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Working to protect and restore Western Watersheds and Wildlife

Western Watersheds Project

June 14, 2021

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Via Email: rixey.jenkins@usda.gov

Re: Scoping Comments Monitor-Toquima Range Vacant Allotment Project EA

Dear Ms. Jenkins,

Thank you for accepting these scoping comments on behalf of Western Watersheds Project and Wilderness Watch. We are concerned about the national push by the Forest Service to reauthorize grazing on vacant allotments, especially those with high wildlife and wilderness values. These efforts set a precedent that is counterproductive and regressive. These six allotments under consideration for reauthorized use in the Monitor-Toquima Range (McKinney, Meadow Canyon, Monitor Valley East, Monitor Valley West, Silver Creek, and Table Mountain) are particularly special and have been recovering nicely since they were vacated in the mid-1990s. To reauthorize grazing here now would be wholly irresponsible and would not serve the public's interests and the wildlife and ecological resources found on these fragile public lands.

Western Watersheds Project (WWP) is a non-profit organization with more than 12,000 members and supporters. Our mission is to protect and restore western watersheds and wildlife through education, public policy initiatives and legal advocacy. Western Watersheds Project

and its staff and members use and enjoy the public lands and their wildlife, cultural and natural resources for health, recreational, scientific, spiritual, educational, aesthetic, and other purposes.

Wilderness Watch is the leading national organization whose sole focus is the preservation and proper stewardship of lands and rivers included in the National Wilderness Preservation System (NWPS). The organization grew out of the concern that while much emphasis is being placed on adding new areas to these systems, the conditions of existing Wilderness and rivers are largely being ignored. We believe that the stewardship of these remarkable wild places must be assured through independent citizen oversight, education, and the continual monitoring of federal management activities. Wilderness Watch is committed to citizen oversight, public education and when necessary, legal and legislative action, to protect America's finest environmental legacy for present and future generations.

Comments

Public participation

NEPA has two primary goals. The first goal is to ensure that a government agency carefully gathers and evaluates relevant information about the potential impact of a proposed agency action on the environment. *Southern Utah Wilderness Alliance v. Norton*, 301 F.3d 1217, 1237 (10th Cir. 2002) (citing *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989)); *see also* 40 C.F.R. § 1500.1(b). The second goal is to ensure "that the agency will inform the public that it has indeed considered environmental concerns in its decisionmaking process" thereby guaranteeing that public is involved in and aware of agency processes. *Committee to Preserve Boomer Park v. Dept. of Transportation*, 4 F.3d 1543, 1554 (10th Cir. 1993) (citing *Baltimore Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 97, 103 (1983)); *see also* 40 C.F.R. 1500.1(b); 1500.2(d); 1506.6.

NEPA requires the Forest Service and other federal agencies to, in the fullest extent possible, "[e]ncourage and facilitate public involvement in decisions which affect the quality of the human environment." 40 C.F.R. § 1500.2(d); *see also National Park and Conservation Ass'n v. Federal Aviation Admin.*, 998 F.2d 1523, 1531 (10th Cir. 1993) ("Congress, through . . . NEPA, has determined that the public has a right to participate in actions affecting public lands."); *Sierra Club v. Hodel*, 848 F.2d 1068, 1093 (10th Cir. 1988) (NEPA "provides for broad-based participation" and requires "a cross-pollination of views."). Specifically, NEPA's public participation regulations require the Forest Service to "(a) [m]ake diligent efforts to involve the public in preparing and implementing their NEPA procedures" and to "(b) [p]rovide public notice of NEPA-related hearings, public meetings, and the availability of environmental documents so as to inform those persons and agencies who may be interested or affected." 40 C.F.R. § 1506.6(b).

The public needs to be able to review and comment on a full NEPA analysis prior to the objection stage. *Anderson v. Evans*, 314 F.3d 1006, 1016 (9th Cir. 2002) (interpreting NEPA's public notice requirement to mean that the "public must be given an opportunity to comment on draft EAs and EISs"); *see also Citizens for Better Forestry v. U.S. Dep't of Ag.*, 341 F.3d 961 (9th Cir. 2003). The Forest Service's planning regulations also require that "[t]he responsible

official shall provide opportunities to the public for . . . commenting on the proposal *and the disclosure of its environmental impacts in accompanying National Environmental Policy Act (NEPA) documents*." 36 C.F.R. § 219.4(a) (emphasis added).

The Forest Service should commit to a full comment period when the environmental analysis is issued prior to issuing its proposed decision. The information provided in the Notice of Proposed Action is not detailed enough to foster informed comments on site-specific proposals, conditions, and other issues. And there is no analysis to comment on. Please post all comments received on this NOPA and in subsequent comment periods on the project website.

Baseline information

The NEPA analysis should include a detailed description of the environmental baseline conditions because "[w]ithout establishing the baseline conditions . . . there is simply no way to determine what effect the [action] will have on the environment, and consequently, no way to comply with NEPA." *Half Moon Bay Fisherman's Marketing Ass'n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988). "The establishment of a 'baseline is not an independent legal requirement, but rather, a practical requirement in environmental analysis often employed to identify the environmental consequences of a proposed agency action.'" *Or. Natural Desert Ass'n v. Jewell*, 840 F.3d 562, 568 (9th Cir. 2016) (quoting *Am. Rivers v. FERC*, 201 F.3d 1186, 1195, n.15 (9th Cir. 1999)).

The Forest Service does not know the trends and population status of all sensitive species, including greater sage-grouse and elk, on the allotments. The Forest Service must adequately establish a baseline because they do not know the full extent of the species present and their habitat utilization of the allotment. By establishing what a reference condition should look like, they can then begin to determine the extent to which livestock grazing would impact sage-grouse, sensitive species and plants by studying the differences between what populations should look like and what their actual status and condition is today. From here, the Forest Service can determine what the minimum thresholds are for recovering species and can adjust proposed AUMs accordingly.

The NEPA analysis should provide a detailed history of grazing on these allotments, conditions that resulted, and actual use for recent decades, including the actual trespass use noted in the NOPA.

We also request that the NEPA analysis present high quality, detailed mapping that includes:

- Sage-grouse seasonal habitats (leks, with status; nesting; early and late brood rearing; winter)
- Sage-grouse habitat management areas
- Sage-grouse habitat monitoring locations
- Bighorn sheep occupied habitat (including seasonal areas)
- Pygmy rabbit habitat
- Fish bearing streams, with species noted
- Columbia spotted frog potential or occupied habitat

- Mule deer, elk, and pronghorn seasonal habitat
- Wilderness areas, RNAs, and other special management areas
- Recreation sites
- Grazing allotments showing pasture divisions
- All existing livestock infrastructure (fences, water developments, tanks, corrals, pipelines, troughs, etc.)
- All existing livestock exclosures
- Grazing capability and suitability
- Soil maps
- Livestock trailing routes
- Waterways (clearly showing riparian category/class)
- Condition of waterways based on GAWS Monitoring, PFC, etc.
- Springs, seeps, and wet meadows with current condition
- Water quality designations (e.g. impaired waterways)
- Water diversions on Forest Service land
- Aspen, bitterbrush, mahogany, cottonwood, and limber pine
- Sensitive or special status plants
- Invasive plant species occurrences (including medusahead, *Ventenata*, cheatgrass, whitetop, and other noxious weeds)
- Seedings, and other vegetation manipulation
- Fire History

Lack of detailed proposal

The proposed grazing regime is highly indefinite and therefore, it is difficult to understand what the grazing that the Forest Service would actually authorize entails. This is problematic for a number of reasons.

First, what is the source of authority to allow flexible seasons of use? Under the Federal Land Policy and Management Act (FLPMA), the Forest Service is required to specify season of use as a mandatory term and condition of a grazing permit. 43 U.S.C. § 1752(e); 36 C.F.R. § 222.3(c)(1)(vi)(E); *see also Nat. Res. Defense Counc. v. Hodel*, 618 F. Supp. 848, 869–70 (E.D. Cal. 1985). Does Forest Service policy allow the type of variable season of use proposed here?

Allowing permittees to decide when they will graze their livestock on public lands removes one of the few measures of accountability that permittees have to the agency and to the public. The ability to know when and where livestock are authorized is the most straightforward way for managers and the public to provide oversight of grazing on public lands. Even under the current system of defined seasons of authorized use, it can be difficult for the public to know for sure when livestock are authorized in a given location.

However, it is fraught with accountability issues, does not allow the Forest Service or the public to appropriately evaluate the environmental impact of grazing, and is fundamentally inconsistent with the concept of federal trustee management. It is also unnecessary because the Forest Service already has the ability to adjust grazing yearly based on environmental conditions.

Further, and even more importantly, if seasons of use are not defined, there is no way to accurately consider what the impacts of grazing are, or monitor trends that would allow the Forest to make corrections or changes. Domestic livestock have very different impacts on different resources at different times of the year. There are many relevant examples. The impacts of allowing grazing of native grasses in the spring during their critical growth and reproductive cycles is different than grazing them in the fall, after they have set seed. Allowing livestock in salmonid streams has a different impact to fish if they are spawning, or rearing, and in some cases, they may be present in certain reaches only during certain times of the year. Grazing in late spring and early summer impacts native wildlife during their breeding and nesting seasons, or when they have young offspring, while grazing in winter habitat may impact their wellbeing during that critical time, even when livestock are not present. Livestock have different impacts to uplands and riparian areas during mid-summer than they do during spring or fall. Grazing during sage-grouse nesting season has different impacts than grazing during late-brood rearing season. Grazing during the winter may be more likely to place cattle and bighorn sheep together. How can the Forest Service accurately analyze these impacts, to inform its own management and for disclosure to the public, if it does not know when grazing will occur in any given allotment? How will the Forest Service know what to correct if grazing harms resources?

Finally, there is ample ability under the Forest Service's current system of defining allowable seasons of use to provide for yearly adjustments because of soil condition, precipitation, and other considerations. These minor variances can be determined through AOIs. Therefore, allowing undefined seasons of use is not warranted.

Rest following wildfire, and drought actions

The proposed action must include defined minimum periods of rest from livestock grazing following disturbance including wildfire, with grazing only resuming after objective mandatory vegetation recovery standards have been reached. The minimum period of rest should be two years, [1] but should extend until standards have been reached. [2] These standards should reflect habitat needs of native wildlife and include criteria for establishment of grasses, forbs, and woody plants.

The proposed action also needs to be explicit about what management actions will occur if there is drought. The proposed action should clearly define drought triggers and management

[1] Longer periods of time are likely required. *E.g.* Yeo, J. 2012. Revitalization of a native Wyoming Big Sagebrush/ Bluebunch Wheatgrass Community in Idaho: a 10-year Summary. BLM Technical Bulletin 2014-1 (recommending 4–5 years of rest following reseeding); Pyke, D.A., Chambers, J.C., Pellant, M., Miller, R.F., Beck, J.L., Doescher, P.S., Roundy, B.A., Schupp, E.W., Knick, S.T., Brunson, M., and McIver, J.D., 2017, Restoration handbook for sagebrush steppe ecosystems with emphasis on greater sage-grouse habitat—Part 3. Site level restoration decisions: U.S. Geological Survey Circular 1426, 62 p., https://doi.org/10.3133/cir1426 (recommending up to 4-6 years of rest depending on vegetation type).

[2] *See* Veblen, Post Fire Grazing Management in the Great Basin, Great Basin Factsheet Series, No. 7 (2015) (available at http://www.sagegrouseinitiative.com/wp-content/uploads/2015/07/7_Post-fire_Grazing.pdf) (last visited August 13, 2019); Pyke et al. 2017, *supra*.

responses so that all parties have a common understanding of modifications that will need to occur during drought.

Monitoring Plan

The NOPA provides only a vague description of monitoring that would take place, making essentially no commitments as to time frames, methods, or corrective actions that would occur if standards are not met. It fails to instill confidence that the Forest Service is committed to ensuring that monitoring, and ecological recovery, will actually take place.

Purpose and Need

The purpose for the action, as defined by the NOPA, is essentially to systematically restock vacant allotments. Why? The NOPA claims the Multiple Use and Sustained Yield Act and the Toiyabe LRMP require the Forest Service to consider authorizing grazing on these allotments but that is simply not true. Neither Multiple Use Sustained Yield Act (MUSYA) nor the existing Forest Plan require that livestock grazing be the primary use of these lands or be authorized at all where it conflicts with other uses. Multiple use does not mean every use must occur in every area. The LRMP is also 35 years old and severely outdated. Understanding and tolerance of the impacts of domestic livestock on wild areas has changed over that time.

Additionally, why is the Forest spending resources on reauthorizing vacant allotments when it has failed to keep up with environmental analysis on current grazing allotments? Grazing on the Jarbidge and Santa Rosa Ranger Districts has not been completed for multiple decades. How many currently authorized grazing permits/allotments in the Austin and Tonopah Ranger Districts lack a current and valid analysis? Reauthorizing vacant allotments should be the Forest's lowest priority.

Please also note in your environmental analysis whether the Forest Service has received applications or expressions of interest to graze these allotments, and if so, from whom.

Alternatives

In a NEPA analysis, the Forest Service must study, develop, and describe alternatives to the proposed action, and analyze "all reasonable alternatives." 40 U.S.C. § 4332(C)(iii); 40 C.F.R. § 1502.14. The alternatives analysis is "the heart of the environmental impact statement," and the agency must "rigorously explore and objectively evaluate all reasonable alternatives." 40 C.F.R. § 1502.14. "The existence of a viable but unexamined alternative renders an environmental impact statement inadequate." *Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1519 (9th Cir. 1992) (quotation omitted).

NEPA's alternatives requirement also serves to inform the public of "reasonable alternatives that would avoid or minimize impacts," 40 C.F.R. § 1502.1, or that "might be pursued with less environmental harm." *Lands Council v. Powell*, 395 F.3d 1019, 1027 (9th Cir. 2005). The EIS's alternatives analysis must "present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear

basis for choice among options by the decision-maker and the public." 40 C.F.R. § 1502.14.

The NEPA analysis here should include a detailed range of alternatives to reauthorizing livestock on these allotments, including:

- An alternative leaving them in vacant status;
- An alternative to amend the LRMP to designate them as unavailable for livestock;
- An alternative that would not authorize grazing within wilderness areas;
- An alternative that would implement the following mandatory use limits to protect sage-grouse and sensitive species:
    - 6" riparian stubble height
    - 35% riparian woody species utilization
    - 10-15% bank alteration
    - 35% upland herbaceous
    - 7" upland stubble height
- An alternative that implements mandatory grazing rest every other year;
- An alternative that protects fish and riparian areas

Further, all grazing alternatives should require active herding by permittees to increase distribution and lessen impacts to riparian areas.

Please also denote the environmentally preferable alternative. 36 C.F.R. § 220.3.

Impacts Analysis

In an EA or EIS, an agency must fully analyze all direct, indirect, and cumulative impacts from a proposed action in its environmental analysis. 40 C.F.R. § 1502.16. "Direct effects" include those "which are caused by the action and occur at the same time and place." *Id.* § 1508.8(a). "Indirect effects" include those "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. *Id.* § 1508.8(b). "Cumulative impacts" result from the "incremental impact of the action" on the environment "when added to other past, present, and reasonably foreseeable future actions regardless of what agency [] or person undertakes such other actions." *Id*. § 1508.7. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. *Id.* Cumulative impact analyses include private, state, and federal action. *Id.*

Underlying all of NEPA's procedural requirements is the mandate that agencies take a "hard look" at all environmental impacts and risks of a proposed action. *See Natural Res. Def. Council v. Morton*, 458 F.2d 827, 383 (D.C. Cir. 1972). This review cannot be superficial, but rather agencies must take this "hard look" in light of comments submitted by the public as well as high-quality scientific information. This "hard look" standard ensures the agency gathers the needed factual information and provides sufficient information to support its conclusions.

NEPA requires that the information an agency uses in conducting its environmental review must be "of high quality," and agencies "must insure the professional integrity, including scientific integrity," of their discussions and analyses, and "shall identify any methodologies

used" and "scientific and other sources relied upon for their conclusions. *Id.* §§ 1500.1(b) and 1502.24. "Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA." *Id.* § 1500.1(b).

The Forest Service's planning regulations also emphasize science-based decisionmaking and require the use of the "best available scientific information." 36 C.F.R. §§ 219.1(c), 219.3. In accordance with the regulations, please document "what information was determined to be the best available scientific information, explain the basis for that determination, and explain how the information was applied to the issues considered." 36 C.F.R. § 219.3.

The NEPA analysis should consider the impacts of the proposed action in detail on all public and natural resources present. Those include the following:

Sage-grouse

The Forest Service must incorporate the best available science on the effects of livestock grazing on sage-grouse and its habitat.

With respect to one of the most critical factors for sage-grouse—residual vegetation—the best available science, and indeed, the preponderance of evidence, has established that at least 7 inches (18 cm) of residual stubble height needs to be provided in nesting and brood-rearing habitats throughout their season of use. According to Gregg et al. (1994: 165),[3]

> "Land management practices that decrease tall grass and medium height shrub cover at potential nest sites may be detrimental to sage grouse populations because of increased nest predation.... Grazing of tall grasses to <18 cm would decrease their value for nest concealment.... Management activities should allow for maintenance of tall, residual grasses or, where necessary, restoration of grass cover within these stands."

Hagen et al. (2007)[4] analyzed all scientific datasets up to that time and concluded that the 7-inch threshold was the threshold below which significant impacts to sage grouse occurred (see also Herman-Brunson et al. 2009).[5] Prather (2010)[6] found for Gunnison sage grouse that occupied habitats averaged more than 7 inches of grass stubble height in Utah, while unoccupied habitats averaged less than the 7-inch threshold. According to Taylor et al. (2010:4),

> "The effects of grazing management on sage-grouse have been little studied, but correlation between grass height and nest success suggest that grazing may be one of the

[3] Gregg, M.A., J.A. Crawford, M.S. Drut, and A.K. DeLong. 1994. Vegetational cover and predation of sage grouse nests in Oregon. J. Wildl. Manage. 58:162-166.

[4] Hagen, C.A., J.W. Connelly, and M.A. Schroeder. 2007. A meta-analysis of greater sage-grouse *Centrocercus urophasianus* nesting and brood-rearing habitats. Wildlife Biology 13:42–50.

[5] Herman-Brunson, K.M., K.C. Jensen, N.W. Kaczor, C.C. Swanson, M.A. Rumble, and R.W. Klaver. 2009. Nesting ecology of greater sage-grouse *Centrocercus urophasianus* at the eastern edge of their historic distribution. Wildl. Biol. 15: 395-404.

[6] Prather, P.R. 2010. Factors affecting Gunnison sage-grouse (*Centrocercus minimus*) conservation in San Juan County, Utah. PhD Dissertation, Utah State Univ., 134 pp.

few tools available to managers to enhance sage-grouse populations. Our analyses predict that already healthy populations may benefit from moderate changes in grazing practices. For instance, a 2 in increase in grass height could result in a 10% increase in nest success, which translates to an 8% increase in population growth rate."

Foster et al. (2014) found that livestock grazing could be compatible with maintaining sage grouse populations, but notably stubble heights they observed averaged more than 18 cm during all three years of their study, and averaged more than 10.2 inches in two of the three years of the study.

Doherty et al. (2014)[7] found a similar relationship between grass height and nest success in northeast Wyoming and south-central Montana but did prescribe a recommended grass height. While there are those who have attempted to cast doubt on the necessity of maintaining grass heights to provide sage-grouse hiding cover, based on timing differences in grass height measurements between failed nests and successful nests, these concerns have been refuted for Wyoming. The significance of the Doherty et al. (2014) study was explicitly tested by Smith et al. (2018), who confirmed that grass height continued to have a significant effect on nest success for this Wyoming study after correction factors were applied to the data.

Connelly et al. (2000)[8] reviewed the science of that time and recommended an 18-cm residual stubble height standard. Stiver et al. (2015)[9] recommended 18 cm grass height for all breeding and nesting habitats, and explicitly stated that this and other established measures should not be altered unless scientific evidence definitively indicates that the 7-inch threshold is inappropriate.

Jankowski et al. 2014[10] studied stress hormone levels in Greater sage-grouse with a focus "on the effects of cattle grazing because of the potential negative effects on sage-grouse habitats and because cattle grazing practices can be influenced by management decisions." They found that residence in a cattle-grazed habitat was associated with increased stress hormone levels in a large sample of greater sage-grouse (329 sage-grouse, 160 from grazed sites and 169 from ungrazed sites). They found higher immunoreactive corticosterone metabolites in greater sage-grouse in cattle-grazed versus ungrazed sites and found a positive correlation of immunoreactive corticosterone metabolites in greater sage-grouse with cattle fecal pat count.

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[7] Doherty, K.E., D.E. Naugle, J.D. Tack, B.L. Walker, J.M. Graham, and J.L Beck. 2014. Linking conservation actions to demography: Grass height explains variation in greater sage-grouse nest survival. Wildlife Biology 20:320-325.

[8] Connelly, J.W., M.A. Schroeder, A.R. Sands, and C.E. Braun. 2000. Guidelines to manage sage grouse populations and their habitats. Wildl. Soc. Bull. 28:967-985.

[9] Stiver, S.J., E.T. Rinkes, D.E. Naugle, P.D. Makela, D.A. Nance, and J.W. Karl, eds. 2015. Sage-Grouse Habitat Assessment Framework: A Multiscale Assessment Tool. Technical Reference 6710-1. Bureau of Land Management and Western Association of Fish and Wildlife Agencies, Denver, Colorado.

[10] Jankowski, M. D., Russell, R. E., Franson, J. C., Dusek, R. J., Hines, M. K., Gregg, M. and Hofmeister, E. K. 2014. Corticosterone Metabolite Concentrations in Greater sage-grouse are Positively Associated with the Presence of Cattle Grazing. Rangeland Ecology and Management. 67(3): 237-246. doi: http://dx.doi.org/10.2111/REM-D-13-00137.1

The analysis should also consider the impacts of infrastructure associated with increased grazing. New water developments facilitate sage-grouse predators and predation. Ravens are significant predators on sage-grouse eggs and chicks. They are visual foragers and use man made structures as perch sites to increase their visual fields. There is published evidence that ravens show a preference for developed livestock waters rather than natural springs as a water source (Knight et al. 1998).[11] Livestock presence is already beneficial to ravens, coyotes, and other subsidized predators in other ways, for example by providing carcasses and disturbances that facilitate raven presence and foraging. There is also the risk that adding new developed waters may encourage raven use of the allotment and thus facilitate the distribution of West Nile Virus across the allotment carried by affected ravens. Livestock infrastructure and livestock themselves also promote increases in ravens (Coates et al. 2016).[12]

Water developments indirectly impact sage-grouse in other ways. The addition of man-made water sources may increase the distribution or abundance of West Nile virus mosquito vectors in sage-grouse habitat placing the local sage-grouse population at risk (Walker and Naugle 2011).[13]

Mortality associated with fence collisions can be dramatic in sage-grouse habitat. For example, Stevens (2011)[14] found that corrected landscape-scale sage-grouse collision rates ranged from 0.12-0.70 strikes/km in 2009 and 0.18-0.75 strikes/km in 2010 (Stevens 2011 p. 63). Avian fence collision surveys in sagebrush-steppe habitats should be conducted with less than 2-week sampling intervals to reduce the impact of survival bias on collision rate estimates and caution should be used when aggregating or comparing uncorrected collision data from areas with differing vegetation, as detection probabilities are likely different between sites (Stevens et al. 2011 p. 447). Marking fences may help reduce collision rates, but collisions still occurred at marked fences <500 m from large leks and moving or removing fences may be necessary (Stevens et al. 2012 p. 297).[15]

Native vegetation communities and soils

The Forest Service must consider the best available science on the impacts to native bunchgrasses and soil crusts, and the attendant increases in invasive annual grasses, from livestock grazing. The literature indicates that livestock grazing is the most important cause of

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[11] Knight, R. L, Camp, R. J. and Knight, H. A. L. 1998. Ravens, Cowbirds, and Starlings at Springs and Stock Tanks, Mojave National Preserve, California. Great Basin Naturalist. 58(4): 393-395.

[12] Coates P. S., Brussee, B. E., Howe, K. B., Gustafson, K. B., Casazza, M. L. and Delehanty, D. J. 2016. Landscape characteristics and livestock presence influence common ravens: relevance to greater sage-grouse conservation. Ecosphere, 7(2): e01203. 10.1002/ecs2.1203

[13] Walker, B. L. and Naugle, D. E. 2011. West Nile Virus ecology in sagebrush habitats and impacts on Greater Sage-Grouse populations. Chapter 10, In: Ecology and Conservation of Greater Sage-Grouse: A Landscape Species and Its Habitats.

[14] Stevens, B. S. 2011. Impacts of Fences on Greater Sage-Grouse in Idaho: Collision, Mitigation, and Spatial Ecology. M.Sc. Thesis, University of Idaho.

[15] Stevens, B. S., Reese, K. P., Connelly, J. W. and Musil, D. D. 2012. Greater sage-grouse and fences: Does marking reduce collisions? Wildlife Society Bulletin, 36(2): 297-303.

the introduction, persistence, and spread of cheatgrass, medusahead wildrye, *Ventenata dubia*, and other invasive annual grasses that have degraded the shrubbsteppe and other habitat in the Great Basin ecosystems across Nevada, and continue to spread.

Biological soil crusts are a natural component of the sagebrush steppe, occurring in the interspaces between shrubs and bunchgrasses. Soil crusts are composed of lichen, moss, algae, fungi, and cyanobacteria (Rosentreter et al. 2007;[16] Belnap et al. 2001).[17] Crusts provide an effective barrier to germination of annual grasses like cheatgrass (Deines et al. 2007).[18] Because soil crusts maintain open areas between plants, rather than continuous vegetation, they also act as a deterrent to fire spread (Belnap et al. 2001). Similarly, the presence of native bunchgrasses inhibits germination and growth of cheatgrass (Reisner et al. 2013).[19] Studies have found that intact sagebrush steppe habitat, with presence of shrubs, robust native grasses, and intact soil crusts, effectively deter establishment of cheatgrass and other native grasses (Condon and Pyke 2018;[20] Ponzetti 2007).[21] Established bunchgrass outcompetes cheatgrass (Mazzola 2008).[22]

Time-series data and results in Williamson et al. (2019)[23] indicate that grazing corresponds with increased cheatgrass occurrence and prevalence regardless of variation in climate, topography, or community composition, and provide no support for the notion that contemporary grazing regimes or grazing in conjunction with fire can suppress cheatgrass.

However, both crusts and bunchgrasses are reduced by grazing pressure. Soil crusts are fragile and easily destroyed by heavy livestock and hooves (Belnap 1995).[24] As a result, loss of soil crusts and native bunchgrasses allows cheatgrass to thrive (Reisner et al. 2013; Chambers et

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[16] Rosentreter, R. et al. 2007. A field guide to biological soil crusts of western US drylands. U.S. Government Printing Office, Denver, Colorado.

[17] Belnap, J. et al. 2001. Biological Soil Crusts: Ecology and Management. BLM TR 1730-2 (2001). U.S. Department of Interior.

[18] Deines, L. et al. 2007. Germination and Seedling Establishment of two annual Grasses on Lichen-dominated Biological Soil Crusts. Plant Soil (2007) 295:23–35. DOI 10.1007/s11104-007-9256-y

[19] Reisner, M. D., Grace, J. B., Pyke, D. A. and Doescher, P. S. 2013. Conditions favouring *Bromus tectorum* dominance of endangered sagebrush steppe ecosystems. Journal of Applied Ecology, 50(4): 1039-1049. doi: 10.1111/1365-2664.12097

[20] Condon, L.A. & Pyke, D.A. Fire and Grazing Influence Site Resistance to *Bromus tectorum* Through Their Effects on Shrub, Bunchgrass and Biocrust Communities in the Great Basin (USA). Ecosystems (2018) 21: 1416

[21] Ponzetti, Jeanne M., Bruce McCune, David A. Pyke. 2007. Biotic soil crusts in relation to topography, cheatgrass and fire in the Columbia Basin, Washington. The Bryologist, 110(4):706-722

[22] Mazzola, M. et al. SPATIO-TEMPORAL HETEROGENEITY AND HABITAT INVASIBILITY IN SAGEBRUSH STEPPE ECOSYSTEMS: A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in
Ecology, Evolution and Conservation Biology. May 2008.

[23] Williamson, M.A. et al. (2019). Fire, livestock grazing, topography, and precipitation affect occurrence and prevalence of cheatgrass (Bromus tectorum) in the Central Great Basin, USA. Biol Invasions. https://doi.org/10.1007/s10530-019-02120-8

[24] Belnap, J. 1995. Surface Disturbances: Their Role in Accelerating Desertification. Environmental Monitoring and Assessment. 37: 39–57.

al. 2007;[25] Condon and Pyke 2018). Forest Service research has shown that rest from grazing can lead to "substantial recovery" of biological crusts.[26]

Another study, Root et al. (2019),[27] published in Ecological Applications, sampled random sites in Idaho's Snake River Plain, and measured biocrust communities and vegetation across low, medium, and high grazing intensities. They found biocrust cover and species richness negatively related to grazing intensity, with plots with the lowest grazing intensity having highest biocrust diversity and cover. Additionally, they found that exotic annual grasses were substantially more abundant in plots with higher grazing intensity. Their results indicated that reduction of biocrust cover and richness favored exotic annual grasses and disfavored perennial grasses, highlighting the importance of biocrust cover in maintaining site resistance to invasion by exotic annual grasses.

Livestock preferentially graze the large, native bunchgrasses that are naturally present in the sagebrush steppe. Because of this preferential emphasis on native species, Young (1992)[28] cautioned that "[c]ontinued grazing of medusahead-dominated grasslands is extremely deleterious on remnant perennial grasses because of differential grazing preference." Young and Clements, 2007: 19,[29] state that: "Once the cheatgrass is mature, the still green native perennial grasses are selectively overgrazed by cattle. If the density of native perennials is low, even low levels of trespass grazing are sufficient to selectively over-utilize the native perennial grasses." Native bunchgrasses in the Great Basin evolved without significant herbivory and there therefore highly sensitive to grazing, diminishing or disappearing when grazed by livestock (Mack and Thompson 1982;[30] Anderson 1991;[31] Reisner et al. 2013).

Pygmy Rabbit

Like the greater sage grouse, pygmy rabbits are sagebrush obligates. Consequently, pygmy rabbits face many of the same threats as sage grouse, including extensive habitat modification due to livestock grazing. Because grazing on the Humboldt Toiyabe National Forest is widespread, there is "substantial concern about the species' capability to persist over

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[25] Chambers, J. et al. 2007. What makes Great Basin Sagebrush Ecosystems Invasible by *Bromus tectorum*? Ecological Monographs, 77(1), 2007, pp. 117–145. The Ecological Society of America

[26] J.H. Kaltenecker, et al., *Biological Soil Crusts in Three Sagebrush Communities Recovering From a Century of Livestock Trampling*, SHRUBLAND ECOTONES, RMRS-P-11 222-226 (USDA Forest Service, Rocky Mountain Research Station, Ogden, Utah 1999).

[27] Root, H., Miller, J., and Rosentreter, R. 2019. Grazing disturbance promotes exotic annual grasses by degrading soil biocrust communities. Ecological Applications, 0,(0), 2019, e02016.https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/eap.2016

[28] Young, J.A. 1992. Ecology and Management of Medusahead (*Taeniatherum Caput-Medusae* SSP. *Asperum*) Great Basin Naturalist, 52(3) pp.245-252.

[29] Young, J.A and Clements, C.D. Cheatgrass and Grazing Rangelands. Rangelands, 29 ()6: 15-20. December 2007.

[30] Mack, R. and Thompson, J. Evolution in Steppe with few large, hooved mammals. American Naturalist, Vol. 11, No. 6. June 1982.

[31] Anderson, Loren D. 1991. Bluebunch wheatgrass defoliation: effects and recovery a review. BLM, Salmon, Idaho. BLM-ID-PT-91-010-4350.

the long-term in the plan area." 36 C.F.R. § 219.9. The Forest should therefore commit to maintaining a viable population of this rare and important indicator species. *See id*. Livestock grazing has been shown to adversely affect pygmy rabbits in several ways. For instance, there is considerable evidence that livestock trample and destroy pygmy rabbit burrows. Pygmy rabbits dig simple shallow burrows in relatively deep, loose soils.[32] Entrances to burrows may be concealed at the base of sagebrush plants. *Id.* Consequently, cattle can directly damage pygmy rabbit borrows through trampling. Austin (2002)[33] documented cattle trampling of active burrows on public lands in southern Idaho. The burrows were subsequently abandoned. It is extremely likely the same phenomenon would occur on the project area, and such impacts must be analyzed.

Livestock can also alter the structure of the sagebrush habitats on which pygmy rabbits depend. Direct impacts include: structural damage to dense stands of sagebrush by livestock, removal of current herbaceous growth or residual cover of native grasses and forbs, and increases in the density and distribution of various invasive weed species. In general, grazing removes vegetative cover, including shrub cover, which leaves pygmy rabbits vulnerable to both areal and ground predators.[34] Cattle also compete directly with pygmy rabbits for forage. Male pygmy rabbits tend travel longer distances in recently grazed areas, where the nutritional value of preferred native grasses and forbs tends to be less. In addition, pygmy rabbits in recently grazed areas tend to make greater use of sagebrush for summer forage than their counterparts in ungrazed areas. *Id.* at 10388.

Migratory birds and small mammals

What are potential impacts to migratory birds and their habitats? Many species are ground-nesting or nest low in shrubs (Dobkin and Sauder 2004).[35] What are the impacts to rodents and other small mammals from removal of grass and vegetation by grazing? What about the myriad species that rely on small mammals as a food source? The EIS must analyze the impacts of intensive spring grazing on these species.

Aspen

These allotments contain very large stands of aspen, with the Table Mountain area an impressive and rare example of very extensive aspen stands in the Great Basin. Cattle can heavily impact aspen stands by browsing on saplings, grazing on understory plants, breaking branches, disturbing and trampling the ground. The Forest should propose management guidelines to prevent cattle from impacting these recovering aspen stands, and halt any

[32] U.S. Fish & Wildlife Serv., Final Rule to List the Columbia Basin Distinct Population Segment of the Pygmy Rabbit (*Brachylagus idahoensis*) as Endangered, 68 Fed. Reg. 10388, 10400 (2003).
[33] M. Austin, An Inventory of *Brachlylagus idahoensis* Within Selected Study Areas of the Shoshone BLM Field Office. (Red Willow Research, 2002).
[34] U.S. Fish & Wildlife Serv. (2003), *supra* at 10400.
[35] Dobkin, D. S. & Sauder, J.D. 2004. Shrubsteppe Landscapes in Jeopardy: Distributions, Abundances, and the Uncertain Future of Birds and Small Mammals in the Intermountain West. High Desert Ecological Research Institute. Bend, OR.

progression to at-risk status and loss of regeneration and diversity of age classes. Bare ground should not exceed 5%.

Cultural Resources

These areas, including Table Mountain wilderness, contain arborglyphs dating to the 1911 or earlier, many from basque sheepherders. These must be inventories, surveyed, and protected from livestock.

Bighorn sheep

Westwide, bighorn sheep populations have declined by more than 90% since the mid-nineteenth century, and bighorn sheep overall distribution has been reduced to less than 30% of the species' historic range.[36] The primary causes of historic bighorn sheep declines include livestock diseases, overhunting, and forage competition with livestock.[37]

Bighorn sheep remain at risk of disease from livestock pathogens throughout the West, with authorized grazing on public lands a limiting factor for many populations. Large areas of historic bighorn sheep habitat are unavailable for recolonization or artificial restocking due to the presence of livestock, including many areas in Nevada.[38] It is NDOW's policy that "[t]he Division will increase bighorn populations of all subspecies statewide to a level where all habitats are occupied and each herd is self-sustaining."[39]

Bighorn sheep are listed as a BLM Sensitive Species in Nevada, a Nevada state Species of Greatest Conservation Need, and a U.S. Fish and Wildlife Service Species of Concern. Bighorn sheep are a Forest Service Sensitive Species in Region 4, and are subject to management direction contained in FSM 2670. This includes direction to:

> 1. Assist states in achieving their goals for conservation of endemic species.
> 2. Review programs and activities as part of the National Environmental Policy Act of 1969 process through a biological evaluation, to determine their potential effect on sensitive species.
> 3. Avoid or minimize impacts to species whose viability has been identified as a concern.
> 4. Analyze, if impacts cannot be avoided, the significance of potential adverse effects on the population or its habitat within the area of concern and on the species as a whole. (The line officer, with project approval authority, makes the decision to allow or disallow impact, but the decision must not result in loss of species viability or create significant trends toward federal listing.)

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[36] U.S. Forest Service. (2009). Addition of Big Horn Sheep to the Forest Service Intermountain Region Sensitive Species List.

[37] Besser, T., Cassirer, F., Highland, M., Wolff, P., Justice-Allen, A., Mansfield, K., Davis, M., Foreyt, W. (2013). Bighorn sheep pneumonia: Sorting out the cause of a polymicrobial disease. Preventive Veterinary Medicine, 108, 85–93.

[38] NDOW. (2001). Bighorn Sheep Management Plan.

[39] *Id*.

5. Establish management objectives in cooperation with the states when projects on National Forest System lands may have a significant effect on sensitive species population numbers or distributions. Establish objectives for federal candidate species, in cooperation with the FWS or NOAA Fisheries and the states.

Cattle grazing has the potential to negatively impact bighorn populations: cattle are known to carry pathogens that can be transmitted to bighorn sheep, cattle may displace bighorn sheep from optimal habitats, reducing foraging efficiency, and cattle contribute to the spread of noxious weeds which outcompete native vegetation, degrade bighorn sheep habitat, and increase fire risk.

Cattle have been implicated in pneumonia-related die-offs of bighorn sheep, as well as in outbreaks of Bovine Viral Diarrhea and other diseases impacting wild sheep. Bovine respiratory syncytial virus (BRSV) and bovine parainfluenza virus 3 have been identified as co-agents in pneumonia outbreaks in bighorn sheep populations, affecting bighorn herds exposed to primary agents *Mycoplasma ovipneumoniae* and *Mannheimia haemolytica.*[40] [41] *Mannheimia haemolytica* originating in cattle is believed to have been a primary respiratory disease agent in at least one bighorn sheep pneumonia outbreak.[42]

Cattle can transmit Bovine Respiratory Syncytial Virus and bronchopneumonia to bighorn sheep (Spraker et al. 1986, Wolfe et al. 2010). Wehausen (1986) discussed other non-native pathogens possibly transmitted from cattle to desert bighorn sheep, including epizootic hemorrhagic disease, blue tongue (commonly carried by cattle), and parainfluenza-3, which have all been implicated in the suppression of lamb recruitment. These may have been vectored by gnats. More research is needed. Wehausen (ibid., 22-23) stated that removal of the possible disease reservoirs in domestic cattle could relieve the local desert bighorn population from a significant stressor that "might produce a significant change in the demography of the bighorn population."

There is evidence of cattle displacement of newly re-introduced bighorn sheep, in an Idaho study of California bighorn sheep. Bisonette and Steinkamp (1996) found that bighorn sheep movement increased when cattle were moved closer. When cattle were moved to within 800m, bighorn left the area. Personnel associated with moving cattle may have played a role in bighorn sheep sensitivity, which raises the question of how trucking in cattle, building new developments, range riders, and other livestock management activities will impact bighorn sheep. The authors conclude that, "Avoidance has implications for reintroductions of bighorn

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[40] Spraker, T., Collins, J., Adrian, W., Otterman, J. (1986). Isolation and serologic evidence of a Respiratory Syncytial Virus in bighorn sheep from Colorado. Journal of Wildlife Diseases, 22(3), 416-418

[41] Dassanayakea, R., Shanthalingam, S., Herndon, C., Subramaniam, R. Paulraj K. Lawrence, Bavananthasivam, J., Cassirer, F., Haldorson, G., Foreyt, W., Rurangirwaa, F., Knowles, D., Besser, T., Srikumaran, S. (2010). Mycoplasma ovipneumoniae can predispose bighorn sheep to fatal Mannheimia haemolytica pneumonia. Veterinary Microbiology, 145, 354–359.

[42] Wolfe, L. Diamond, B., Spraker, T., Sirochman, M., Walsh, D., Machin, C., Bade, D., Miller, M. (2010). A bighorn sheep die-off in southern Colorado involving a Pasteurellaceae strain that may have originated from syntopic cattle. Journal of Wildlife Diseases, 46(4), 1262-8.

sheep. The total area of potential habitat may not be used by sheep if livestock are present" (ibid.: 323).

There is literature on interference competition between bighorn sheep and cattle, social intolerance behavior (especially by ewes), competition for water sources (especially during drought years), carrying capacity of shared bighorn-cattle ranges, cattle straying farther into bighorn sheep ranges, and other bighorn-cattle interactions. This must also be analyzed.

Disease transmission from domestic sheep grazing is a significant threat to bighorn, and domestic cattle also have the potential to transmit disease bighorn sheep. The analysis should include detailed mapping of bighorn critical habitat, herd units, and movement with respect to allotment boundaries, roads, proposed new fences, water developments, and any salt supplements.

The Sierra Bighorn Sheep Recovery Plan (2007), Appendix B, at 105 states:

> The impacts of domestic cattle (*Bos taurus*) grazing within bighorn sheep habitat have not been well documented. Bighorn sheep may avoid areas where cattle are grazed and not return to those areas for long periods after cattle are removed (King and Workman 1984). The potential for cross species transmission of diseases between cattle and wild ungulates may vary with local environmental conditions. Bovine viral diarrhea causes a complex of respiratory diseases, gastrointestinal diseases, and reproductive failure and may be transmitted between species. Hemorrhagic disease and pneumonia resulting from bluetongue virus (BTV) infection have been reported in bighorn sheep (Robinson et al 1967, Noon et al 2002). Because of prolonged viremia, cattle may be an important reservoir of BTV for *Culicoides* vectors (Osburn 2000) and, thus, a potential source of infection for other wild and domestic ungulates in areas climatically suitable for *Culicoides*. Singer et al (1997) studied cattle, bighorn sheep and mule deer (*Odocoileus hemionus*) in an area where the three species were known to utilize common areas. Only cattle were seropositive to BTV but deer and bighorn sheep were seropositive to *Babesia* sp. and *Psoropte*s mites were found only on bighorn sheep. Singer et al. (1997) concluded that cattle, deer, and bighorn sheep did not share similar patterns of exposure to the three pathogens and, thereby, proposed that cattle did not constitute a health risk for bighorn sheep in that area. Foreyt (1994) reported no adverse effects on healthy bighorn sheep in one co-pasturing study with domestic cattle. In a follow-up study, however, one of five bighorn sheep co-pastured with cattle developed a fatal pneumonia and died on day 6 post introduction (Foreyt and Lagerquist 1996). Although cattle may carry *Pasteurella* spp. that are pathogenic to bighorn sheep, those authors hypothesized that "the nose to nose contact required for transmission of *P. haemolytica* (renamed *Mannheimia haemolytica*) is less likely to occur between bighorn sheep and cattle" than with domestic sheep because the social interactive behavior between bighorn sheep and cattle is less likely to result in nose to nose contact. They recommended that further studies be conducted to determine the compatibility of bighorn sheep and domestic cattle. Based on the limited information currently

> available, there is insufficient evidence to exclude cattle grazing in or near bighorn sheep habitat based on disease considerations. **However, if cattle grazing increases in proximity to bighorn sheep, disease considerations should be reconsidered**. (Emphasis ours)

We are concerned with the reintroduction of cattle grazing in proximity to bighorn sheep populations in the Toquima and Monitor Ranges. According to the Nevada Big Game Status Book,[43] the Toquima Range has a robust herd of desert bighorn sheep numbering over 450 animals. The herd that includes the Monitor Range is smaller, numbering about 175 in the last survey.

The Forest Service should require annual testing of any cattle before they are allowed in these allotments for these and other diseases that could potentially spread to bighorn. Vaccinations of cattle are apparently not viable, but this should be discussed in any environmental review. A No Livestock Alternative should also be explored.

Fisheries

What fish species, if any, can be found on the allotments? Can historic Lahontan cutthroat habitat be found here? What impacts will grazing have on stream habitat?

Pollinators

The Forest Service should consider the impacts to pollinators, which may be significantly, and negatively, impacted by commercial grazing of livestock.

Water Quality

The Forest Service must consider exclusion of grazing from all springs, seeps, wet meadows and other wetlands and buffers in all these allotments. These water resources and riparian areas provide a myriad of important values to both wildlife and people. Water resources are particularly attractive to cattle and suffer proportionally greater impacts from cattle grazing. Based on this, exclusion of grazing from all water resources including riparian areas, wet montane meadows, springs, and wetland buffer areas should be considered in each alternative in the NEPA documents for all of these allotments. Cattle accessing springs, creeks and riparian areas are known to impact water quality as well as the bed and banks leading to increased potential for erosion, headcutting, and streambank alterations leading the increased siltation and bacterial water pollution as well.

Microbial and nutrient pollution by livestock grazing on public lands degrades water quality, threatening human and ecological health. Some of the contaminants of concern include fecal indicator bacteria (FIB), fecal coliform (FC) and *Escherichia coli* (*E. coli*), as well as nitrogen (N) and phosphorus (P). FIB are regulated in an attempt to safeguard public health from waterborne pathogens such as *Cryptosporidium*

[43] Available at http://www.ndow.org/Education/Publications/Big_Game_Status_Book/

parvum and *E. coli* and human enteroviruses including adenoviruses and coliphages.

Cattle may preferentially use key grazing areas that are often relatively small, stream-associated meadows and riparian areas that are preferentially grazed by cattle due to high forage quantity and quality and drinking water availability. The Forest must provide baseline data on water quality and, if cattle grazing is permitted, require frequent monitoring to measure water quality in these areas, protect water quality, and prevent eutrophication of streams. *E. coli* are indicators of fecal contamination and therefore can provide accurate assessment of water quality conditions and human health risks. In addition, aquatic macroinvertebrate metrics must be sampled to provide baseline data and, if cattle grazing is permitted, to monitor stream water quality and watershed conditions.

Measures of water quality in all streams should be taken currently, and monitored in the future if cattle are permitted. These measures should include temperature, turbidity, nitrate, dissolved oxygen, and fecal coliform.

How does the proposed action ensure water quality and compliance with state and federal water quality standards? How does the proposed action incorporate Region 4 Best Management Practices?

Ungulates

On March 20, 1976 at the conclusion of the 41st annual North American Wildlife and Natural Resources Conference in Washington D.C., R.J. Smith of the US Fish and Wildlife Service noted[44]: "Livestock grazing is the single most important factor limiting wildlife populations in the West; it has been and continues to be administered without adequate consideration for wildlife, especially on federally owned lands." *Id at 177.*

The Monitor Range in particular is a well-known and highly productive elk range. Reintroducing livestock to these six allotments would be a travesty for elk and deer populations here. On a recent field visit (May 2021), WWP found evidence of healthy elk populations and taking historic drought conditions into account, an ecosystem in recovery. Ungulates play an important role in the local ecosystem, where livestock do not. The Forest Service should closely study a no grazing alternative to protect elk population on behalf of the ecosystem but also for hunters and recreationists who appreciate sharing wild places with native wildlife. To unduly harm these elk populations through the reintroduction of livestock grazing would be a disservice to the ecosystem and the public.

Elk and deer densities are known to decrease significantly when livestock are introduced to an area. Take for example the results of Kenneth Clegg's Master's Thesis[45] with Utah State

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[44] Smith, R.J. 1977. Conclusion. p. 117-118. In: R.J. smith (ed.), Proc. of a Seminar on Improving Fish and wildlife Benefits in Range Management. U. S. Department of Interior. Fish and Wildlife; Washington, D. C. FWSjOBS-77j1. vi+118pp.

[45] Clegg, Kenneth, "Density and Feeding Habits of Elk and Deer in Relation to Livestock Disturbance" (1994). All Graduate Theses and Dissertations. 969.
https://digitalcommons.usu.edu/etd/969

University where he studied the impacts of introducing livestock (cattle and sheep) in areas with established elk and mule deer populations. He summed up his results by stating: "Elk and deer densities declined by as much as 92% in response to introduction of livestock, while associated areas where livestock were absent did not show this response." *Id at 9.* Displacement (Stewart 2002)[46] and competition for forage due to dietary overlap (Campbell 1983)[47] are important factors to consider.

The Forest Service should closely review all of the literature available concerning livestock/wildlife conflicts. The report *The Effect of Cattle Grazing on Native Ungulates: The Good, the Bad, and the Ugly* By Natalia A. Chaikina and Kathreen E. Ruckstuhl (included in our submission of literature) is a good place to start.

What are the impacts to elk and deer from cattle grazing? Is there adequate forage for livestock given current ungulate densities?

Trespass Grazing

What are the impacts of unauthorized grazing use in these allotments, in addition to the grazing proposed?

Climate Change

The analysis should quantify the indirect impacts of increased grazing on climate change. Specifically, what would the impacts be from increased methane production from livestock grazing?[48] What are the impacts to carbon sequestration from disruption of soils and vegetation, and the forgone potential of native bunchgrass recovery?[49]

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[46] STEWART, K. M., R. T. BOWYER, J. G. KIE, N. J. CIMON, AND B. K. JOHNSON. 2002. Temporospatial distributions of elk, mule deer, and cattle: resource partitioning and competitive displace- ment. Journal of Mammalogy 83:229–244.

[47] CAMPBELL, E. G., AND R. L. JOHNSON. 1983. Food habits of mountain goats, mule deer, and cattle on Chopaka Mountain, Washington, 1977–1980. Journal of Range Management 36:488–491.

[48] Steinfeld, H., Gerber, P., Wassenaar, T., Castel, V., Rosales, M., de Haan, C. 2006. Livestock's long shadow Environmental issues and options. 390 pp. Food and Agriculture Organization of the United Nations. (Livestock contribute about 9 percent of total carbon dioxide emissions, but 37 percent of methane and 65 percent of nitrous oxide);
Debra L. Donahue, *Elephant in the Room: Livestock's Role in Climate and Environmental Change,* 17 Mich. St. J. Int'l L. 95, 98 (2008).

[49] *See e.g.* Beschta et al. 2012, *supra*; Dong Wang, Gao-Lin Wu, Yuan-Jun Zhu, Zhi-Hua Shi. 2014. Grazing exclusion effects on above- and below-ground C and N pools of typical grassland on the Loess Plateau (China). Catena 123 (2014). http://lab.yangling.cn/UploadFile/ea_201482785433.pdf.; Lei Deng, Zhinan Zhang, Zhouping Shangguan 2014. Long-term fencing effects on plant diversity and soil properties in China. Soil & Tillage Research 137 (2014) 7–15.; Wu Xing, Li Zongshan, Fu Bojie, Lu Fei, Wang Dongbo, Liu Huifeng, Liu Guohua 2014. Effect of Grazing Exclusion on Soil Carbon and Nitrogen Storage in Semi-arid Grassland in Inner Mongolia, China. Chin. Geogra. Sci. Bol 24 No. 4 pp. 479 –87.; Xing Wu, Zongshan Li, Bojie Fu, Wangming Zhou, Huifeng Liu, Guohua Liu. 2014. Restoration of ecosystem carbon and nitrogen storage and microbial biomass after grazing exclusion in semi-arid grasslands of Inner Mongolia. Ecological Engineering, Volume 73, Pages

The NEPA review must also analyze cumulative impacts. Specifically, the Forest Service in its cumulative impacts analysis "must give a sufficiently detailed catalogue of past, present, and future projects, and provide adequate analysis about how these projects, and differences between the projects, are thought to have impacted the environment." *Te-Moak Tribe of W. Shoshone of Nev. v. U.S. Dept. of Interior*, 608 F.3d 592, 603 (9th. Cir. 2010) quoting *Lands Council,* 395 F.3d at 1028. "Some quantified or detailed information is required. Without such information, neither the courts nor the public . . . can be assured that the [agency] provided the hard look it is required to provide." *Id*. quoting *Neighbors of Cuddy Mtn. v. U.S. Forest Serv.*, 137 F.3d 1372, 1379 (9th Cir. 1998). Cumulatively significant impacts here include:

- Livestock grazing. What are the cumulative impacts of permitted livestock grazing on other Forest Service allotments in these Ranger districts, and on BLM lands that are adjacent to the Monitor and Toquima Ranges? How many BLM allotments have been evaluated under the applicable Rangeland Health Standards and Guidelines pursuant to 43 C.F.R. § 4180? How many of the evaluated allotments were meeting standards and how many failed standards? For those that failed to meet standards, was livestock grazing a contributing factor? Mapping by PEER shows numerous allotments remain unassessed and of those analyzed, many failed due to livestock grazing.[50]

- Climate change, including quantified information on the impacts to climate change from greenhouse gas emissions and loss of carbon storage. *See Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1215 (9th Cir. 2008) (impact of greenhouse gas ("GHG") emissions on climate is precisely the kind of cumulative impacts that NEPA requires agencies to analyze); *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520 (8th Cir. 2003) (EIS was required to consider GHG emissions from project upgrading existing and new rail lines serving coal mines); *WildEarth Guardians v. Zinke*, 368 F. Supp. 3d 41 (D.D.C. 2019) (BLM violated NEPA by not adequately considering climate change when authorizing oil and gas leasing on federal land).

- Oil, natural gas, geothermal development, and mining in the region.

Recreation

The analysis should analyze an alternative designation recognizing the importance and significance of all of the use, facilities, and the importance of the area to the local economy. A Special Recreation Management Area designation, which manages for no livestock grazing, should be considered administratively. Management prescriptions that allow for primitive and dispersed recreation, with protection of its natural resources, and that keep these allotments closed to sheep and cattle, would have much support from the public. This could help balance

395-403.

[50] *See* https://mangomap.com/pdl/maps/24736/blm-rangeland-health-standards-evaluation-data-2012-?preview=true (last visited August 13, 2019).

multiple uses on this area.

Wilderness

The provision allowing grazing in the Wilderness Act is an exception to the general premise of the Act, which requires agencies to manage wilderness areas to preserve their wilderness character and natural conditions. The Wilderness Act is not a procedural statute, though the agency often behaves as though it is. It is a substantive law passed because all the federal land management agencies, and in particular the Forest Service, could not be trusted to ensure the preservation of wilderness lands in the United States. The language concerning livestock grazing in wilderness is a mere forty words long: "Within wilderness areas in the national forests designated by this Act...the grazing of livestock, where established prior to September 3, 1964, shall be permitted to continue subject to such reasonable regulations as are deemed necessary by the Secretary of Agriculture." Thus, grazing which existed in wilderness areas when the Wilderness Act was enacted may continue.

In other words, grazing is an exception to normal wilderness protections. It is a use that, by definition and practice, degrades Wilderness. Unlike what some in the agency may believe, the Wilderness Act does not grant special privileges to those that graze their cattle or sheep in Wilderness that are not available on other national forest system lands. The agency can, and should take action when grazing is affecting other values such as wildlife or watersheds. The fact the allotments have been vacant for so long is also significant. There is no question that grazing by domestic animals will degrade the Table Mountain and Alta-Toquima Wildernesses from what it is today.

In fact, these allotments have been vacant for far longer since the Table Mountain and Alta-Toquima Wildernesses were designated in 1989 than they have been used. The information in the PA suggests grazing may have only taken place for a short period of time.

It should be pointed out that the maps in the PA do not show the wilderness boundaries or the Mt. Jefferson RNA boundary within the Alta-Toquima Wilderness. It also doesn't show other nearby vacant allotments, which may give information on whether ranchers even wish to use vacant allotments in this area. This important information should not have been omitted.

The following points should have been considered in context of Wilderness:

- Will motorized transport or equipment be use to maintain or build structures in Wilderness? The PA talks about wooden fences being built but does not state how that might be accomplished.
- Restocking the four vacant allotments that contain wilderness acreage would be as if opening new grazing in Wilderness. These allotments have been vacant for over 20 years (Meadow Canyon, Table Mountain, Monitor Valley East, and Monitor Valley West). The urgency to do this, as expressed in the PA, is belied by the fact they have not been allocated for many years and that 40 other allotments on the Humboldt-Toiyabe National Forests are also vacant, including other wilderness allotments contiguous to

some of these. It would seem nobody is clamoring for these allotments. Further, the Toiyabe Forest Plan does not require stocking, as the PA may lead one to believe.

- The Meadow Canyon Allotment, is not meeting desired conditions. Therefore, it should not be allotted in order to meet the Forest Plan. This allotment is also adjacent to the Mt Jefferson RNA, which is off-limits to grazing. Stocking this allotment might invite livestock into the Mt. Jefferson RNA.

- The Monitor Valley East and Monitor Valley West Allotments would be used year-round by cattle. This would have additional impacts. Even with rotation, year-round grazing causes significant problems.

- Riparian areas, especially in the Table Mountain Allotment, could be negatively affected by grazing. Lahontan cutthroat are found in Mosquito Creek in the Table Mountain Wilderness. There is also a segment of Pine Creek in the Alta-Toquima Wilderness that contains this rare variety.

Need for an EIS

An environmental impact statement (EIS) must be undertaken where impacts from the proposed action have the potential to be significant. 42 U.S.C. § 4332(2)(C); 40 C.F.R. § 1508.3. The Council on Environmental Quality's (CEQ) regulations define "significance" in terms of "context" and "intensity." *Id.* § 1508.27. "Context" means the significance of the action must be analyzed in several contexts (national, regional, and local), and include short- and long-term effects within the setting of the proposed action. *Id.* § 1508.27(a). "Intensity" refers to the severity of the impact and requires consideration of a number of factors listed in CEQ's regulations.

For example, the potential for disease transmission to bighorn sheep from cattle is known as are the potentially devastating impacts of such disease transmission, this is a unique risk that must be adequately addressed in an EIS before any decision can be made. 40 C.F.R. § 1508.27(b)(5) (degree to which effects are highly uncertain or involve unique or unknown risks). In addition, there is a substantial dispute about the importance and effect of opening these lands to cattle grazing and the proposal is significant under this intensity factor as well. 40 C.F.R. § 1508.27(b)(4) (effects controversy).

The cumulative significance factor is also triggered here: "Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts." 40 C.F.R. § 1508.27(b)(7). The NEPA decision-making process is designed to address significant effects that could otherwise be masked by "the tyranny of small decisions." *See Kern v. Bureau of Land Mgmt*, 284 F.3d 1062, 1078 (9th Cir. 2002); *Pac. Coast Fed'n of Fishermen's Ass'ns v. Nat'l Marine Fisheries Serv.*, 265 F.3d 1028 (9th Cir. 2001).

Additionally, unique characteristics are present in the form of designated wilderness—the Table Mountain and Mount Jefferson wildernesses. There are also cumulatively significant impacts to several wildlife species, including sage-grouse. There are likely to be significant impacts to a number of other public resources as well. These include: pygmy rabbit, migratory birds, native plant species, wilderness, bighorn sheep, mule deer and elk, riparian areas (and other ecologically critical areas), water quality, air quality, climate impacts, scenery, and recreation. In sum, the Forest Service cannot rely on an EA to analyze the impacts of this action; it must complete an EIS.

Other issues

Forest Plan consistency

The Forest Service's proposed issuance of grazing permits must comply with all applicable laws, including NFMA, NEPA, the Clean Water Act, the Wilderness Act, and the ESA. 36 C.F.R. § 219.1(f).

Congress enacted the National Forest Management Act in 1976 to reform the Forest Service's management of the National Forest System, including by requiring greater recognition of wildlife in its multiple-use management, and to direct the agency to provide for greater public participation in forest management. NFMA directs the agency to "develop, maintain, and, as appropriate, revise land and resource management plans for units of the National Forest system." 16 U.S.C. 1604(a).

The Forest Service manages grazing through a permit system under the Federal Land Policy and Management Act of 1976, 43 U.S.C. §§ 1701–1784, and NFMA implementing regulations. 36 C.F.R. Part 222.The Forest Service divides each allotment into units. The agency may authorize (or not authorize) different levels of grazing on each allotment or pasture. It may also alter times of grazing and levels of use from one grazing season to the next. The Forest Service authorizes and manages livestock grazing on specified allotments by issuing (1) a grazing permit pursuant to 43 U.S.C. § 1752(a) and 36 C.F.R. § 222; (2) an Allotment Management Plan pursuant to 43 U.S.C. § 1752(d) and 36 C.F.R. § 222.1(b); and (3) AOIs.

Under NFMA, all site-specific decisions (such as grazing authorizations) must be consistent with the Forest Plan. 16 U.S.C. § 1604(i), 36 C.F.R. § 219.15. Additionally, each project or activity approval document must describe how the project or activity is consistent with applicable plan components. *Id*. § 219.15(d).

How does the proposal comply with the following forest plan goals, objectives, and standards?

- Overall net gain of wildlife species on the Forest
- The protection of threatened, endangered and sensitive species through habitat management

- Manage Forest habitats and activities to achieve recovery of threatened and endangered plant species and to ensure that sensitive plant species do not become threatened or endangered
- Increase quality of recreation experiences
- Existing and recommended wilderness will be protected for its wilderness character. Quality wilderness experiences provided for the public
- Greater emphasis on environmental quality will have had positive effect on the soil and water resources
- In all its activities the Forest will strive to manage productivity and resource values for current and future generations.
- Instream flows will protect riparian area dependent resources against incompatible water resource development
- Specific riparian area standards and guidelines, and greater emphasis on rangeland management will have significantly benefited riparian area dependent resources
- Improve or maintain the quality an quantity of terrestrial and riparian habitats. Livestock management will consider
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Management Indicator Species

The Forest Service should list and study impacts to all threatened, endangered, sensitive, and management indicator species that use or occupy the project area.

How does the proposed action affect management indicator species, and is it consistent with the Forest Service's obligation to these species?

Carrying Capacity, Capability, and Suitability

The Forest Service should base all of its decisions as to the level of allowable grazing on a robust and current carrying capacity analysis to ensure that it has not authorized more forage than can be grazed without unduly damaging public resources, as a quantified analysis often reveals.[51] This should follow a valid capability and suitability analysis. *See* 36 C.F.R. § 219.1(g), 219.20. The NEPA analysis needs to clearly explain the process of determining capable and suitable acres, and carrying capacity.

Under NFMA, the Forest Service must "determine . . . the availability of lands and their suitability for resource management." 16 U.S.C. § 1604(e). NFMA further provides that the forest planning regulations shall include: "specifying guidelines which[] require the identification of the suitability of lands for resource management." *Id*. § 1604(g)(2)(A). In turn, the planning rules provide that:

[51] *See, e.g.*, Carter, J. Vasquez, E. and Jones, A. 2020. Spacial Analysis of Livestock Grazing and Forest Service Management in the High Uintas Wilderness, Utah. Journal of Geographic Information System, 2020, 12, 45-69. Scientific Research Publishing.

> [T]he suitability and potential capability of National Forest System lands for producing forage for grazing animals . . . shall be determined as provided in [] this section. Lands so identified shall be managed in accordance with direction established in forest plans.
> (a) Lands suitable for grazing and browsing shall be identified and their condition and trend shall be determined. The present and potential supply of forage for livestock . . . shall be estimated. The use of forage by grazing and browsing animals will be estimated. Lands in less than satisfactory condition shall be identified and appropriate action planned for their restoration.
>
> [. . .]

36 C.F.R. 219.20. Capability is "the potential of an area of land to produce resources, supply goods and services, and allow resource uses under an assumed set of management practices and at a given level of management intensity." 36 CFR 219.3. It "depends upon *current resource conditions* and site conditions such as climate, slope, landform, soils, and geology, as well as the application of management practices, such as silviculture or protection from fire, insects, and disease." *Id*. (emphasis added).

As a starting point, the agency should determine the average forage production values for lands on the allotments based on ecological site, verified by actual forage measurements, with those areas producing less than 200 lbs/acre excluded, based on Forest Service Region 4 guidance. However, other factors that should be used to determine the capability and suitability of the allotment for livestock grazing, and ultimate stocking rate, include:

- Excluding private lands within the allotments (guidance refers to "national forest system lands");
- Forage allocated to wildlife and conservation;
- Areas incapable of being grazed (e.g. mines, roads, quarries, etc.);
- Areas unsuitable for grazing due to conflicts with other uses like habitat and recreation;
- Areas unsuitable for grazing due to highly erosive soils;
- Distance to currently available water (must be within 1 mile);
- Slope (maximum of 30% for cattle);
- Forage demand of livestock based on weight of animals;
- Sustainable utilization levels including trampling, use by rodents and insects;
- Required residual vegetation heights (such as for sage-grouse nesting, and LCT streams);
- Season of use, regular rest, deferment of grazing during critical growth periods;
- Weather, including drought;
- Use mapping and actual use.

When the Forest Service fails to adequately explain how it uses capability criteria to reach a determination on acres capable for livestock grazing, and declines to share the data it uses, or show allotment-by-allotment capability, it violates NFMA, as well as NEPA's "hard look" doctrine. *W. Watersheds Proj. v. U.S. Forest Serv.*, No. 05-cv-189-BLW, 2006 WL 292010, at *6–*7 (D. Idaho Feb.7, 2006); *see also* 40 C.F.R. § 1502.24 (agency must disclose

methodology). We look forward to a clear explanation in the analysis of how the Forest Service determined capability and suitability, and ultimately how it will determine carrying capacity.

Measurable use standards

The proposed action includes utilization standards, but they are too permissive to protect sensitive resources based on scientific literature. The NOPA also fails to include a standard for bank alteration, which is critical to protect riparian species, water quality, and watershed function.

WWP supports the inclusion of a standard for 6" riparian stubble height.[52] Requiring only 4" of residual vegetation is also very likely a decrease in protection from percentage utilization requirements under the existing regime, at a minimum for many sedge and rush species (which are common and desired native riparian species) in most management category classes.[53] For example, for Baltic rush and Nebraska sedge that would have been previously subject to a 35-45% utilization standard in most areas of the allotments at issue, those utilization rates would have resulted in a 9–15" residual stubble height. By the time 4" of residual stubble height is reached for many species, 70% utilization by weight will occur.

The upland utilization standards of 40-45% are too high to protect native species. Holechek, citing various other sources, denotes that a utilization rate of around 25-35% is needed "for high nesting success by sage-grouse"[54] as well as 35% generally for arid and semi arid areas; and Braun (2006)[55] recommends no more than 30% utilization in sage-grouse habitat.

Further, in order to incorporate the best available science, as described below, and comply with the 2015 Sage-grouse LRMP amendment, the permits need to incorporate a 7" upland residual perennial grass stubble height standard through June 15, as "should be applied" in sage-grouse breeding and nesting habitat per GRSG-LG-GL-035-Guideline, Table 3 in the 2015 Amended LRMP.[56] ROD at 82. Likewise, a 4" upland residual stubble height standard needs to be applied in the same habitat areas after nesting occurs, from June 16 to October 30. *Id*.

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[52] Clary and Webster (1989) Managing grazing of riparian areas in the Intermountain Region. General Technical Report. INT-263. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station, 11 p.

[53] Kinney J. and Clary, W. (1994). A photographic Utilization Guide for Key Riparian Graminoids. USDA, Forest Service. Intermountain Research Station. General Techical Report INT-GTR-308.; Cowley, E.R. (1999). Stubble Height Based on Height-Weight Curves for Nine Key Riparian Graminoids.

[54] Holechek, J. L., R. D. Pieper, C. H. Herbel. 2010. RANGE MANAGEMENT: PRINCIPLES AND PRACTICES. 6th ed. Prentice-Hall. Upper Saddle River, NJ.

[55] Braun, C. (2006). A Blueprint for Sage-grouse Conservation and Recovery. Grouse, Inc. Tucson, AZ. 42.pp.

[56] Available at https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3855559.pdf

The proposed action needs to incorporate a bank alteration standard of 10% for every permit. This is a crucial metric for riparian health, especially related to aquatic species.[57] How can the Forest Service ensure bank stability without a bank alteration standard?

The proposed 35% utilization rate for riparian woody vegetation is an increase for all allotments and pastures from the allowances under Amendment II, and significantly increases browse levels for many allotments that have previously been subject to a 20% riparian browse standard. *See* Martin Basin FEIS at 20–21. While 30-35% use may be an acceptable level of use for riparian areas in excellent condition, that is not the case for all of the allotments and pastures in the Martin Basin, and probably the other allotments outside the Martin Basin as well, and will contribute to the stagnation of riparian ecological condition at nonfunctional or functioning at risk in those areas.

Clean Water Act

In the EIS, please detail how the proposed action complies with the Clean Water Act through its incorporation of State of Nevada and USFS Region 4 best management practices (BMPs).

[57] Bridger-Teton NF whitepaper (attached); Goss, L.M. and Roper, B.B. 2018. The Relationship Between Measures of Annual Livestock Disturbance in Western Riparian Areas and Stream Conditions Important to Trout, Salmon, and Char. Western North American Naturalist, 78(1):76-91. http://www.bioone.org/doi/full/10.3398/064.078.0108

Sincerely,

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