by sagebrush and that nesting areas appeared to occur within a few kilometers of the lek sites. The maximum distance between leks and nesting sites reported was 12.9 km, with 59% being within 3.2 km. Successful nest sites had significantly greater sagebrush canopy cover (27%) as opposed to unsuccessful sites at 20%. An important component of the nesting sites is also the cover provided by herbaceous vegetation, particularly grasses. Connelly et al (2000)[16] reported a range of grass height at nest sites between 14 – 34 inches and a mean of 20 inches with canopy cover of grasses ranging from 4 to 51% with a mean of 16%. During brood-rearing, grouse with chicks preferred more open sagebrush uplands at about 10% - 14% canopy, while loafing of adults occurred in stands with 30% canopy.

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[13] Mattise, Samuel N. 1995. Sage grouse in Idaho: Forum 94'. Technical Bulletin No. 95-15. Boise, ID: U.S. Department of the Interior, Bureau of Land Management, Idaho State Office. 10 p.

[14] Kindschy, Robert R. 1986. Rangeland vegetative succession—implications to wildlife. Rangelands. 8(4): 157-159.

[15] Braun, Clait E., Tim Britt and Richard O. Wallestad. 1977. Guidelines for maintenance of sage grouse habitats. Wildlife Society Bulletin 5(3):99-105.

[16] Connelly, John W., Michael A. Schroeder, Alan R. Sands, and Clait Braun. 2000. Guidelines to manage sage grouse populations and their habitats. Wildlife Society Bulletin 28(4):967-985.

Beginning in June and during mid-late summer, broods moved to more mesic sites such as meadows. Hockett (2002)[17] stressed the importance of riparian and wet meadow sites during summer and fall. Wintering sites were reported to have greater than 20% sagebrush canopy cover.

Connelly et al (2000) summarized characteristics of sage grouse habitat in the following table which is reproduced from their paper. The sagebrush canopy characteristic for breeding habitats is reported as a broad range, but it is important to remember that successful nests occur in areas with canopy cover at the high end of the range or higher. Diets of sage grouse vary through the year and by age. Sage grouse depend entirely on sagebrush from October through April. In May, they shift to a forb-dominated diet (20 – 60%) with the remainder being mostly sagebrush. They shift back to sagebrush during September. Chicks begin life depending heavily on insects at about 60%, then shift to a forb dominated diet with about 15% sagebrush during the second month.

Braun et al (1977), Welch et al (1990)[18], Connelly et al (2000) report that spraying, burning and mechanical treatments of sagebrush resulted in declines of sage power lines, fences, reservoirs, ranches, farms and housing developments have resulted in sage grouse habitat fragmentation and loss. Structures such as fences and power lines provide perch sites for raptors that prey on sage grouse and also result in injury or death when grouse collide with these. Connelly et al (2000) and Hockett (2000) reported that sage grouse have high seasonal fidelity to seasonal ranges and females return to the same area to nest each yearNo analysis was done as to the effects of these disturbances combined with livestock grazing on sage grouse populations on these allotments.

Beck and Mitchell (2000)[19] and Hockett (2002) reviewed the effects of livestock grazing on sage grouse. They report that livestock, by consuming herbaceous vegetation and reducing grass cover needed to conceal grouse nests from predation, reduce grouse production. Ground squirrels favored by high levels of grazing, combined with drought conditions account for significant nest predation—but again this impact was not disclosed.

The depletion of forbs and loss of associated insects can directly impact chick survival. Mattise (1995)[20] noted that *"we have poor strategies for protecting important brood rearing habitat during severe drought conditions. Riparian areas, springs and seeps are not being managed to provide vegetative recovery and enhancement."* Since BLM fails to include any riparian standards for the streams, seeps, springs, and wet meadows on the these allotments and fails to disclose the impacts to sage grouse from the proposed action, its proposed decision is counter to the science and validates this statement.

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[17] Hockett, Glenn A. 2002. Livestock impacts on the herbaceous components of sage grouse habitat: a review. Intermountain Journal of Science 8(2):105-114.

[18] Welch, Bruce L., Fred J. Wagstaff and Richard L. Williams. 1990. Sage grouse status and recovery plan for Strawberry Valley, Utah. USDA Forest Service Intermountain Research Station Research Paper INT-430. 10p.

[19] Beck, Jeffrey L. and Dean L. Mitchell. 2000. Influences of livestock grazing on sage grouse habitat. Wildlife Society Bulletin 28(4):993-1002.

[20] Mattise, Samuel N. 1995. Sage grouse in Idaho: Forum '94. Idaho BLM Technical Bulletin 95-15. 10p.

Considerable local information is available about sage-grouse use areas in Wyoming (Lyon 2000, M. J.Holloran 2001-02 Study; Heath et al.,1997). Most of the available data that have been mapped are those on location of leks. There is general knowledge about sage-grouse seasonal habitat use areas outside of the lek locations, with Lyon (2000) presenting the best generalized overview. Braun (2002) noted the following for the development of the Pinedale RMP and they are relevant here as well:

1. *Winter*— Focus should immediately be placed on locating and mapping sagegrouse winter-use areas throughout the area. This should have the highest priority, as over winter survival is critical to population maintenance. Maps should be prepared for both "average" or "normal" winters and severe winters which, happen every 7-10 years. Once these areas are located and mapped, they should be described using standard measures for live sagebrush canopy cover, height, etc. following the approach of Connelly et al. (2000). Once identified, these areas should receive special attention (for example, designation as "Areas of Critical Environmental Concern") in order to reduce or prevent disturbance during winter, wild fire, and management activities that make them less useful to sage-grouse. Special attention should be given to any disturbance that reduces amount of live sagebrush, leaf surface, canopy cover, and height. (Which grazing does—authors words not Brauns).

2. *Leks*--The available data on leks suggest that not all active lek sites have been located and that the status (active, inactive [< 2 years. > 2years]) of each site mapped is poorly known. Further, there are gaps (some leks are not counted every year) in the count data and number of counts/lek in a given year varied. The available long-term trend in numbers of cocks appears to be down but the problems identified make data analysis difficult. Since active sage-grouse leks are relatively easy to locate during late March and April, standard surveys of all areas within the proposed project area should be conducted and continued at 3-year intervals. All known lek sites should be checked for activity in spring. Those classified as active should be counted (number of cocks) 3-4 times each spring at 7-10 day intervals starting in late March-early April, depending upon weather conditions, and continuing into early May. Those classified as inactive should be checked in late April/early May every 2-3 years to ascertain any change in status. UTM (or GIS) coordinates for all lek sites should be taken and plotted on base maps.

3. *Nesting*-- Lyon (2000) describes habitats used for nesting. Because sage-grouse have been shown to nest at a variety of distances from active leks and use a variety of micro sites for nest placement, it is difficult to identify all nesting areas. Thus, the Connelly et al. (2000) guidelines should be followed to offer some protection to habitats useful for nesting at distances up to 3 miles from active leks. Since most actual nesting occurs within this distance (Braun et al. 1977) (with some nests at much greater distances), it is most reasonable to depict nesting habitat as all sagebrush areas with > 10 % live canopy cover of sagebrush (primarily *A.tridentata vaseyana, A. t. wyomingensis, A. tripartita, A. nova,* and *A. cana* depending upon location) and a healthy under story of native grasses and forbs. Since active lek sites can be located, identifying concentric areas within a threemile radius around each lek site that will include most nesting sites is presently the only reasonable method to map potential nesting areas.

4. *Brood-rearing*--Broods, upon hatching, use areas close to the locations of successful nests and progressively move towards moist areas upon desiccation of vegetation in the uplands. A review of where broods have been observed in relation to known sources of

water (at ground level) or at riparian sites along streams, springs, etc. should be done so that additional management consideration can be given to these areas. Management that should be in place includes movement of livestock to avoid degradation of plant communities in moist sites and riparian areas and fencing to allow livestock access to water only in sites where erosion and plant community degradation would not be expected or could be controlled. Lyon (2000) suggests that early brood survival is a problem in the area she studied southwest of Pinedale. Early brood survival is most affected by insect and succulent forb availability within secure (good hiding cover provided by grasses and forbs) habitats (Connelly et al. 2000). Late brood rearing habitat is primarily in close proximity (< 1 mile) of sites with moisture and succulent forbs adjacent to escape cover provided by live sagebrush (Connelly et al.,2000).

These scientific papers and reports provide a significant body of knowledge that BLM should have relied upon in addressing sage grouse needs and monitoring.

In addition, management requirements that apply to the species on the BLM Wyoming Sensitive Species List are to avoid or minimize adverse impacts and maximize potential benefits to species whose viability has been identified as a concern by reviewing programs and activities to determine their potential effect on sensitive species.

The BLM would be wise to take the above steps recommended by Braun. We also recommend the BLM review "A Blueprint for Sage-grouse Conservation and Recovery" by Braun (2006) and that the BLM comply with the recommendations in the "Conservation Assessment of Greater Sage-Grouse and Sagebrush Habitats" by Connely et. al. (2004). Only then can the public be assured that the BLM has complied with the requirements of its own sensitive species manual.

Guidelines for Management of Sage Grouse and Migrant Bird Habitat. These authors (Braun et al, Connelly et al, and Welch et al) have provided a variety of guidelines for management of sage grouse habitat. These include:

- Sagebrush eradication should not be practiced. Treatments can be used to thin dense sagebrush stands to a range of sagebrush cover from 15% to 25%. Burns should be avoided in xeric Wyoming big sagebrush habitats). Only small burns to create mosaics in mountain big sagebrush should be contemplated and these are considered experimental.
- Rehabilitation following wildfire or other disturbances should focus on re-establishing sagebrush and native herbaceous plants. Annual grass establishment following fire is detrimental. Grazing should not be allowed on seeded areas until plant recruitment has occurred.
- Range seedings should focus on establishing forbs, native grasses and sagebrush. Monoculture seedings of crested wheatgrass and other non-natives are discouraged.
- Applying insecticides to summer habitat is not recommended.
- Livestock use around water sources and wet meadows in brood rearing areas should be regulated through fencing or other management to restrict overuse.
- Grazing practices should be adjusted to maintain residual grass growth essential for nest concealment and then delay grazing the same areas until after nesting.

- Plot sage grouse use areas including leks, nesting areas, wintering sites, meadows and summer range or brooding areas on maps.
- No sagebrush will be treated or removed until a comprehensive plan has been formulated for management of the area.
- Sagebrush control projects will include provisions for long-term quantitative measurement of vegetation before and after to determine effects on habitat and whether objectives were met.
- No sagebrush control projects will be done on areas where live cover is less than 20%, on steep slopes or upper slopes with skeletal soils where big sagebrush is less than 30 cm.
- No sagebrush control along streams, meadows or intermittent drainages. A 100 meter strip of live sagebrush should be left on each edge of meadows and drainages.
- When sagebrush control is found to be unavoidable, treatment measures should be applied in irregular patterns using topography and other ecological considerations. Widths of treated and untreated areas can vary except treated areas will not be wider than 30 meters and untreated areas will be at least as wide.
- Manage breeding habitats to support 15 – 25% canopy cover of big sagebrush, perennial herbaceous cover ≥18 cm in height with ≥ 15% canopy cover of grasses and ≥ 10% canopy cover of forbs.

Partners in Flight (Paige and Ritter, 1999)[21] provide management recommendations for sage grouse and migratory birds obligate to sagebrush-steppe. These include:

- Identify and protect those habitats that still have a thriving community of native understory and sagebrush plants.
- Maintain large, continuous blocks of unfragmented habitat
- Maintain seeps, springs, wet meadows and riparian vegetation in a healthy state
- Avoid practices that convert sagebrush to non-native grassland or farm land.
- Maintain stands of sagebrush for a balance between shrub and perennial grass cover.
- In large disturbed areas, sagebrush and perennial grasses may need to be reseeded to shorten recovery time.
- To maintain bluebunch wheatgrass vigor, avoid grazing during the growing season until plants begin to cure. Bluebunch wheatgrass is especially sensitive to heavy grazing during the growing season. Recovery of these plants following heavy grazing during a single spring can require 8 years under the best management and environmental conditions.
- Grazing plans will depend on the current condition and plant composition of the area. Defer grazing until after crucial growth periods. Note that in the presence of cheatgrass, deferred grazing can favor the cheatgrass.
- For sage grouse maintain average grass height of at least 18 cm in May and early June. Sharp-tailed grouse require 20 cm.
- Consider livestock exclusion from heavily damaged areas, particularly wet sites.
- Livestock concentrations around water developments can increase cowbird parasitism.

[21] Page, Christine and Sharon A. Ritter. 1999. Birds in a Sagebrush Sea: Managing Sagebrush Habitats for Bird Communities. Partners in Flight, Western Working Group. 47p.

- Use fences with smooth top and bottom wires for exclosures around wet sites.

Miller and Eddleman (2000)[22] also provide an excellent review of sage grouse ecology, habitat and management. They emphasize that sage grouse habitat management plans must take into account landscape heterogeneity, site potential, site condition and habitat needs of sage grouse during different parts of their life cycle (breeding, nesting, brood rearing, wintering).

The project area is entirely within pygmy rabbit habitat yet no actions are taken to prevent impacts to this sensitive species.

In section 4.2.5 it mentions that all the action alternatives are well above the significance threshold but state that "operators should phase in cleaner drilling rigs and equipment" this is like many of the mitigation measures put forward in this document and can only be described as hopeful but nothing we can based decisions upon.

In this section regarding surface waters we do not find a good rationale for how the large-scale water depletions proposed will not impact downstream flows.

On page 4 – 27 it discusses surface water quality but provides no data regarding the impacts of the current level of development or development similar to the level proposed such as the Jonah Field so we have two supposedly trust this unsupported claim.

The section dealing with groundwater fails to discuss or analyze the potential groundwater impacts due to fracturing.

In the fisheries and aquatic ecosystems section lists to significance criteria but fails to mention that many of the fish species are either BLM listed sensitive species or ESA listed species and thus the criteria mentioned are far greater impacts than can be allowed under law for these classifications.

For many of the wildlife mitigation measures the BLM fails to implement any of them by providing such statements as "seasonal restrictions would be evaluated on a case-by-case basis and may be relaxed or waved at the discretion of the BLM" Given the BLM's history on this topic the chances of these mitigation measures actually being implemented on a wide scale are minimal at best.

We request that as a mitigation measure for the project livestock grazing permits with the project area be retired.

The BLM's sensitive species manual requires the following from field office managers:

F. Field Office Managers are responsible for implementing the special status species program within their area of jurisdiction by:

[22] Miller, Richard F. and Lee L. Eddleman. 2000. Spatial and Temporal Changes of Sage Grouse Habitat in the Sagebrush Biome. Oregon State University Agricultural Experiment Station Technical Bulletin 151. 35p.

1) Conducting and maintaining current inventories for special status species on public lands.
2) Providing for the conservation of special status species in the preparation and implementation of recovery plans with which BLM has concurred, interagency plans and conservation agreements.
3) Ensuring that all actions comply with the ESA, its implementing regulations, and other directives associated with conserving special status species.
4) Coordinating field office activities with Federal, State, and local groups to ensure the most effective program for special status species conservation.
5) Ensuring actions are evaluated to determine if special status species objectives are being met.
6) Ensuring all actions authorized, funded or carried out by BLM follow the interagency consultation procedures as outlined in 50 CFR Part 402- Interagency cooperation -Endangered Species Act of 1973, as amended.
7) Ensuring results of formal section 7 consultations, including terms and conditions in incidental take statements, are implemented.

Furthermore, the policy of the BLM is defined in that document as follows:

"The BLM shall conserve listed species and the ecosystems upon which they depend and shall use existing authority in furtherance of the purposes of the ESA. Specifically the BLM shall:

a. Determine, to the extent practicable, the occurrence, distribution, population dynamics and habitat condition of all listed species on lands administered by BLM, and evaluate the significance of lands administered by BLM in the conservation of those species.
b. Ensure management plans and programs provide for the conservation of designated critical habitat on lands administered by the BLM.
c. Develop and implement management plans and programs that will conserve listed species and their habitats.
d. Monitor and evaluate ongoing management activities to ensure conservation objectives for listed species are being met.
e. Ensure that all activities affecting the populations and habitats of listed species are designed to be consistent with recovery needs and objectives.
f. Implement mandatory terms and conditions and reasonable and prudent alternatives as outlined in final biological opinions.

Implement conservation recommendations included in biological opinions if they are consistent with BLM land use planning and policy and they are technologically and economically feasible.

The September 20, 2002 *BLM Wyoming Sensitive Species Policy and List* states the following:

> "Bureau of Land Management (BLM) Manual 6840 establishes Special Status Species (SSS) policy for plant and animal species and the habitat on which they depend. This SSS policy refers not only to species protected under the Endangered Species Act (ESA), but also to those designated by the State Director as Sensitive. The manual states *" Sec. 06D - Sensitive Species: State Directors, usually in cooperation with the State wildlife agency, may designate sensitive*

species. By definition the sensitive species designation includes species that could easily become endangered or extinct in the state. Therefore, if sensitive species are designated by the State Director, ***the protection provided by the policy for candidate species shall be used as the minimum level of protection****".*

The policy further sets out how the Wyoming BLM is to manage sensitive species. It also notes the intent of the sensitive species designation is to ensure actions on BLM administered lands consider the welfare of these species and do not contribute to the need to list any other Special Status Species under the provisions of the ESA. Management requirements that apply to the species on the BLM Wyoming Sensitive Species List are to avoid or minimize adverse impacts and maximize potential benefits to species whose viability has been identified as a concern by reviewing programs and activities to determine their potential effect on sensitive species. Requesting technical assistance from the FWS, and any other qualified source, on actions that may affect a sensitive species is recommended. It is not the intent of this list to track species rangewide or even statewide as this is done by other entities (WYNDD, WGFD, FWS, GAP, etc.) rather the BLM obligation is to determine distribution and manage habitats. It is also the intent of this list to emphasize planning, management, and monitoring of these species.

IM 97-118 continues by reiterating BLM policy to ensure actions authorized, funded, or carried out by BLM do not contribute to the need for any species to become listed as a candidate, or for any candidate species to become listed as threatened or endangered. Early identification of BLM sensitive species is advised in efforts to prevent species endangerment, and state directors are encouraged to collect information on species of concern to determine if BLM sensitive species designation and special management are needed.

We look forward to working with you to turn around the Smith's Fork Allotment.

Sincerely,

Jonathan B Ratner
Director – Wyoming Office