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Comments: Ruby Oil and Gas - TU comments

Hi Susan,

Please accept the following attached comments on the proposed Ruby Mountain oil and gas leasing analysis. We are appreciative of the opportunity to comment on this important planning process. Feel free to contact either Pam or myself should you have any questions.

Cheers,

Cathy

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Scoping Overview

We cannot emphasize enough the value and relationship of the Ruby Mountains to the local communities, anglers, hunters, ranchers and recreationists. This relationship is a critical part of Nevada[rsquo]s natural resource heritage. The Ruby Mountains currently enjoy healthy and sustainable multiple use opportunities and opening them up to oil and gas development is one use that should not be permitted in this important place.

Trout Unlimited believes the Forest Service should not make the Ruby Mountains[rsquo] landscape available for leasing based on the following fatal flaw considerations:

1. The HTNF has set a precedent in denying leasing in the HTNF unless a plan amendment is enacted, due to the historical nature of the HTNF Forest Plan (1986).[1]
2. The current oil and gas leasing analysis is outdated and the Forest cannot provide a thorough analysis in an Environmental Assessment (EA) that would provide the [ldquo]hard look[rdquo] that NEPA requires.
3. The HTNF[rsquo]s outdated plan does not provide the necessary updated stipulations that would be attached to these leases and that would provide critical protections against harms associated with oil and gas drilling activities. The Forest would be basing a leasing decision on information and assumptions that have changed dramatically over the past 31 years.
4. Due to the presence of endangered and threatened species, the context and intensity of the leasing actions, the potential for adverse and significant harm, and the potential for a major federal action, at a minimum, an Environmental Impact Statement (EIS) should be conducted if the Forest does not withdraw these lands from leasing availability.[2]

Specific Scoping Analysis Recommendations

We appreciate that the HTNF is conducting this leasing analysis. Our scoping recommendations for analysis are organized into two categories: 1) Resource Peril and Scientific Findings and 2) Administrative Unpreparedness. Please note that the scientific findings and resource peril supersede the administrative faults. The resource values can stand alone to support denial of leasing availability but the administrative inadequacies are too pronounced not to be called out.

1.
Resource peril and scientific findings to support denial of leasing options in all parcels identified:

The HTNF contains threatened and sensitive fish and wildlife species that would be adversely affected by oil and gas drilling activities, once the leases have been sold. In addition, most of the Ruby Mountains contain inventoried roadless areas (IRAs) that support backcountry landscapes bordering on primitive and containing essential fish and wildlife habitat. The current forest plan is outdated and will not be adequate in its ability to provide updated environmental analysis on impacts to fish and wildlife habitat, water quality and quantity, air quality, and climate change parameters.

Lahontan cutthroat trout. The Ruby Mountains contain populations of Lahontan cutthroat trout (Oncorhynchus clarkii henshawi), Nevada[rsquo]s native trout and state fish (Map 1). Native to the Lahontan basin in Northern Nevada, this species was classified as threatened in 1975 under the Endangered Species Act by U.S. Fish and Wildlife Service (USFWS)and in a 2009 status review, Lahontan cutthroat trout (LCT) was still found to meet the definition of threatened. Lahontan cutthroat trout require cold, clear waters with available cover of well-vegetated and stable stream banks, and free of silt. Currently they are only found in approximately 10 percent of the streams that they historically occupied. With 90 percent of their historic habitat no longer occupied, every segment of stream that contains LCT populations is vital to their existence.

Map 1. Overview of proposed lease parcels and locations of important native cutthroat trout streams and inventoried roadless areas.

Plans to improve species survival and prevent threatening conditions that could alter LCT survival have been implemented by the Nevada Department of Wildlife[rsquo]s (NDOW) Lahontan Cutthroat Trout Fishery Management Plan and the USFWS[rsquo] Recovery Plan for the Lahontan Cutthroat Trout. In addition, a Memorandum of Understanding (MOU) between the NDOW, USFWS, the Forest Service and the Bureau of Land Management (BLM) was signed in 1996 to provide specific management direction for LCT recovery.[3] Specific requirements by each agency are outlined in this MOU and TU recommends the HTNF include this MOU and the recovery plan efforts in its analysis.

Trout Unlimited is working with NDOW on projects within the footprint of this leasing proposal to help LCT recovery efforts. Part of this work includes updating the current LCT Management Plan. Trout Unlimited and its partners have expended considerable effort and financial investment in native LCT restoration and rehabilitation work in Nevada and in the Ruby Mountains, with more projects planned in the future. Thus, we have significant concerns about the impacts of the proposed leasing actions on the numerous LCT drainages within the Ruby Mountains. We believe that the Forest should consider these activities in its leasing analyses.

The proposed lease parcels are located in numerous streams and drainages containing naturally occurring LCT populations or are slated for recovery management waters. Almost all the major waters in the Ruby Mountains have been identified as historic distribution areas; occupied drainages include Pearl Creek, Green Mountains, Carville, McCutcheon, Seitz, Lee and Welch Creeks based on the most current updates. These drainages intersect most of the proposed lease parcels. Projects for LCT recovery and sustainability are currently underway in Toyn, Brown and Corral Creeks. The maps presented in our comments are based on LCT shapefiles from 2009 population inventories; the latest occupied habitat information comes from updated research and projects from NDOW and TU.

Streams such as Carville Creek, Green Mountain Creek, and Pearl Creek (in the Green Mountain area [ndash] Map 2) contain conservation populations of LCT. Under no circumstances should oil and gas activities be allowed within these watershed drainages.

Lee Creek and Welch Creek in the Ruby Dome area (Map 3) contain current populations of LCT. While not identified as conservation populations they are nonetheless high value streams that require strong protection measures to promote the future recovery of LCT. In fact, for the species to recover, all historically occupied streams must also be included in the analysis to protect LCT strongholds for the future of this species.

Trout Unlimited requests that considerable analysis be undertaken by the Forest Service to substantiate the need to withdraw all of these parcels from leasing consideration, including those located in the southern end of the

Ruby Mountains (Map 4). Impacts to surface and groundwater resources and accountability for water quantity must be considered. Current No Surface Occupancy (NSO)stipulations under the outdated HTNF plan for stream corridors is insufficient to provide the protections needed from oil and gas activities. For any protection measure to protect waters containing LCT habitat, a minimum of one-half mile NSO buffer should be stipulated on the lease, should the Forest Service proceed with leasing. However, it is important to emphasize that the act of placing a stipulation such as NSO on a lease does not necessarily mean it is protected. Once that lease is sold, it is committed to a future action and that action has long-term consequences.

Map 2. Lahontan cutthroat trout waters located within the proposed lease parcels.

New studies recently completed illustrate the lingering effects oil and gas development can have on cutthroat trout waters. In Wyoming, a study on the eastern flank of the Bridger-Teton National Forest in the Wyoming Range revealed significant persistent impacts on Colorado River cutthroat trout (CRCT) populations.[4] Impacts from oil and gas development to native CRCT streams in the Wyoming Range in Bridger-Teton National Forest established a direct connectivity between poor water quality, location of wells, and low populations of CRCT. Streams in the disturbed area of Dry Piney Creek, where well pad density was 3.4 wells per square mile and where an oil spill had occurred in 2012 (affecting fish populations), showed poor habitat conditions, decreased willow cover, increased stream incision and greater prevalence of bare dirt. Additionally, the macroinvertebrate populations, so important to trout survival, were low, leading to the disappearance of native trout along Dry Piney Creek.

Other lingering impacts to watersheds from oil and gas activities also are referenced in Wyoming. We are referencing Wyoming due to its high level of oil and gas activities over the years, its history of studies being deployed to combat the impacts, and its similarities to Nevada in its open landscapes and rural

Map 3. Current and historic LCT populations located within the proposed lease parcels and surrounding habitat in the Ruby Mountains.

populations. The Wyoming Department of Environmental Quality described concerns in its 2016 303 Report, where oil seeps and physical degradation are affecting the headwaters of LaBarge Creek, Dry Piney Creek and South Piney Creek drainages within the Upper Green River Sub-basin.[5] Oil and gas wells and gas processing facilities are located within this Sub-basin and these creeks were all at one time important CRCT habitat. Dry Piney Creek no longer contains CRCT populations and LaBarge Creek and South Piney Creek only contain

CRCT populations in their upper headwaters.

The Ruby Mountains contain numerous streams, wetlands, riparian areas, and springs that communicate with groundwater resources. These water resources support LCT populations, wild trout fisheries, big game, migratory bird species and livestock. The Forest must include the effects of water drawdowns, discharges, or other sources of impacts that would harm waters and associated habitats in this area.

Map 4. Lease parcels located in the southern Ruby Mountains and within IRAs.

Inventoried Roadless Areas and Wilderness Considerations. Trout are particularly important barometers of land health. Any action imposed upon the landscape is reflected in the condition of our rivers, streams, and species that depend on them. When a significant number of native fish populations have been lost, such as what LCT have experienced, it becomes clear that Nevada[rsquo]s rivers and streams have suffered degradation from roads, mining, unchecked recreational impacts, and other energy development impacts.

Allowing leasing and the eventual energy development that follows from this irretrievable leasing action into this roadless country threatens these native trout streams, the big game herds, and our outdoor heritage. Lahontan cutthroat trout are hanging on in these undeveloped headwaters in the Ruby Mountains while restoration projects seek to reconnect them to downstream habitat. This native trout relies on Nevada[rsquo]s pristine roadless areas for spawning habitat. Big game herds, particularly mule deer, depend upon the critical winter habitat that occupies the roadless backcountry of the Ruby Mountains.

Roadless areas, such as those in the Ruby Mountains, experience far fewer impacts and as a result they hold the bulk of healthy native trout populations in Nevada. As our maps illustrate, there is a striking correlation between roadless and wilderness areas and superior fish and wildlife habitat. These backcountry roadless areas also provide clean water for Nevada[rsquo]s municipalities and irrigators downstream from the Ruby Mountains. Leasing these landscapes would jeopardize some of the last best places for secure fish and big game habitat.

For leasing to be permitted within roadless areas, the Forest Service has to concur with the BLM[rsquo]s proposed leasing offering. However, exploration and development of leasable mineral resources are discretionary activities and the Forest Service may or may not allow them. In addition, any proposed leasing within roadless areas require EIS analysis prior to the issuance of mineral leases. Further, the Forest Service must also require surface use plans, monitoring of the energy disturbance activities and enforcement of all surface-use requirements and reclamation standards. Due to the age of the current HTNF plan, the above requirements are not sufficiently addressed and any future leasing must include a plan revision and EIS review.[6]

Scoping Analysis Considerations

Efforts to maintain and recover these waters for LCT reintroduction are actively ongoing. Any type of oil and gas activity results, by its very nature, in surface and subsurface degradation to the environment and the presence of hazardous materials. In addition to our previously mentioned recommendations above, we also recommend the following analysis be considered in the leasing review:

* Current stipulations are inadequate in providing protection measures for LCT. It is incumbent upon the HTNF to include updated information regarding the status of the LCT on the Forest and implication analyses from the impacts of oil and gas activities.
* Any loss of riparian and wetland areas on the Forest could seriously affect the survival and recovery of LCT species. The Forest must include a watershed analysis and evaluate the threats that could impact these important and vital riparian areas from oil and gas activities. This must include a surface-groundwater analysis that defines the extent of communication between important streams and groundwater resources.
* Oil and gas activities require water. Analysis must include impacts to coldwater fisheries from water depletion attributed to oil and gas development. This is of particular importance in a state such as Nevada where water is a premium entity and most of Nevada is considered arid or semi-arid in nature. Numerous studies indicate the role fracking has on geological stability and the impacts from deep injections of wastewater from drilling.
* Analysis must be included that evaluates the impacts of hydraulic fracturing given the recent studies illustrating the risk and harm to water resources and wells from this activity.[7]
* Analysis must be included that evaluates potential impacts caused by sediment deposition from increase surface disturbance from leasing, and its direct and indirect affects to LCT and fisheries in general.
* USFWS has prepared new rules and policy to better clarify how it designates and protects critical habitat for sensitive species such as LCT.[8] We recommend the Forest include this rule which identifies ESA Section 7 consultation and policy regulations for critical habitat.

* Roads and equipment surface development impacts must be analyzed. Studies show that roads have a significant impact on water quality, vegetation, and air quality. Sedimentation from dust due to truck traffic impacts streambeds used for LCT spawning activities. Eggs can be smothered and die, thus impacting the future recovery of LCT populations. We recommend a thorough evaluation be included in the Forest[rsquo]s analysis.
* Water quality and its use in the operations of oil and gas development must be reviewed. The amounts and types of water required for cradle-to-grave development of oil and gas facilities and resources must be in the analyses. This should also include a review of how the water will be managed for treatment, holding tanks on or off well development sites, disposition of discharge waters, etc.
* Air emissions considerations must be included in the analyses. Impacts to air quality is a high concern for communities experiencing oil and gas development (such as Pinedale, Wyoming, where oil and gas development has significantly impaired air quality and a non-attainment status has been attached by the state of Wyoming).
*
The EA must include analysis on climate change. The Forest is well prepared to offer substantial analysis based on the considerable literature and studies conducted over the last ten years.

Big Game Habitat and Sportsmen[rsquo]s Considerations. Although TU[rsquo]s greatest focus is on aquatic

resources, our membership and supporters include hunters and conservationists who also enjoy the backcountry landscape offered in the Ruby Mountains. Potential impacts associated from increased oil and gas activities within the Ruby Mountain area could harm the hunting, fishing, tourism and recreation attributes that make up the Ruby Mountain landscape. Numerous studies conducted in the last ten years across the West have demonstrated the impacts to a sporting and tourism heritage from associated oil and gas activities. Such impacts include altered or discontinued migration patterns of big game species, loss of clear and clean waters for wildlife (in addition to trout), loss of critical wildlife habitat and consequential decreased wildlife populations. This can result in potential listing of sensitive species that depend on this habitat as their last stronghold for survival. These consequences directly affect the economic bottom line and sustainability of angling and hunting outfitters and guides, tourism activities and related businesses, livestock operations, recreational businesses, and NDOW, who depend on the sale of licenses to make up part of their budget.

The Ruby Mountains contain populations of bighorn sheep, elk, mule deer and pronghorn antelope (Maps 5, 6, 7). This landscape is most noted for its high value in providing critical winter habitat for mule deer, big horn sheep and pronghorn antelope. The Ruby Mountains contain one of Nevada[rsquo]s largest mule deer herd, and provides the most deer hunting opportunities in licenses sold. Oil and gas development in the Ruby Mountains could significantly affect the economic bottom line of many outfitting businesses, the NDOW, and local communities who depend on the residual effects of hunters who access this area. Stipulations will not improve the likelihood of protection. Most stipulations are only good for the exploration period and not the development period, which can last up to 40 years. In Wyoming, recent mule deer studies indicate long term impacts from oil and gas development within the Pinedale BLM landscape showing profound effects on mule deer populations and harvest objectives.[9] Within the

Map 5. Location of critical winter habitat for mule deer and pronghorn antelope, and elk distribution throughout the Ruby Mountain area. Mule deer occupy the general landscape year-round as well, but critical winter habitat remains the important value for sustaining these large populations.

Pinedale Anticline, mule deer herd abundance declined by 36 percent during the development period despite aggressive onsite mitigation efforts and consequently resulted in a 45 percent reduction in mule deer harvest.

Map 6. Elk, bighorn sheep and mule deer habitat within the Ruby Dome landscape. Critical corridors are also an important piece of big game habitat within the Ruby Mountain area.

Map 7. Mule deer critical winter habitat, and pronghorn and elk distribution within the southern end of the Ruby Mountain landscape and within IRAs.

Greater Sage-grouse. Greater Sage-Grouse Priority Habitat has been identified in much of proposed leased area. Since the 2010 USFWS warranted-but-precluded listing determination for the sage-grouse under the ESA, states including Nevada have spent considerable time developing management plans that would potentially protect this species. Historical impacts from oil and gas development are well-documented in their effects on sage-grouse populations, particularly in Wyoming where so much oil and gas development has occurred. One of the larger leks in Nevada is utilized in the Green Mountain parcel.

Studies indicate, as with mule deer, that oil and gas impact sage-grouse populations. In a 2017 study, lek attendance of male sage-grouse declined by approximately 2.5 percent from 1984 [ndash] 2008 and was negatively related to oil and gas well density. The alarming results of this study illustrated that despite attempts to improve sagebrush cover, little support existed for the presence of cover and precipitation on changes in the lek counts over that period. This study further surmised that since sage-grouse are a sagebrush-obligate species, it is assumed that development may also negatively affect other sagebrush-obligate species as well.[10]

In another recent study, the influences of protective sage-grouse core areas were evaluated as to their effectiveness in maintaining sage-grouse populations in Wyoming in oil and gas intensive landscapes.[11] Core areas are designated for sage-grouse conservation and established through the Wyoming Sage-Grouse Executive Order of 2008. Results showed that core areas are more protected than non-core areas since core areas have restricted well pad development guidelines. However, it was noted that core areas alone cannot provide the increased conservation actions that are required to improve sage-grouse protection and future populations.

Based on these studies and trends to big game and sage-grouse populations from oil and gas development activities, we recommend the Forest Service include the following analyses in their leasing review:

* Provide updated big game habitat evaluations for the Ruby Mountain landscape, including habitat and climate change limitations that could affect future population stability.
* Provide analysis on impacts to big game and sage-grouse species from oil and gas development.
*
Provide analyses that would consider the economic and recreation impacts to hunting, recreation, and local dependent businesses should oil and gas development occur in the Ruby Mountains.

2.) Administrative Unpreparedness[ndash] Forest Service

The 54,000-acre oil and lease sale proposal is located in one of the most wildlife rich and recreationally-enjoyed areas of Nevada. This distinction alone deserves thorough and rigorous evaluation to the potentially drastic impacts large scale industrial operations might have on this landscape. Because we believe that the sale of these leases would result in significant environmental harm to the entire Ruby Mountain range, any EA by its nature of brevity would not be able to provide the extensive analysis required for this proposed action. Based on the importance of the Ruby Mountains to the earlier-demonstrated ecological evidence, the HTNF review should result in a determination that this area should not be leased.

However, should the Forest Service determine that this landscape is available for leasing, we believe the significance of scale in this action should trigger an EIS analysis. Since it seems apparent that the Forest Service is unsure whether an EIS is required or not, we believe the EA should determine that a full EIS is required. In fact, the Forest has the ability to waive the EA requirement and proceed directly to the EIS process once they realize the full impacts associated with this proposed leasing.[12]

Outdated Forest Plan. The current forest plan for the HTNF is outdated and inadequate in its ability to analyze the impacts of this proposal. Though the scoping statement identified stipulations which will be applied to the leases, these stipulations are based on the 1986 forest plan; as such, they too are outdated and do not reflect the latest data on oil and gas impacts and protection efforts to minimize fish and wildlife harms. Adverse environmental effects from the sale of these oil and gas leases will be more significant than those uses currently on the Ruby Mountains landscape.

As mentioned earlier, the Forest Service did determine in 2007 that the leasing analysis in the 1986 Humboldt forest plan did not comply with requirements under 36 CFR (Part 228) and the Forest had to prepare a new leasing analysis, prior to making the decision to make those lands available for leasing. We believe the same situation exists with the Ruby Mountain lease proposal.

There are adverse environmental impacts that cannot be avoided once these leases are sold. The HTNF plan is not prepared to anticipate these impacts nor are they able to provide the protections required to allow such

development[mdash]the current plan does not have the sufficient information or guidance available regarding environmental costs and consequences of this leasing action. Though the Forest may think that the actual lease sale does not impact the landscape, in fact, the sale of these leases represents an irreversible and irretrievable commitment of resources. Once these leases are sold, this area becomes vulnerable for the long-term future.

Development of Reasonable Alternatives. The Forest Service has an obligation to offer a discussion of reasonable alternatives for this proposed action. It must include more than the current and proposed leasing action to meet its NEPA guidelines. Because of the high level of conflict associated with this leasing action, we recommend that the Forest include a decision that 1) withdraws the Ruby Mountains from further leasing actions or a No Leasing Alternative, and/or 2) the HTNF will prepare a thorough EIS that includes rigorous exploration and evaluation of all reasonable alternatives. All alternatives in the EA need to provide substantial details in order that the public fully understand and can evaluate the merits of the Forest[rsquo]s comparative analysis.

We recommend the Forest Service include analysis in the EA that covers the following:

* Address the native fish and riparian areas as identified in the December 2000 HTNF Plan Amendment 5. Under this Amendment, priority watersheds were supposed to be identified, riparian goals were required, and a Riparian Habitat Conservation Areas (RHCA) were to be completed.
* The HTNF is required to complete watershed analyses prior to construction of any new roads within priority watersheds. The HTNF is a forest that has priority watersheds with designated criteria considerations and a supposed action plan for protection of these areas.
* A Road Management Plan is also required and should contain recommendations for minimizing road locations and avoid sediment delivery.
* Also under Amendment 5, a Minerals Management process should be in effect which considers all effects of activities associated with mineral development and impacts to native fish to determine significant surface disturbance. All RHCAs should have an NSO stipulation.
* A new and updated Reasonably Foreseeable Development Scenario (RFDS) for oil and gas development must be conducted. This RFDS document by definition is a reasonable, technical, and scientific estimate of the anticipated oil and gas activity based on current data. This document will then be used to determine the cumulative impacts from oil and gas activity. Interestingly enough, in the forest plan, the Ruby Mountains have been identified as not valuable for oil and gas potential. According to geology reports, the Ruby Mountains contain mostly granitic metamorphic rocks with very little if any chance of oil and gas occurrence. However, should technology improve enough to access any hidden unknown resource, a complete analysis of the effects of hydraulic fracturing must be included.
* Any NEPA analysis must also include the cumulative impacts and the larger landscape which will be impacted through the leasing actions, including roads, pipelines, compressor stations, facility infrastructure and powerlines.
*

The HTNF must conduct a forest plan revision prior to its offering of any new leases or other large-scale project which significantly impacts the environment.

Conclusion

We believe it is in the best interests of the environment and human resources to not lease the Ruby Mountains under this proposed leasing analysis. The HTNF has the full authority to entirely dismiss this leasing proposal and offer a no leasing alternative.

The current 1986 Forest Management Plan for this area does not represent current habitat conditions, wildlife populations, recreation activities, or impacts from technologies now employed for oil and gas drilling. We believe that with an updated forest plan, given all the evidence, the Ruby Mountains would maintain their low leasing availability and most likely be determined [ldquo]closed[rdquo] for leasing. The unique character of this area and recreational use is not compatible with oil and gas drilling.

We respectfully request the Forest to make a no leasing determination for this important and unique piece of Nevada, for current and future populations to enjoy. It is the fiscally appropriate alternative.

Thank you for this opportunity to participate in what we consider an important part of the public lands planning process. We remain available to help with any information you may need.

[1] White Pine and Grant-Quinn Oil and Gas Leasing Project. Final Environmental Impact Statement. Humboldt-Toiyabe National Forest. July 2007.

[2] NEPA Section 102(2)(C): an EIS must be prepared for proposed [ldquo]major Federal actions significantly affecting the quality of the human environment[rdquo]. 42 U.S.C.[sect] 4332(2)(C).

[3] State of Nevada, Department of Wildlife. Lahontan Cutthroat Trout Species Management Plan for the Upper Humboldt River Drainage Basin. Species Management Plan, December 2004.

[4] Girard, Carlin E. 2015. The Effects of Oil and Natural Gas Development on Water Quality, Aquatic Habitat, and Native Fish in Streams along the Wyoming Range: A thesis submitted to the University of Wyoming. Zoology and Physiology. Laramie. August 2015.

[5] Wyoming Department Environmental Quality. 2016. [ldquo]Wyoming[rsquo]s[rsquo] 2014 Integrated 305(b) and 303(d) Report.[rdquo] February 25, 2016. Prepared by Wyoming Department Environmental Quality, Water Quality Division, Cheyenne, Wyoming. Document #16-0126.

[6] 36 CFR 228, Subpart E.

[7] Gail M. Atkinson, et al. 2016. Hydraulic Fracturing and Seismicity in the Western Canada Sedimentary Basin. In Seismological Research Letters, v. 87, i.3, p. 631-647. May 2016; Cliff Frohlich, University of Texas at Austin. May 2016. From Frohlich[rsquo]s article in Seismological Research Letters on website accessed May 18, 2016 regarding humans causing earthquakes in Texas since the 1920s, http://phys.org/news/2016-05-humans-

earthquakes-texas-1920s.html.

[8] USFWS. Listing Endangered and Threatened Species and Designating Critical Habitat; Implementing Changes to the Regulations for Designating Critical Habitat. ESA Regulatory Reform. February 2016; effective March 2016.

[9] Sawyer, Hall, Korfanta, N., Nielson, R., Monteith, K. and Strickland, D. 2017. Mule deer and energy development[mdash]Long-term trends of habituation and abundance. Glob. Change Biol. 2017;00:1-9. https://doi.org/10.1111/gcb.13711.

[10] Green, Adam W., Aldridge, C.L., and O[rsquo]donnell, M.S. (2017). Investigating impacts of oil and gas development on greater sage-grouse. Journal of Wildlife Management, 81:46-57. Doi:10.1002/jwmg.21179.

[11] Gamo, Scott, Beck, J.L. (2017). Effectiveness of Wyoming[rsquo]s Sage-Grouse Core Areas: Influences on Energy Development and Male Lek Attendance.

[12] 40 CFR [sect] 1501 1501.3(a). Also see Missouri Mining, Inc. v. Interstate Commerce Commission, 33 F.3d 980 (8th Cir.1994).