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Working to protect and restore Western Watersheds and Wildlife

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USDA Forest Service
Rocky Mountain Region
Attn: Objection Reviewing Officer
P.O. Box 18980
Golden, CO 80402

Objection of WWP to the 2020 Thunder Basin National Grassland Plan Amendment

Dear Objection Reviewing Officer:

The following is the Objection of Western Watersheds Project (WWP) to the 2020 Thunder Basin National Grassland (TBNG) Plan Amendment. Only 43.7% of the Great Plains still consists of grasslands and shrublands, according to a study authored by a Forest Service research scientist. Attachment 1. The Thunder Basin National Grassland is one of the largest remaining federally-owned expanses of Great Plains native habitat. It is home to a prairie dog population that at times has been sufficiently large to support a population of 100 black-footed ferrets, an important threshold to maximally contribute toward the recovery of the black-footed ferret. Yet Forest Service mismanagement of this critically important public wildlife resource (in the form of expanding poisoning and recreational prairie dog shooting, and denying permits for conservation groups to dust colonies for plague-carrying fleas as they had previously, for several years) has resulted in a recent catastrophic decline in occupied prairie dog colonies, and a concomitant decline in a variety of prairie dog-dependent wildlife species, many of which may themselves warrant Endangered Species Act protection.

This Plan Amendment, which would increase prairie dog poisoning, strip away restrictions protecting prairie dogs from recreational shooting, eliminate the agency's prairie dog conservation strategy, and delete an area designated for black-footed ferret reintroduction and recovery, has been from the very beginning been a premeditated attack on healthy ecosystems on the Thunder Basin National Grassland, and in particular on the rare black-tailed prairie dog, the keystone species for ecological health on the Great Plains, as well as on the myriad rare and sensitive species (including the endangered black-footed ferret) dependent on it. According to the Forest Service,

Consequently, on April 17, 2013 the State of Wyoming Governor's Office provided the USFS with a proposal to rework the BTPD Strategy with requests to alleviate prairie dog control restrictions in designated BTPD management areas. These requests include expanding rodenticide options

and use as well as allowing shooting and poisoning to create a ¼ mile buffer around all state and private lands within the BTPD management areas. Given the viability analysis provided by this document, the USFS believes that the State's proposal would further reduce prairie dog habitat on TBNG resulting in the inability to sustain long-term viability for any of the associated species analyzed and would preclude the opportunity to implement black-footed ferret reintroductions.

Attachment 3 at 1. In its Species Viability Analysis, the Forest Service characterized the state proposal as follows:

In a letter dated April 17, 2013, The State of Wyoming Governor's Office requested that the USFS amend the 2009 Prairie Dog Strategy (Mead 2013). The letter claims that the Category 1 and 2 areas (described below) are too restrictive and requests the following:

- Establish a ¼ mile buffer to all private and state land to control prairie dogs
- All management tools should be available for use within the buffer
- Control should not be contingent on trigger or management tool
- Poisoning seasons should be extended
- Poisons should be expanded

Id. at 13. This state proposal, which has now been transformed into the Draft Record of Decision (DROD), violates practically every tenet of the National Forest Management Act (NFMA), the National Environmental Policy Act (NEPA), the Multiple Use Sustained Yield Act, and agency Sensitive Species and Endangered Species regulation and direction. It is frankly quite surprising that the Forest Service would attempt to trot out such a tangled mess of illegalities. Our particular objections and proposed remedies follow, but we would like to open by stating that there is no baby in this bathwater, and the Forest Service should simply throw it out, and go back to managing the TBNG for multiple use, rather than as an ecologically devastated private grazing paddock for the benefit of a handful of commercial livestock producers.

Under the Multiple Use Sustained Yield Act (MUSYA), the Forest Service has an affirmative duty to manage National Grasslands for multiple use, which is not limited to extractive, profit-driven uses like livestock grazing and mineral development but also explicitly includes wildlife, watersheds, public recreation, and wilderness. Secretarial Memoranda and other policy direction that seeks to elevate extractive uses to the detriment of multiple uses related to the responsible stewardship of lands, waters, and wildlife are legally invalid to the extent that they violate MUSYA, NFMA, and other congressional mandates for the management of public lands.

1. The Plan Amendment fails to adequately protect Region 2 Sensitive Species

WWP extensively raised the issue of failure to provide adequate protections for Region 2 (R2) Sensitive Species in our Draft Environmental Impact Statement (DEIS) comments (at 30-31). The black-tailed prairie dog is designated as a Region 2 Sensitive Species. Attachment

2. Under the agency's Sensitive Species direction, the Forest Service must develop and implement management practices to ensure that species do not become threatened or endangered because of Forest Service actions, and maintain viable populations of all native and desired nonnative wildlife, fish, and plant species in habitats distributed throughout their geographic range on National Forest System lands. FSM 2670.22. The Forest Service must avoid or minimize impacts to species whose viability has been identified as a concern. In addition, if impacts are authorized, the decision must not result in loss of species viability or create significant trends toward federal listing. FSM 2670.32. Regional Foresters are directed to approve closures of National Forest System lands as necessary to protect habitats or populations of threatened, endangered, proposed, **or sensitive species**. FSM 2670.44, emphasis added, *and see* 36 C.F.R 261.70. Forest Supervisors must develop quantifiable objectives for managing populations and/or habitat for sensitive species. FSM 2670.45. Furthermore,

Sensitive species of native plant and animal species must receive special management emphasis to ensure their viability and to preclude trends toward endangerment that would result in the need for Federal listing.

There must be no impacts to sensitive species without an analysis of the significance of adverse effects on the populations, its habitat, and on the viability of the species as a whole. It is essential to establish population viability objectives when making decisions that would significantly reduce sensitive species numbers.”

FSM 2672.1.

According to the Forest Service, “Livestock grazing, and large-scale control and eradication efforts for prairie dogs have historically reduced the availability of habitat with suitable vegetation height and burrow density for Burrowing Owls.” Attachment 3 at 18. This is backed up by primary science showing burrowing owl population success tied to active prairie dog colonies, and major burrowing owl declines following prairie dog reductions. Attachment 4. The Forest Service acknowledged that 500 breeding adult burrowing owls are needed for long-term population viability. *Id.* at 19. The agency noted that the current conditions as of 2013, under the 2009 amendment, were inadequate:

When applying the 50/500 viability rule to these figures, 1,327 acres of active BTPD colonies are required to support 50 Burrowing Owls (53.1 acres x 25 pairs) to achieve short-term viability and 13,275 acres are required to support 500 individuals (53.1 x 250 pairs) for long-term viability. Although the TBNG has >16,000 total acres of active BTPD habitat and appears to meet the acreage requirement for both short- and long-term viability requirements for Burrowing Owl, these acres are largely fragmented. Only four of the 150 active colonies on the TBNG meet the 1,000 acre minimum area needed to support multi-species needs (VanPelt 1999). In 2012, 71% of the Burrowing Owl occurrences were found within BTPD colonies that were over 1,000 acres. As such, it seems that the current fragmentation of active BTPD

habitat on the TBNG may be preventing adequate populations of Burrowing Owls from being established on the unit.

Id. at 19.

The Management Area (MA) 3.63 designation on TBNG was at one time ranked as the #3 reintroduction potential site in the nation. Attachment 5 at unnumbered 38, *and see* unnumbered 91 (citing a USFWS document ranking TBNG as one of the top two reintroduction sites). The about-face is encapsulated by emails from the Forest Supervisor Dennis Jaeger and Peter MacDonald, Region 2 Threatened, Endangered, and Sensitive Species Program Leader. In response to being informed that Wyoming Game and Fish Department did not support ferret reintroduction on the Thunder Basin (*and see* Attachment 5), and that the USFWS had agreed to make reintroductions contingent on governor approval (in clear contravention of law), MacDonald characterized the situation thusly:

Dennis if that is the case, it obviously has nothing to do with the biological and recovery potential, which is very high right now. It's also extremely hard to rationalize and justify within the needs of the national recovery program for the black-footed ferret, a critter that has been federally endangered for far too long, literally since 1966. It has also driven our ESA compliance activities, regionally for a similar number of years, so a considerable taxpayer and agency investment that continues for the ferret while it remains on the ESA list. As you are undoubtedly well aware, there has also been considerable investment and commitment by the agency, region, forest, and district to the planning and preparing for ferrets in the 3.63 management area at Thunder basin for a couple decades. Past Regional Foresters have also stressed the importance of the R2 units contributing more to national recovery of the black-footed ferret. It is very important that the conversation continue. While the latest positions in Wyoming are admittedly challenging, the conversation needs to continue about the Thunder Basin's role in "national" recovery of the ferret and how to work cooperatively with the principals and public to achieve it.

Attachment 5. Supervisor Jaeger tacitly acknowledged that the Forest Service has the legal authority to move forward with ferret reintroduction on TBNG without state approval, but termed such a course of action "counterproductive, and yield increased hostility towards our field personnel in the Douglas District. The safety of our staff is our highest value." Attachment 5 at unnumbered 43. Thus, the Forest Supervisor directed personnel under his supervision NOT to do their jobs, NOT to adhere to Forest Service legal mandates, and NOT to manage the Thunder Basin National Grassland to advance the strong, national public interest in black-footed ferret recovery, out of fear of being bullied by the state and/or local grazing permittees. A retired Forest Service ferret specialist specifically informed the Forest Service that they were fully authorized to pursue ferret reintroduction on the TBNG without state participation. Attachment 5 at unnumbered 88. A legal analysis prepared for the Forest Service also concludes that federal agencies have broad authority over wildlife on their lands. Attachment 51. Federal law and regulation do not permit loopholes for cowardice.

Requested Remedy: The Forest Service must undertake a Supplemental EIS, adding protective measures for the R2 Sensitive Species, and the black-tailed prairie dogs on which they depend, that conserve and restore their populations to a secure status, and ensure that these measures are incorporated into the ROD.

2. Failure to maintain ecosystem health

WWP raised the issue of needing to maintain ecosystem health through the plan amendment in our DEIS comments (at 2, 3, 27). WWP objects to the Forest Service's decision to further contribute to the destruction and degradation of ecosystem health on the TBNG by authorizing the destruction of prairie dogs via poisoning and shooting, concomitantly reducing the acreage of active black-tailed prairie dogs, and potentially driving the extirpation of prairie dogs across significant acreages of the TBNG. WWP raised the key role of prairie dogs as ecosystem regulators in scoping (at unnumbered 2 and 3) and at the DEIS stage (at unnumbered 1-2).

Under the 2012 planning regulations,

The plan must include plan components, including standards or guidelines, to maintain or restore the ecological integrity of terrestrial and aquatic ecosystems and watersheds in the plan area, including plan components to maintain or restore structure, function, composition, and connectivity, taking into account: (i) Interdependence of terrestrial and aquatic ecosystems in the plan area. (ii) Contributions of the plan area to ecological conditions within the broader landscape influenced by the plan area. (iii) Conditions in the broader landscape that may influence the sustainability of resources and ecosystems within the plan area. (iv) System drivers, including dominant ecological processes, disturbance regimes, and stressors, such as natural succession, wildland fire, invasive species, and climate change; and the ability of terrestrial and aquatic ecosystems on the plan area to adapt to change. (v) Wildland fire and opportunities to restore fire adapted ecosystems. (vi) Opportunities for landscape scale restoration. (emphasis added)

36 CFR 219.8(a), emphasis added. Under these ecosystem integrity requirements, the agency would be required to allow for the natural expansion of prairie dog colonies, without imposing artificial mortality factors like poisoning or shooting, throughout the TBNG, but particularly in the current MA 3.63. By scrapping or reducing the protections in the 2002, 2009, and 2015 planning actions and conservation assessment, and by eliminating or reducing protections for the keystone black-tailed prairie dog and associated species as noted throughout this objection and previous WWP comments, the agency arbitrarily and capriciously undermines the ecological integrity of the grassland ecosystem by attacking its keystone species, the black-tailed prairie dog.

Requested Remedy: The agency must undertake a Supplemental EIS to put in place standards, guidelines, and objectives that maintain ecological integrity on the TBNG, including but not limited to maintaining viable populations of the keystone species black-

tailed prairie dog throughout the National Grassland, and ensure that these measures are incorporated into the ROD.

3. The Plan Amendment fails to maintain viable populations of native wildlife

WWP objects to the Forest Service's failure to maintain viable populations of native wildlife per NFMA requirements in the context of this plan amendment. WWP raised this issue at scoping (at unnumbered 1), and exhaustively in DEIS comments as noted below. As of 2019, the Northern Great Plains Assessment's "Broad-scale Look at Species Viability on the Northern Great Plains" was considered "a nice overview of the history and ecology" of lands including TBNG, even though "it's been around a while." Attachment 5 at unnumbered 218. In order to fulfill multiple use, sensitive species, and species viability requirements, the agency must provide for sufficient habitat to maintain viable populations of native wildlife. For the numerous Region 2 (R2) Sensitive Species on the TBNG that are known to be dependent on prairie dogs, that habitat requirement means acreage of actively populated prairie dog towns.

Forest Plans must "[p]rovide for a diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple use objectives of a land management plan..." 16 U.S.C. § 1604(g)(93)(b). According to Roemer and Forrest (1996), prairie dog poisoning on National Grasslands is shrinking and fragmenting prairie dog populations and harming populations of prairie dog obligate species, resulting in "the disintegration of the prairie dog ecosystem." Attachment 6. According to the 1982 NFMA regulations, which are applied in this amendment in the context of Sensitive Species viability issues, "Fish and wildlife habitat shall be managed to maintain viable populations of existing native and desired nonnative vertebrate species in the planning area." 36 C.F.R. § 219.19. Furthermore, "In order to insure that viable populations will be maintained, habitat must be provided to support, at least, a minimum number of reproductive individuals, and that habitat must be well distributed so that those individuals can interact with others in the planning area."

WWP specifically raised the issue that there must be no net loss in protected acreage for prairie dogs (scoping comments at unnumbered 10). The Preferred Alternative limits occupied prairie dog acreage to 10,000 acres in MA 3.67 by imposing "prairie dog control tools" to reduce prairie dog acreage once that acreage exceeds the 10,000 acre threshold. FEIS at 46. At the same time, general use of "control tools" (i.e., poisoning) would not occur when occupied acreage drops below 7,500 acres, but with a major loophole: Poisoning could still be used for "boundary control" or "density control" even after occupied acreage drops below 7,500 acres. Importantly, WWP raised concerns about density control and boundary control in our DEIS comments (at 9). Thus, the Forest Service would continue to authorize the killing of prairie dogs declining from other causes (e.g., shooting, plague outbreaks) even below 7,500 acres of occupied prairie dog colonies. In addition, the Forest Service is adopting a program that authorizes density control (DROD at 79), which has no scientifically valid basis ("Little is known about how different methods of density control affect prairie dog biology and vegetation response, with outcomes potentially being quite variable," DROD at 79) and essentially involves the killing of a Sensitive Species to provide more grass for a non-native, invasive species (cattle). This has no basis in law or regulation,

and is arbitrary and capricious. All of this puts the viability of prairie dogs at risk, and also fails to meet the viability requirements for a number of sensitive species dependent on prairie dogs, including but not limited to mountain plovers, burrowing owls, ferruginous hawks, swift foxes, golden eagles, and ultimately black-footed ferrets.

There is no legal basis for the Forest Service to authorize the killing of native wildlife, let alone a Sensitive Species that is the keystone to the survival of multiple other Sensitive Species, to satisfy the preferences of any adjacent landowner. Wildlife is a public trust resource in Wyoming, and is not legally restricted from moving across property boundaries. National Forest and Grassland units were never intended to be ecological islands separated from the surrounding state or private lands by “dead zones” where native wildlife would be exterminated. The agency has no legal right or authorization to kill native wildlife to promote commercial activities, either on the Grassland or on neighboring property (where, indeed, the Forest Service has no jurisdiction whatsoever).

Failure to meet viability thresholds for black-tailed prairie dogs

WWP raised concerns about the need to maintain viable prairie dog populations throughout our scoping and DEIS comments (e.g., DEIS at 5, 10-11). According to the Forest Service,

Although the species itself is not in immediate danger of extinction, the unique ecosystem they create is jeopardized by continuing fragmentation, isolation, and species persecution. Prairie dogs are considered a keystone species because the habitat they create cannot be duplicated by another species and is required, either directly or indirectly, by other wildlife. For these reasons, there continues to be widespread concern for the viability of species associated with BTPDs in Wyoming and on Thunder Basin National Grassland (TBNG).

Attachment 3 at 1. The Preferred Alternative in the FEIS is indistinguishable from the requests contained in the state’s proposal.

The plan amendment in question significantly expands prairie dog poisoning, and allows prairie dog shooting across more than 40,000 acres where shooting had been prohibited in the past in order to foster conditions conducive to black-footed ferret reintroduction. In addition, the plan amendment removes the opportunity to apply shooting closures where other wildlife are threatened, or where prairie dog population recovery is being hindered. DROD at 39. It also eliminates objectives for expanding prairie dog colonies and improving complexes to assist ferret reintroduction and related wildlife species. DROD at 44-45, 49-50. Finally, it cuts the USFWS out of rodenticide decisions and eliminates current provisions to relocate prairie dogs to establish new colonies in desirable areas. DROD at 67.

Under Departmental Regulation 9500-4, the Forest Service must manage “habitats for all existing native and desired nonnative plants, fish, and wildlife species in order to maintain at least viable populations of such species” and conduct activities and programs “to assist in the identification and recovery of threatened and endangered plant and animal species.” This plan amendment fails that mandate. A “viable population” is defined under the FSM as “[a] population that has the estimated numbers and distribution of reproductive individuals to

ensure the continued existence of the species throughout its existing range (or range required to meet recovery for listed species) within the planning area.”

The plan amendment fails to apply protections adequate to prevent extirpation of black-tailed prairie dogs on the TBNG. According to USFWS (2013: 51, internal citations omitted), “Poisoning, if thorough enough, may result in permanent loss of prairie dogs, such as occurred in the extirpation of black-tailed prairie dogs in Arizona.” According to published science, eradication programs undertaken at the behest of agricultural interests have been a main factor in causing sharp declines of prairie dogs. Attachment 7. According to a 2017 analysis from Forest Service official Shane Walker, there is “[n]o guarantee that plague will not kill 100% of the prairie dog colonies in conjunction with recreational shooting and poisoning.” Attachment 8. Indeed, Forest Service reports show a “within colony mortality rate of >99% on black-tailed prairie dogs.” Attachment 9. Already, under current management, the agency was perilously close (at only 625 occupied colony acres) to “managing” the Thunder Basin prairie dog population to extirpation.

On the other hand, prairie dogs have the capacity for rapid rebound following plague events, as demonstrated on the TBNG in 2004 and 2005. Attachment 9, Attachment 10. Thus, it remains important for the plan amendment to set conservation protections in place that foster a rebound, then prevent future population crashes to maintain the population and occupied acreage of prairie dog towns above the minimum thresholds requires for the viability of black-footed ferrets, burrowing owls, mountain plovers, and other species dependent on them for survival.

Dusting of prairie dog colonies with Deltamethryn to suppress plague-carrying fleas, and nonlethal translocations of prairie dogs, had been actively pursued by the Forest Service on the TBNG prior to 2017. See Attachment 11, Attachment 12, Attachment 13. In 2017, Regional Forester Ferebee reversed course and canceled plague dusting without any NEPA analysis. Attachment 14. This action, together with a lifting of the shooting ban by the Regional Office, raised concerns from Forest Service staff that the Grassland managers were cut out of the decision and laws were being violated. Attachment 5. The dusting for fleas on prairie dog towns need to be an integral part of Grassland planning. The present Preferred Alternative and DROD allow for this on a discretionary basis, but do not require it. Dusting for plague will need to be required as a nondiscretionary standard in the plan amendment in order to maintain viability of all native species noted in these comments.

Forest Service meeting notes contain the following reference to the planned deletion of the black-tailed prairie dog conservation strategy:

Elimination of conservation strategy. Many from conservation community and agency personnel likely feel that they have not had enough opportunity to implement strategy. Could be controversial.

Attachment 15. The elimination of this conservation strategy, as well as adoption of other state Department of Agriculture demands, is detailed in Attachment 16. This decision runs contrary to FSM 2620, which states in relevant part, “To preclude trends toward endangerment that would result in the need for Federal listing, units must develop conservation strategies for those sensitive species whose continued existence may be negatively affected by the forest plan or a proposed project.” This renders the decision to

eliminate the Black-Tailed Prairie Dog Conservation Strategy arbitrary and capricious and an abuse of discretion.

Failure to meet viability thresholds for mountain plovers, burrowing owls, and other prairie dog associated species

WWP objects to the Forest Service's failure to adequately provide for the conservation and restoration of prairie dog obligate wildlife. WWP raised concerns about the need to maximize prairie dog acreage to maintain viable populations of mountain plover, swift fox, burrowing owl, ferruginous hawk, and golden eagle in scoping comments (at unnumbered 2). WWP specifically raised concerns about plover viability (scoping comments at unnumbered 3; DEIS comments at 3-4), viability of birds of prey (scoping comments at unnumbered 3-4; DEIS comments at 4-5), burrowing owls (scoping comments at unnumbered 4; DEIS comments at 5), and swift foxes (scoping comments at unnumbered 4-5; DEIS comments at 5-6). The Forest Service not only sets inappropriately low acreage caps for active prairie dogs towns in the Preferred Alternative, but also eliminates a 'no net loss' guideline for mountain plover habitat in the plan amendment. DROD at 37. In addition, limitations on prairie dog shooting within ¼ mile of known active nests are removed, and requirements that vegetation projects maintain plover habitat, in the plan amendment. DROD at 38. For burrowing owls, direction to manage for prairie dog colonies of greater than 80 acres is substantially weakened in the DROD. *Id.* And the agency eliminates the prohibition on burrow fumigants, which had been in place "[t]o reduce risk to other wildlife" including burrowing owls DROD at 40.

For each of these prairie-dog associated species, the Forest Service concludes an identical determination for all alternatives, that Forest Service actions "May adversely impact individuals but not likely to result in a loss of viability in the planning area, nor cause a trend toward Federal listing; No substantial adverse impacts or substantially lessened protections as a result of the plan amendment." FEIS at 125-127. How convenient! The Forest Service believes that none of the differences in plan amendment alternative management would have any different effect on any sensitive wildlife species than any other alternative, and that none of the effects would have a significant effect on species viability, for any species (even black-tailed prairie dogs, slated for increased poisoning and shooting). The difficulty is that the Forest Service fails to provide the requisite analysis to back up these conclusory statements.

Mountain plover and burrowing owl are Region 2 Sensitive Species that are dependent on prairie dogs to meet their habitat requirements. *See* Attachment 3 at 3. Both burrowing owls and mountain plover population numbers are known to track active colony acres. *See* 2017 population graph compiled by TBNG staff member Cristi Painter, Attachment 5. Mountain plovers are 10 times more dense on active prairie dog colonies, and their populations are significantly affected by plague outbreaks that decimate prairie dog colonies (Augustine et al. 2008, Attachment 17). On the TBNG, in studies co-authored by the Forest Service's primary plover research biologist, mountain plover nesting was found to be limited to active prairie dog colonies. Attachments 18, 19, 20 (Duchardt et al. 2018, 2019, 2020). According to the Forest Service, "Because Mountain Plovers select active prairie dog colonies for nesting, the continued loss of prairie dogs due to poisoning, disease, and/or recreational shooting are viewed as direct threats to Mountain Plover populations." Attachment 3 at 17, and see

Attachment 21. The agency's analysis pointed out plover viability issues that existed under the 2009 amendment:

They estimated that for Mountain Plover, 2.4 birds/km² (0.0097 birds/acre) on colony sites in Wyoming and Montana were needed for viable populations. Extrapolating that density, they estimated that a BTPD complex may need 5,145-20,582 acres to support 100 Mountain Plovers (Augustine and Baker 2013).

Based on the TBNG Mountain Plover monitoring data (Figure 6), it appears that Mountain Plovers have been experiencing a long-term downward trend on the TBNG with very low numbers in 2012 (>0.002 plovers per acre surveyed). Given the specific viability density threshold of Mountain Plover provided by Augustine and Baker (2013) of 0.0097 birds per acre, the TBNG does not currently provide for even 20% of a viable Mountain Plover population. The TBNG is well below 100 birds across the 16,640 acres of active BTPD colonies that currently exist on the TBNG and may need closer to 20,583 active acres of prairie dogs to meet viability needs. Given that 72% of all Mountain Plover occurrences on the TBNG are within the Category 1 area (MA 3.63, ferret reintroduction area) and that 50% of those occurrences are on colonies that are 1,000 acres or larger, habitat fragmentation may be a significant contributing factor to low plover populations on the TBNG.

Attachment 3 at 18. This analysis is confirmed by agency communications with plover expert David Augustine, who stated that 20,897 acres of active prairie dog colonies are needed to maintain a plover population with long-term viability, and for Thunder Basin National Grassland, "They currently do not have enough mountain plovers to support a long term minimum population." Attachment 22. The agency's conclusion for mountain plover was that "when considering the State's proposal in a viability analysis, the probable determination is 'likely to result in a loss of viability in the planning area.'" *Id.*

Mountain plover are more numerous on active prairie dog towns. Attachment 23. Augustine (2011) found mountain plovers on burned rangelands or active prairie dog towns, but not on grazed rangelands lacking both burns and prairie dog colonies. Attachment 24 at 29. A further study by Augustine and Skagen (2014) determined that plover nest success was higher on prairie dog colonies than it was on burned grassland sites. Attachment 25. Brood survival also is higher for plovers nesting on active prairie dog colonies. Attachment 26. Forest Service research biologist David Augustine subsequently estimated that the acreage of active prairie dog towns required to meet the 500-bird minimum viable population at 17,643 acres. Attachment 27. Augustine also noted "dramatically high survival rates for broods raised on prairie dog colonies as compared to other habitats." *Id.* This science clearly establishes the link between plover viability and black-tailed prairie dog occupied acreage.

The Forest Service compiled a reference guide that summarizes the scientific literature, finding that zinc phosphide poses lethal risks to non-target species. Attachment 28. Mountain plovers and burrowing owls are such non-target species at high risk for being affected, as are the birds of prey that eat dead and dying prairie dogs. Both mountain plovers

and burrowing owls are known to decline on the TBNG as a result of past plague outbreaks. Attachment 29. The direct and cumulative effects of increased poisoning and shooting of prairie dogs (which include the poisoning and shooting of nontarget species in the process), as well as the indirect effect of managing prairie dog populations at thresholds too low to support the long-term viability of mountain plover and burrowing owl populations, renders this plan amendment in violation of NFMA's viability requirements.

Requested Remedy: The Forest Service must undertake a Supplemental EIS with a new and scientifically valid viability assessment for each of the species listed above, for each alternative, such that the agency can make an informed choice among alternatives and satisfy the substantive obligation to maintain viable populations of R2 Sensitive Species throughout the planning area, and ensure that these measures are incorporated into the ROD. Maintain at least 20,897 acres of active prairie dog towns to assure long-term mountain plover viability and at least 13,275 acres to maintain long-term burrowing owl viability, and restore the 'no net loss' guideline for mountain plovers, in the ROD. Restore prohibitions of burrow fumigants in the ROD. Delete all measures that harm black-tailed prairie dogs and potentially harm R2 Sensitive Species.

4. The Plan Amendment fails to manage TBNG lands to meet recovery objectives for black-footed ferrets

WWP raised specific concerns about the need to promote black-footed ferret recovery on the TBNG and the Forest Service's obligation to do so in scoping comments (at unnumbered 4-5) and at the DEIS stage (at unnumbered 1-2, 5-8, 10). WWP further specifically raised issues with delegating any part of the Forest Service's authority to manage prairie dogs, habitats, or ferret reintroduction to the State of Wyoming as inappropriate (scoping at unnumbered 10-11). WWP specifically raised concerns regarding the number and acreage of prairie dogs for ferret reintroduction (scoping at unnumbered 11). The Preferred Alternative would provide sufficient occupied prairie dog colony acreage to support only 30 breeding black-footed ferrets, versus 100 ferrets in the No Action alternative. FEIS at *v*. The plan amendment as presently written very clearly does not "support and enhance" black-footed ferret recovery on the TBNG, but instead places further roadblocks in the way of ferret reintroduction (which, of course is a prerequisite for recovering the species).

Under the National Forest Management Act (16 U.S.C. §§ 1600-1614), the Forest Service must strive to provide for a diversity of plant and animal communities when managing national forest lands. Under Section 7(a)(1) of the ESA, the Forest Service is required to use its authority in furtherance of the purposes of ESA by carrying out programs for the conservation of listed species such as the black-footed ferret. Under USDA Regulation 9500-4, the agency must "Evaluate and conserve habitats necessary for the conservation of threatened and endangered species." In addition, "The Forest Service must manage habitats at levels that accomplish the recovery of Federally listed species so that protective measures under the Act are no longer necessary." FSM 2672.21, and see 36 C.F.R. § 219.9(b)(1). According to the Black-footed Ferret Recovery Plan (USFWS 2013: 46), "most prairie dog populations are no longer large and stable enough (due to plague, poisoning, recreational shooting, and the lack of proactive management) to support recovery of the ferret, and the existing regulatory mechanisms are inadequate to support the large prairie dog populations

that ferrets require.” See Attachment 30. The prairie dog population is unfortunately in this position, due to the inadequacy of current prairie dog protections, which are substantially stronger than those proposed in the plan amendment. The plan amendment violates NFMA for failing to live up to these legal obligations.

The deletion of MA 3.63 (the black-footed ferret recovery area) and its replacement with a management area dedicated to vegetation management and livestock forage production was a proposal advanced by the Wyoming Department of Agriculture. Attachment 31. The Forest Service decided to adopt this recommendation in full. Attachment 32. This delegation of Forest Service authority to a state body that lacks federal regulatory and legal requirements to restore ferrets constitutes a separate violation of NFMA and the ESA.

The Endangered Species Act specifies that all federal agencies “shall seek to conserve endangered species and threatened species” and that the Secretary of Agriculture shall “establish and implement a program to conserve fish, wildlife, and plants,” including federally listed species. 16 U.S.C. §§ 1531(c) and 1534(a). By undermining the reintroduction of black-footed ferrets by eliminating the MA 3.63 Black-Footed Ferret Recovery Area and by increasing the poisoning and shooting of prairie dogs within that area (thereby making it less suitable for future ferret reintroduction), and by setting caps on prairie dog colony acreage that fall below minima needed to sustain viable ferret populations, the Forest Service is effectively creating habitat conditions that preclude successful ferret reintroduction in the future. This violates Sections 2 and 5 of the Endangered Species Act, as well as Forest Service Manual direction with regard to endangered species conservation and recovery.

According to USFWS (2013: 47), recreational shooting has been shown to restrict prairie dog densities and impair ferret reproductive success at existing sites, and “recreational shooting may prevent the development of future sites.” Thus, “we consider existing regulatory mechanisms inadequate for ferrets because they do not conserve stable, relatively large prairie dog populations. Without large, stable prairie dog complexes, ferret recovery in the wild cannot be achieved.” *Id.* The plan amendment expands this threat on the TBNG. According to USFWS (2013:52), “We consider the poisoning of prairie dogs with zinc phosphide at black-footed ferret recovery sites a high magnitude, imminent threat to ferret recovery at the present time due to the loss of habitat.” The plan amendment expands this threat on the TBNG.

The USFWS (2013: 48) references the Wyoming prairie dog conservation plan as being “adequate.” However, the TBNG plan amendment fails to implement this plan.

The Forest Service must place top priority on conservation and recovery of endangered, threatened, and proposed species and their habitats through relevant National Forest System, State and Private Forestry, and Research and Development activities and programs. FSM 2670.31. Furthermore, the Forest Service must manage National Forest System habitats and activities for threatened and endangered species to achieve recovery objectives so that special protection measures provided under the Endangered Species Act are no longer necessary. FSM 2670.21. The agency must also avoid all adverse impacts on threatened and endangered species and their habitats, except when it is possible to compensate adverse effects totally through alternatives identified in a biological opinion rendered by federal agencies responsible for ESA administration. FSM 2670.31. In addition, the Forest Service

must identify and prescribe measures to prevent adverse modification or destruction of critical habitat **and other habitats essential for the conservation of** endangered, threatened, and proposed species. *Id.*, emphasis added. Even if those habitats essential for the conservation of the species are currently unoccupied, as is the TBNG.

Additional directives apply to decision-making Forest Service officials. Regional Foresters must approve closures of National Forest System lands as necessary to protect habitats or populations of threatened, endangered, proposed, or sensitive species (36 CFR 261.70), while Forest Supervisors must develop quantifiable recovery objectives and develop strategies to effect recovery of threatened and endangered species. FSM 2670.44, .45. The plan amendment does neither of these things.

As clearly discussed in *WWP v. Salazar* (4:08-CV-516-BLW, D Idaho), for the BLM:

They are both official BLM policies that on their face apply to the Craters EIS but were not discussed in that NEPA document. At the very least, NEPA requires the BLM to discuss its own official policies that on their face apply directly to the review at issue. See *ONDA*, 625 F.3d at 1115-16 (holding that court could examine agency official policies in determining adequacy of EIS).... It does not matter whether the Policy and Strategy contain requirements or only guidelines – either way, the BLM violates FLPMA by completely disregarding its own policies on the drafting of RMPs without discussion or analysis in the RMPs at issue or the accompanying EISs. See *Atchinson v. Wichita Board of Trade*, 412 U.S. 800, 808 (1973) (where agency modifies or overrides its longstanding precedents or policies, it “has the duty to explain its departure from prior norms”).

The same principles apply to the Forest Service in the context of NFMA and the agency’s own planning regulations.

To achieve recovery and de-listing of the black-footed ferret under the terms of the ESA, the Black-footed Ferret Recovery Plan requires, *inter alia*, the following measures:

- Establish free-ranging black-footed ferrets totaling at least 3,000 breeding adults, in 30 or more populations, with at least one population in each of at least 9 of 12 States within the historical range of the species, with no fewer than 30 breeding adults in any population, and at least 10 populations with 100 or more breeding adults, and at least 5 populations within colonies of Gunnison’s and white-tailed prairie dogs.
- Maintain these population objectives for at least three years prior to delisting.
- Maintain a total of approximately 494,000 ac (200,000 ha) of prairie dog occupied habitat at reintroduction sites by planning and implementing actions to manage plague and conserve prairie dogs.

BFF Recovery Plan, Attachment 30, at 61. As of 2008, only four black-footed ferret populations were considered self-sustaining. Attachment 33. According to USFWS, “Much

of the remaining prairie dog occupied habitat is highly fragmented and repeatedly impacted by poisoning and/or disease, with few complexes of a size adequate to support black-footed ferrets” (citations omitted). Attachment 33.

Regarding impacts to ferret recovery, USFWS had this to say in their 2008 5-year Review:

We consider other aspects of this factor to be a high magnitude, imminent threat, including: the present or threatened modification of habitat due to disease (see section 2.3.2.3) and the present or threatened curtailment of habitat due to poisoning (see section 2.3.2.5). Overall, we consider the present and threatened destruction, modification and curtailment of habitat a high magnitude, imminent threat to the black-footed ferret, unless poisoning is ameliorated by adequate regulatory mechanisms (see section 2.3.2.4) that provide management for a sufficient amount of prairie dog habitat to achieve ferret recovery objectives; and unless disease is managed by dusting, vaccines, maintenance [sic] of large sites, and/or maintenance of more sites (see section 2.3.2.3).

Attachment 33 at 15. The plan amendment is insufficient in failing to require disease prevention, and in authorizing increased threat levels from shooting and poisoning. The USFWS added:

We consider inadequate regulations, particularly with regard to prairie dog management, a high magnitude, imminent threat to the species. We believe this threat can be ameliorated through the development of regulatory mechanisms that provide strategic management objectives for both a sufficient quantity and quality of prairie dog habitat to achieve black-footed ferret recovery objectives despite periodic losses due to plague or poisoning.

Id. at 22. The Thunder Basin plan amendment clearly does not meet these criteria. Furthermore:

With the decline in prairie dogs, there was a concurrent decline in blackfooted ferrets. Poisoning, if thorough enough, may result in permanent loss of potential habitat, such as occurred in the extirpation of BTPDs in Arizona (Hoffmeister 1986, Arizona Game and Fish Department 1988). More typically, prairie dog numbers are reduced temporarily, but long enough for ferrets to disappear.

Id. at 23. Poisoning programs on other National Grassland units are having deleterious effects on black-footed ferret recovery, as recognized by USFWS:

Recently, the U.S. Forest Service has indicated a need to balance multiple uses of the Conata Basin, South Dakota, black-footed ferret reintroduction site to reduce alleged prairie dog damage on native grasslands. Continued poisoning at the periphery of this site and proposed poisoning in the interior of the site could reduce Conata Basin ferret productivity, could

reduce the number of wild born kits available for translocation to developing recovery sites, and could significantly impact progress towards achievement of the downlisting goal.

Id. at 24.

The USFWS ranked the Thunder Basin in its top twenty reintroduction candidate sites in 2007, despite the prairie dog population having been decimated by plague at the time. Attachment 52. At one point, the WGFD considered the Thunder Basin to be the largest complex of active prairie dog colonies in the state. Attachment 34. It is clearly essential for the recovery of the species, as it is the largest remaining area of public land in the state where ferret reintroduction is foreseeably possible, and private reintroduction sites have shown little or no potential to sustain ferret populations of sufficient size to contribute toward recovery criteria. The Forest Service itself concedes, “Best available data indicate the reintroduction of black-footed ferrets to the Thunder Basin National Grassland is biologically feasible and would promote conservation and recovery of the species.” FEIS at 133.

The threshold for prairie dog complex extent is greater than the 10,000 acres the agency proposes for the new designation to replace MA 3.63. As the agency observed in 2013:

In order to support a viable population of ferrets, it is estimated that TBNG would need to have approximately 10,621 acres of prairie dogs at moderate density (Jachowski et al. 2011). A moderate density of prairie dogs is considered 12.14 to 32.38 burrows per acre (Jachowski et al. 2011). The TBNG currently has approximately 10,974 acres of prairie dogs in the MA 3.63 (ferret Management Area) and a density of 33 burrows per acre. Based on these figures, the TBNG is currently at the minimum threshold to support a viable ferret reintroduction site. The additional prairie dog control within MA 3.63 proposed by the State would reduce active prairie dog colonies to 10,000 acres, which is 621 acres below the minimum threshold for ferret reintroduction.

Attachment 3 at 20-21, *and see* Attachment 35 (Jachowski2011). Eligible complexes must be made up of colonies no more than 7 km apart in distance. Attachment 36. The Region 2 TES specialist noted that on the Buffalo Gap National Grassland, the ferret population declined along with swings in the prairie dog population, but was sustained by a core prairie dog complex of 11-13000 acres where a small ferret population was able to weather the downturn in occupied prairie dog habitats. Attachment 5 at unnumbered 145. Under the current plan amendment, prairie dog acreage would be allowed to slip significantly below this threshold, and even below the minimum threshold (7,500 acres), additional poisoning associated with private land boundaries would be permitted.

The Forest Service was subsequently instructed by the Regional Forester to disregard the complete dependence of black-footed ferrets on prairie dogs. According to Forest Service meeting minutes, “Brian Ferebee in 2017 wanted us to break the link between BFF and PDogs in plan components.” Attachment 15. This despite the very clear link between maintaining healthy prairie dog populations and black-footed ferret recovery. *See* Attachment

30. This violates NEPA's scientific integrity requirements. In planning, the Forest Service has an obligation to incorporate objectives that advance the recovery of federally listed species:

Federally listed species Forest Plan objectives must relate to the overall goal of effecting recovery and achieving eventual delisting. Management to achieve species recovery levels is required by law. Management at recovery levels specified in Recovery Plans equates with the National Forest Management Act requirement to maintain viable populations of native and desired non-native vertebrate species. Forest Plan preferred alternatives must meet or exceed recovery objectives.

FSM 2672.31. Instead of meeting or exceeding recovery objectives for the USFWS Black-footed Ferret Recovery Plan with regard to the Thunder Basin National Grassland, the Forest Service with this plan amendment puts in place measures that will make ferret recovery on the TBNG more difficult, if not impossible. It puts a cap on black-tailed prairie dog colony acreage at 10,000 acres (DROD at 65, 66), below the minimum threshold required for ferret recovery. It eliminates the direction to manage prairie dog colonies actively for ferret reintroduction, and replaces it with direction to manage only for "short-stature vegetation communities." DROD at 64. It allows acreage to drop as low as 7,500 acres, and continues to allow poisoning even below this threshold. It removes consultation with USFWS prior to poisoning in key colonies for reintroduction. DROD at 67. Perhaps most tellingly, the plan amendment eliminates a standard that heretofore has required the following: "Authorize only those uses and activities in the reintroduction area that do not reduce habitat below the level needed to support a long-term sustainable black-footed ferret population. Until habitat is available to support a long-term sustainable black-footed ferret population, do not authorize uses and activities that would prevent annual increases in the prairie dog population." DROD at 65. In effect, the Forest Service will henceforth allow uses and activities that reduce habitat below the level needed to support a long-term sustainable ferret population. This is a clear and obvious violation of ESA, NFMA, and regulatory requirements to recover listed species.

The Biological Assessment (BA) for this plan amendment with regard to ferrets also does not meet the basic requirements for such a document under Section 7 of the Endangered Species Act. The Forest Service determined there would be "no effect" on black-footed ferrets because any wild ferret on the ground in Wyoming would be covered under the blanket 10(j) (experimental nonessential) status accorded to all black-footed ferrets outside captivity. This is an erroneous conclusion. The same mistake is repeated in the Biological Evaluation. FEIS at E-42. It is nonsensical that there is no wild black-footed ferret population in the wild, anywhere, that is not considered "essential" and given the full protection of the ESA. Be that as it may, there is no loophole under the ESA allowing agencies to bypass a determination on whether a project, plan, or other agency decision is likely to significantly affect a listed species, because the population in question is listed as experimental/nonessential under a 10(j) determination. The agency must do its due diligence nonetheless. Here, by approving a plan amendment that restricts the population of black-tailed prairie dogs below the critical population/acreage threshold needed to sustain a viable population of black-footed ferrets over the long term, the agency is required to make a "may affect, likely to adversely affect" determination. The Forest Service's failure to do this is a

violation of the ESA. The Forest Service made the BA available for public review only three working days prior to the comment deadline, giving commenters inadequate time to consider and respond to the information therein. This violates NEPA notice and comment requirements.

Requested Remedy: The Forest Service must issue a ROD in which the MA 3.63 Ferret Reintroduction Area designation is retained and non-discretionary measures are applied that allow occupied acreage within MA 3.63 to maintain at least 200 breeding adult ferrets in this area at all times, taking into account the impacts of plague and all other prairie dog mortality factors. It will not be sufficient to set acreage targets at the 10,621-acre minimum established in the best available science, because plague and other stochastic factors would likely drop the acreage below this critical threshold before the agency could take action to reverse declines, and ensure that these measures are incorporated into the ROD. Standards guaranteeing adequate prairie dog colony acreages to support long-term ferret viability must be reinstated. Re-issue a new BA with a “may affect, likely to adversely affect” finding and proceed forward with the additional required ESA consultation required by law.

5. The EIS’s Purpose and Need Unreasonably Restricted the Range of Alternatives

WWP raised concerns about the impermissible narrowness of the Purpose and Need statement for the plan amendment at the scoping stage (at unnumbered 24) and DEIS stage (at 8-9, 10, 15). WWP specifically raised the issue that human health risks from plague are not a legitimate concern or issue (scoping comments at unnumbered 9). Public health from plague in prairie dogs is not a significant concern, according to Clay van Houten of the Wyoming Department of Health. Attachment 5 at unnumbered 80. Commenters recommended that the Forest Service consult with the Center for Disease Control and the Wyoming Department of Health regarding the magnitude of any public health risk from plague-infected prairie dogs. *Id.* The Forest Service took an abbreviated look at public health issues posed by plague, and found no significant issues itself. FEIS at 106. This undermines the validity of including public health as an important criterion in the Purpose and Need statement.

The Purpose and Need statement dictates the outcome of the plan amendment most desired by livestock producers (i.e., increased poisoning of prairie dogs, reduced colony acreage, prevention of prairie dog dispersal between public and private lands, abandonment of ferret reintroduction), while failing to leave room for other reasonable alternative prairie dog management and conservation strategies, as discussed exhaustively elsewhere in this objection. In doing this, the Purpose and Need decides the outcomes of alternative choices at the outset of the NEPA process, instead of allowing for a range of reasonable alternatives. This violates NEPA.

Requested Remedy: The faulty Purpose and Need statement poisons the entire EIS process, and therefore the Forest Service must begin afresh with a new, more expansive Purpose and Need statement that does not predetermine the outcome of the NEPA process, and start a new plan amendment EIS process from scratch.

6. The EIS failed to examine a range of reasonable alternatives

Indeed, the Forest Service had illegally predetermined the outcome of the 2020 TBNG Plan Amendment before the process even began, in a 2017 Interagency Statement co-released with WGFD and USFWS to the effect that ferret reintroduction was no longer desired and prairie dog management should instead be focused on boundary control and disease suppression. Attachment 5 at unnumbered 100. This pre-decisional determination to eliminate the MA 3.63 Black-Footed Ferret Recovery Area designation constitutes a separate violation of NEPA (raised by WWP in DEIS comments at 16, and not corrected in the FEIS). The same predetermination poisoned the agency's development of a range of alternatives. The Forest Service determined, "Based on preliminary consideration, it is unlikely that the ... WWP proposals will be analyzed in detail." Attachment 37. WWP raised a number of reasonable alternatives which the agency dismissed from consideration without finding them unreasonable, as follows.

Failure to Consider an Alternative Returning to the original 2002 Grassland Plan, Prior to Amendments

WWP clearly called for the Forest Service to re-institute the original 2002 Grasslands Plan, unweakened by subsequent plan amendments. DEIS comments at 9, 17. The 2002 Grasslands Plan (including TBNG) designated 53,830 acres as a Black-footed Ferret Recovery Area (MA 3.63), closed to shooting and with poisoning limited to the immediate vicinity of homes and cemeteries. There is no question that this level of management, prior to the significant reductions in wildlife protections that occurred as a result of the 2009 plan amendment is reasonable: The Forest Service operated under its provisions (and without significant issues, we might add) for seven years. The poisoning provisions in the 2002 Grassland Plan for MA 3.63 are consistent in every way with CDC recommendations for plague prevention in humans. Attachment 5 at unnumbered 82. This acreage reduced to 44,420 acres in the 2009 TBNG Prairie Dog Plan Amendment, a decrease of almost 10,000 acres (*see* FEIS at 14 for key changes), which retained the closure to shooting (subsequently undermined by Regional Office decisions) but significantly weakened poisoning requirements to allow poisoning near private land boundaries. The 2009 amendment was itself a compromise that moved the agency away from responsible prairie dog and ecosystem stewardship, created through a rancher-led collaborative group, and was opposed by the conservation groups most involved in prairie dog conservation issues on the TBNG.

In each of the alternatives considered for implementation, 1-mile residency buffers would be implemented for the exclusion of prairie dogs. FEIS at vi. This is excessive and cannot be justified based on science. The 2002 Grassland Plan permitted poisoning in a much more limited area, and thus lies outside the range of alternatives considered in this EIS process. The "no net loss" provision for habitat, applied as a standard under the 2002 plan, is eliminated in the 2020 plan amendment. DROD at 37. The 2002 Grassland Plan also designated 53,830 acres for ferret reintroduction as MA 3.63, with protections from prairie dog shooting and most forms of prairie dog poisoning. *See* FEIS at 8. That's a larger number of acres, with greater protections for native wildlife, than under any alternative considered in this EIS (including, ironically, the so-called "Prairie Dog Emphasis" alternative). Thus, once again, the level of protections under this proposed alternative lies outside the range of alternatives considered in detail.

The Forest Service never even stated why it did not consider a return to 2002 conservation measures in its plan amendment. *See* FEIS at 48 *et seq.*

Failure to Consider a No Livestock Alternative

WWP objects to the Forest Service's refusal to consider in detail a "no livestock" alternative, despite this being eminently reasonable. WWP raised this alternative in scoping (at unnumbered 2, 25) and at the DEIS stage (comments at 1, 18). All of the alternatives considered for this plan amendment provide opportunities for livestock grazing. *See* FEIS at vi. Thus, the "no livestock" alternative proposed by WWP is clearly outside the range of alternatives considered. Livestock grazing has resulted in shifts away from natural plant community structure and function, with grazing intolerant grasses reduced or eliminated, and increases in non-native weeds. Attachment 38. Yet the Forest Service refused to consider a no livestock alternative, and indeed, all alternatives maintain previous levels of livestock grazing identically. FEIS at 55, 95, 112.

Poisoning prairie dogs costs the taxpayers \$19.40 per AUM (Miller et al. 2007, Attachment 39), whereas cattle ranchers pay the federal government only \$1.35/AUM for livestock grazing. From a fiscal perspective, the most reasonable alternative is to eliminate non-native livestock and stop poisoning the native wildlife. The Forest Service also concedes that livestock are a known vector of invasive weed transmission, and that removing them would remove that vector. FEIS at 90. Because the levels of livestock grazing are identical under all alternatives (FEIS at 95), there is no reasonable comparison of alternative livestock management regimes on R2 Sensitive species or land health.

Livestock grazing is a privilege, not a right. The Forest Service is under no legal obligation to permit any livestock grazing anywhere on the TBNG, and is empowered by federal law and regulation to deny this practice where, as here, livestock grazing has proven itself incompatible with the agency's other land and wildlife stewardship obligations. As long as the agency allows some livestock grazing somewhere on Forest Service administered lands, it has satisfied its legal obligations for multiple use. The multiple use mandate that applies to the agency has explicitly been determined **not to mean** every use on every acre.

Failure to Consider a Bison Reintroduction Alternative

Bison restoration requires, large, connected landscapes (Attachment 1, Augustine et al. 2019), and National Grasslands like the Thunder Basin present some of the best opportunities for this. *See* Attachment 40. WWP asked the Forest Service to consider a bison restoration alternative in comments (scoping at unnumbered 25, DEIS comments at 18). This is a very reasonable alternative, particularly given the success and ecological benefits that are resulting from bison reintroduction on private lands, public lands, and tribal reservations across the West. The restoration of wild bison as a wildlife species on the TBNG also would entail the removal of ecologically harmful barbed-wire fences, which interfere with pronghorn migrations and are a major source of collision mortality for low-flying sage grouse. Attachment 41.

Bison are native to TBNG, and their herbivory is known to favor the shortgrass prairie ecosystems found here. Attachment 5 at unnumbered 223, 244. Bison have significantly different impacts from cattle, and are ecologically more appropriate to the Great Plains than cattle, which are suited to more mesic areas. Attachment 42. Indeed, they can be considered

a keystone species, and are being reintroduced to restore the ecological health of grassland systems. Attachment 43. Ecological shifts in this area were caused, insignificant part, by “the reduction in the number and distribution of native herbivores and their replacement with domestic livestock--species adapted to the more mesic, wooded environments of Europe.” Attachment 5 at unnumbered 244. Furthermore, “Today, on National Forest system lands in the NGP, grazing by domestic livestock on remaining tallgrass-(~ 98% of the area), mixed-(~95% of the area) and shortgrass prairie (~95% of the area) is characterized by high intensity rather evenly spaced across the landscape and over long duration. In addition, fencing, additions of fixed watering points, and fire policy further impact plant and animal communities.” Attachment 5 at unnumbered 257. Re-establishing wild bison herds is important not only from the standpoint of bison conservation, but also from the standpoint of prairie restoration. Attachment 44. All of these results indicate that replacing cattle with wild bison would enhance the ecological health of the TBNG. Bison would also enhance public recreation and enjoyment.

The following points of emphasis suggest that bison are not only ecologically more appropriate but also better sustain native ecosystems on the TBNG:

- There is little if any similarity in the temporal or spatial aspects of the historic ecological processes (fire and grazing) to that evident today.
- Grazing by bison was the major determinant in the historic extent of the shortgrass prairie, a prairie ecosystem that has greatly declined in the extent.
- An immense literature describes the close relationship of bison and prairie dogs to the diversity of prairie wildlife and processes significant to prairie diversity.
- Significant scale-dependent differences exist in the impact of domestic livestock and bison.

Attachment 5 at unnumbered 257. Yet the agency declined to consider an alternative to reintroduce wild bison (FEIS at 55), in the absence of a finding that such an alternative would be unreasonable. This violates NEPA.

Failure to Consider an Alternative Placing Prairie Dog Colonies under NSO, and prohibiting vibroseis, for Minerals

WWP raised the need for the Forest Service to place No Surface Occupancy (NSO) stipulations for minerals development on active prairie dog colonies plus a half-mile buffer (scoping comments at unnumbered 9). This is an eminently reasonable alternative, given the evidence brought to the fore in our comments that minerals development has direct and cumulative impacts on prairie dogs and their associated obligate wildlife species. Yet the agency failed to consider such an alternative, and no alternative considered incorporated such measures. The Forest Service never considered an alternative applying additional habitat protections from mineral development in its plan amendment. *See* FEIS at 48 *et seq.* Instead, the Draft ROD applies weaker measures that fail to prevent mineral development

within active prairie dog colonies, and limits vibroseis only seasonally, instead applying density limits and seasonal restrictions only. *See* DROD at 37.

Failure to Consider a TBNG-wide Moratorium on Prairie Dog Shooting and Poisoning

WWP recommended a Grassland-wide moratorium on prairie dog shooting (scoping at scoping at unnumbered 21) and poisoning (DEIS comments at 17). This recommendation was backed by a comprehensive review of the science on direct and indirect impacts on wildlife, as well as lack of any legal and cultural legitimacy. The Forest Service argued, in regard to poisoning, that a unit-wide moratorium is outside the scope of the Purpose and Need. FEIS at 54. This does not indicate in any way that such a moratorium would be unreasonable. It simply provides one more example of how the Purpose and Need statement unreasonably constrained the range of alternatives considered.

The TBNG formerly permitted non-governmental organizations to relocate prairie dogs within the Grassland to ameliorate the concerns of neighboring landowners (Attachment 45), and even provided funding (e.g., Attachment 46). The DROD permits this activity, subject to approval by the WGFD (which is an abrogation of federal management on federal lands), but does not require it, nor does it limit boundary management to nonlethal methods (quite the contrary, poisoning is identified as the preferred management tool). It is important to note that the Forest Service relied on state denial of (unnecessary) permits to block nonlethal translocations of prairie dogs on the TBNG in the past, underscoring the problematic nature of involving state agencies in this federal land and wildlife issue. No alternative limits prairie dog management to vegetation management and nonlethal relocations. While WWP does not advocate for the harassment of native wildlife through capture and translocation, this is a preferable alternative to exterminating them.

Failure to Consider a Beaver Reintroduction Alternative

WWP directed the Forest Service to consider at least one alternative requiring beaver reintroduction on the TBNG (scoping at unnumbered 24), providing a scientific basis for why this is necessary and desirable to restore healthy riparian function. The 2012 Planning regulations require:

Riparian areas. (i) The plan must include plan components, including standards or guidelines, to maintain or restore the ecological integrity of riparian areas in the plan area, including plan components to maintain or restore structure, function, composition, and connectivity.

36 CFR 219.8(a)(3). The agency failed to consider a beaver reintroduction alternative. FEIS at 54. This failure is made that much more trenchant given that the Cheyenne River is allocated a Special Interest Area management status under the Preferred Alternative that recognizes (but does little to protect) the ecological function of this area. DROD at 63. Parts of the area in question were evaluated as a potential Research Natural Area in 1998, which analysis concluded that the potential for RNA designation was good. Attachment 47. Beavers are native to the TBNG, and reintroducing them would improve the ecological health of the Cheyenne River bottomlands and other riparian areas, benefitting numerous species of native wildlife and perhaps even returning currently intermittent and ephemeral

stream channels to perennial flows. It is therefore a reasonable alternative, and the Forest Service has made no finding otherwise.

Requested Remedy: The agency should withhold issuance of a ROD on the plan amendment until such time as a Supplemental Draft and Final EIS can be prepared, fully considering each of the above-listed alternatives in detail. Some of the alternative measures outlined above are suitable to be combined with others, such that a smaller number of alternatives would be possible. Others (e.g., a ‘no poisoning’ alternative and the 2002 Grassland Plan alternative) would have to be analyzed separately due to mutually exclusive provisions. It is yet important for the contributions of environmental costs and benefits for each aspect of each alternative outlined above be evaluated separately, allowing the agency an unlimited ability to incorporate certain aspects into the final ROD for the plan amendment.

7. Failure to Consider Designation of Species of Conservation Concern

WWP specifically raised the issue of designating the black-tailed prairie dog as a Species of Conservation Concern in our DEIS comments (at 8). As the Forest Service pointed out in its scoping letter, “The Thunder Basin National Grassland does not yet have species of conservation concern identified, and prairie dogs and associated species such as mountain plover, burrowing owl, and swift fox, as well as other animal and plant species in the plan area, may qualify as potential species of conservation concern.” Scoping Notice at 5. The agency concedes that this species is a potential Species of Conservation Concern. DEIS at 110. However, “The proposed plan amendment will not result in an official designation of species of conservation concern on the Thunder Basin National Grassland by the Rocky Mountain Region regional forester.” FEIS at 12. Under the 2012 NFMA regulations, Species of Conservation Concern designations are required when Sustainability and Ecosystem plan components are insufficient to provide the ecological conditions to: “contribute to the recovery of federally listed threatened and endangered species, conserve proposed and candidate species, and maintain a viable population of each species of conservation concern within the plan area.” 36 CFR 219.9(b)(1). In this case, we’re talking about a plan amendment that addresses the Black-footed Ferret Reintroduction area on the TBNG, so this provision is clearly triggered. The agency has recognized this. Attachment 48. Yet the plan amendment makes no move to designate the black-tailed prairie dog (or any other species) as a Species of Conservation Concern.

Requested Remedy: The Forest Service must issue a Supplemental EIS considering in detail (and evaluating the environmental consequences of) designating the black-tailed prairie dog, as well as mountain plover, burrowing owl, swift fox, ferruginous hawk, and golden eagle as Species of Conservation Concern throughout the TBNG, and designates, at minimum, the black-tailed prairie dog as a Species of Conservation Concern.

8. Elimination of the Black-tailed Prairie Dog Conservation Assessment and Management Strategy

The Preferred Alternative would eliminate the Forest Service’s Black-tailed Prairie Dog Conservation Assessment and Management Strategy as it applies to the TBNG. FEIS at 17,

DROD at 39. WWP highlighted the importance of this conservation strategy repeatedly in our DEIS comments. E.g., at 17, 18, 19, 24. According to Forest Service policy, the agency must “[d]evelop Forest Service recovery strategies to implement approved Recovery Plans. Apportion recovery objectives among forests. In cooperation with the FWS and States, establish recovery objectives in the absence of, or interim to, approved Recovery Plans; integrate these objectives with regional and forest plans.” FSM 2670.44. Furthermore, the agency must make a determination on conservation strategies: “To preclude trends toward endangerment that would result in the need for Federal listing, units must develop conservation strategies for those sensitive species whose continued existence may be negatively affected by the forest plan or a proposed project.” FSM 2621.2. Yet instead of developing a recovery strategy for the black-tailed prairie dog, the Forest Service instead is eliminating the recovery strategy that it has already developed, and substituting a plan amendment that further impairs and frustrates the recovery of the black-tailed prairie dog on the TBNG. This is a direct contravention of the agency’s management directives, and is arbitrary and capricious and an abuse of discretion.

Requested Remedy: The final ROD should incorporate in full the provisions of the 2015 Black-tailed Prairie Dog Conservation Assessment and Management Strategy.

9. Failure to Take a Hard Look at Direct and Cumulative Impacts

WWP specifically raised the issue of rigorously examining direct and cumulative impacts in comments (scoping at unnumbered 11). The Draft and Final EIS fail miserably in these regards.

Failure to Adequately Consider Effects to Prairie Dogs

Despite the plan amendment’s design to limit prairie dog colony size and expansion into private lands through lethal methods including shooting and poisoning, the EIS fails to take the legally required ‘hard look’ at impacts to black-tailed prairie dogs, a Region 2 Sensitive Species. This is an issue that WWP raised extensively in DEIS comments (at 20 *et seq.*). The agency argues, without support, that the actions of the Preferred Alternative will not result in a loss of viability. Even under the current management (2002 plan with 2009 prairie dog amendments), the combination of plague, shooting, poisoning, and withholding of dusting for plague have brought the black-tailed prairie dog to the very brink of extirpation on the TBNG, now, already. The undersigned signatory visited the MA 3.63 area in July of 2020 and could not find even one single prairie dog. Given that current management is inadequate to maintain population viability for prairie dogs, given wide population swings modulated by episodic outbreaks of plague (a non-native disease for which prairie dogs have yet to develop widespread and effective immune responses), and given the decrease in protections and increase in authorized killing through shooting and poisoning authorized under the plan amendment, it is both arbitrary and capricious and dishonest in the extreme for the Forest Service to conclude that its Preferred Alternative will not have major impacts on prairie dog populations, and will not threaten the viability of this species (and every species dependent on it).

In the absence of supporting analysis, the Forest Service concludes for black-tailed prairie dogs, “May adversely impact individuals but not likely to result in a loss of viability in the

planning area, nor cause a trend toward Federal listing; No substantial adverse impacts or substantially lessened protections as a result of the plan amendment.” FEIS at 127. “The primary causes of the decline in prairie dog populations have been anthropogenic control measures [i.e., shooting, poisoning] and the introduced disease, sylvatic plague.” FEIS at E-164. Complete eradication has occurred in places (FEIS at E-165), indeed, over the vast majority of the species’ former range. The Forest Service relies heavily on the ability of prairie dogs to bounce back after being decimated by plague, but the fact remains that its own analysis has established that a combination of human-caused factors (poisoning and shooting) can extirpate – and have extirpated – prairie dogs from the vast majority of their former range even before the arrival of sylvatic plague, and that the addition of plague creates a population volatility that makes unit-wide extirpation an even greater likelihood. The agency’s failure to undertake a valid impacts analysis, which should have led the agency to acknowledge this possibility, is thus that much more stark. The agency’s determination that its alternatives, variable as they are with regard to approach to prairie dog killing, each would have no effect on populations, is arbitrary and capricious.

Indeed, it is entirely likely that the additive mortality from shooting and poisoning, is likely to cumulatively affect prairie dog populations (*see* DEIS comments at 21) to cause the extirpation of prairie dogs on the TBNG, which is exactly the outcome that at least some of the grazing permittees running cattle on this unit seek to achieve. *See* FEIS at E-162. While the Forest Service interprets these fluctuations as a sign of resilience, prairie dogs came dangerously close to extirpation in 2017, with only 625 mapped acres on the entire TBNG FEIS at E-162. How will prairie dog populations fluctuate differently under each alternative? What are the minimum populations of populations under each alternative, and how do they differ by areas currently isolated from each other from a prairie dog occupancy perspective? Will local populations be extirpated, and if so how (if at all) will they be recolonized? The EIS is silent on these questions. Had the Forest Service undertaken a competent cumulative effects analysis, it would have concluded that this Preferred Alternative is illegal because it fails to guarantee prairie dog population viability. In the absence of such a direct and cumulative effects analysis, it appears that the agency is waiting to hear this from the courts.

Failure to Adequately Consider Direct and Cumulative Effects of Motorized Recreation

WWP specifically raised the issue that impacts to prairie dogs and ecosystems from prairie dog shooting and illegal motorized use in our comments (scoping at unnumbered 10). While the agency provides a very abbreviated description of a handful of recreational activities (FEIS at 96), direct and cumulative effects of motorized recreation on sensitive wildlife species, including black-tailed prairie dogs, is missing. The Forest Service apparently (mistakenly) believes that it must only consider impacts *to* motorized recreation of the various management alternatives, and fails to consider that it must also consider impacts of motorized and other types of recreation *on* the environment, under each alternative. Levels of prairie dog shooting (and attendant motorized recreation) differ by alternative, based on how much shooting is allowed. Impacts of shooting, and associated impacts of motorized access associated with shoot, will therefore necessarily differ by alternative. The analysis of these different levels of impact to the human environment is not presented in the EIS.

Failure to Adequately Consider Effects to Prairie Dog Obligate Wildlife

WWP specifically raised the issue of direct and cumulative impacts of prairie dog poisoning and shooting to swift fox (scoping at unnumbered 11), burrowing owls (DEIS comments at 24-25), mountain plovers (DEIS comments at 25). The agency arbitrarily concludes for each of the sensitive prairie dog obligate wildlife species discussed elsewhere in these comments, “May adversely impact individuals but not likely to result in a loss of viability in the planning area, nor cause a trend toward Federal listing; No substantial adverse impacts or substantially lessened protections as a result of the plan amendment. FEIS at 125-127. The failure to adequately address impacts to species viability are discussed in the Species Viability section of this Objection, above. However, despite considerable analysis of the potential effects of poisons to human health in the EIS, analysis of impacts to native wildlife appears to be missing.

Burrowing owls “tend to cluster in Management Area 3.63,” the primary area for changed management under the plan amendment. FEIS at E-62. In the absence of supporting analysis, the agency concludes for all alternatives that “any reduction in available habitat may impact individuals or clusters of burrowing owls; however, the acreage objectives in all alternatives are expected to allow for the species to maintain sufficient distribution across the grassland.” FEIS at E-66. The Forest Service states that “negative effects are expected to be localized.” FEIS at E-76. However, burrowing owls are entirely dependent on active prairie dog colonies for their habitat. If active colonies disappear from TBNG (an outcome that the Forest Service is not in a position to guarantee based on the reality of periodic plague outbreaks and the additive mortality posed by prairie dog shooting and poisoning), the effects to burrowing owls will NOT be “localized,” but total. They will be extirpated from TBNG. And this does not even consider the reality, ignored in the agency’s impact analysis, that the agency is not maintaining an adequate minimum acreage to support a long-term viable burrowing owl population, as discussed elsewhere in this objection. As a result, the agency’s direct and cumulative impacts analysis and effects determination are completely invalid.

For ferruginous hawks (also an R2 Sensitive Species), the Forest Service acknowledges that they are sensitive to declines in their prey base (FEIS at E-87), which is heavily tied to prairie dogs on the TBNG. *And see* FEIS at E-89, with additional effects from direct poisoning from rodenticides and lead-poisoning related to prairie dog shooting. WWP raised the issue of lead poisoning in our comments. E.g., DEIS comments at 5, 22. Stephens et al. (2008) failed to document lead poisoning in raptors on the TBNG, despite accounts of lead poisoning from local raptor rescue center officials, but attributed this lack of confirmed poisoning to low levels of shooter effort due to shooting restrictions in effect in Management Area 3.63, as well as lowered prairie dog populations due to plague. Attachment 49. “Key threats to this species include prairie dog control and plague, rodenticides, energy development and infrastructure and climate change.” FEIS at E-88. The agency does not evaluate the overall prey base on TBNG for ferruginous hawk, and whether the extirpation of prairie dogs (possible under all alternatives considered) would result in an insufficient prey base to sustain a ferruginous hawk breeding population here. And there is no cumulative effects analysis of the effects of ingestion of poisoned prairie dogs and/or lead to ferruginous hawks, and how those mortalities might interact with prey scarcity to further impair the TBNG’s ability to sustain a viable population of ferruginous hawks. Yet despite all these admitted risk factors, and their differences between alternatives, the Forest

Service arbitrarily concludes that ferruginous hawk populations will remain viable, and there will be no population-level effects.

According to the Forest Service, “Golden eagles are somewhat sensitive to human activity, and their reproductive success tends to track the availability of preferred prey, which usually consists of rabbits or large rodents.” FEIS at E-213. To the extent that the plan amendment could have a significant effect on prey (prairie dog) density and overall population, it could have a significant effect on golden eagle recruitment on TBNG. Golden eagle populations are known to drop significantly following plague-mediated prairie dog population crashes on TBNG. FEIS at E-218. “Key threats to this species include prairie dog control, sylvatic plague, rodenticide use, recreational shooting and hunting, electrocution, energy development and infrastructure, and climate change.” FEIS at E-214. In addition, secondary poisoning and ingestion of lead from prairie dog shooting are known threats to golden eagles. FEIS at E-217. Yet despite all these risk factors, the possibility of prairie dog extirpation on the TBNG, and the known significant effects of loss of prairie dog prey base on golden eagle population trends on the TBNG, the various alternatives would all have identical effects on golden eagles, amounting to no significant effects on populations. This is an arbitrary and capricious conclusion that does not match the information presented in the EIS.

For mountain plover, the Forest Service acknowledges that prairie dog colonies provide the preferred nesting habitat, and that “contemporary livestock grazing practices without the additional disturbance of fire do not adequately create suitable nesting habitat on a long-term scale.” FEIS at E-137, *and see* E-138. “Key threats to this species include prairie dog control and plague, fire suppression, grazing, recreational shooting, energy development and infrastructure and climate change.” FEIS at E-139. Plover densities are known to crash following plague events. FEIS at E-145. Furthermore, “In the absence of prairie dog colonies, vegetative conditions are not typically suitable on the TBNG for mountain plover breeding and nesting habitat.” FEIS at E-145. If active colonies disappear from TBNG (an outcome that the Forest Service is not in a position to guarantee based on the reality of periodic plague outbreaks and the additive mortality posed by prairie dog shooting and poisoning), mountain plovers would be extirpated from TBNG. And this does not even consider the reality, ignored in the agency’s impact analysis, that the agency is not maintaining an adequate minimum acreage (*see* FEIS at E-145-146) to support a long-term viable mountain plover population, as discussed elsewhere in this objection. As a result, the agency’s direct and cumulative impacts analysis and effects determination are completely invalid.

The swift fox was formerly listed under the ESA, in part due to “threats [including] prairie dog control programs that limit the prey base.” FEIS at E-181. The link to prairie dog colonies is well-established:

On TBNG, swift fox largely inhabits black-tailed prairie dog colonies because colonies provide an abundant prey base and denning habitat. Prairie dog colonies provide burrows and attract other potential food sources such as mice. Swift fox populations on TBNG have been observed to grow and decline as prairie dog colony extent grows and declines.

FEIS at E-181. Yet despite the fact that “swift fox would be directly impacted by management activities used to constrain colony extent to the identified acreage objectives for prairie dog colony extent under each alternative,” (FEIS at E-186), the Forest Service finds no difference in effect of any alternative to swift fox populations. The agency also does not analyze the effect of prairie dog extirpation on the TBNG, an outcome which the agency cannot rule out under any of the alternatives it is considering for this plan amendment for reasons discussed elsewhere in this objection, on swift fox populations here. Are there sufficient alternative prey to sustain them in the absence of prairie dogs? The EIS is silent.

Failure to Adequately Consider Direct and Cumulative Impacts of Livestock Grazing

WWP expressed our concerns with the impacts of current livestock grazing practices on a variety of sensitive National Grassland resources in comments (scoping at unnumbered 13-20). The Forest Service dedicates considerable analysis to the effects of the plan amendment, including management efforts proposed, to livestock and to the public-land lessees who operate on grazing leases on the TBNG. *See* FEIS at 82 *et seq.* However, the impacts of livestock grazing on prairie dogs is sparse (FEIS at 100) and grazing impacts on prairie dog associated species is altogether missing.

Failure to Consider the Effect of Prairie Dog Shooting on Mental Health of Participants

In our DEIS comments (at 23), WWP pointed out the psychopathic nature of prairie dog shooting, authorization of which is expanded under the preferred Alternative, and cited numerous articles linking such sadistic behavior toward animals with violent crimes against humans. *See, e.g.,* Attachment 50. Yet the EIS fails to study and disclose the impact of expanded authorization for prairie dog shooting on the mental health of participants, and their subsequent increased likelihood in participating in subsequent violent crimes. This is an impact on the human environment that extends far beyond the bounds of the Thunder Basin National Grassland, with crimes likely to take place in neighboring communities like Douglas and Gillette, and even in faraway places if the shooter is not from the local area. The Forest Service has an obligation to study these impacts, and to at least estimate where they are likely to occur based on the place of residence for prairie dog shooters using the TBNG. Yet it has not, in violation of NEPA.

Requested Remedy: For each of the ‘hard look’ failures above, it will be necessary to prepare a Supplemental EIS to fully consider the direct and cumulative impacts of the harmful factor described, for each alternative (and new alternatives added for detailed consideration) before a ROD can legally issue.

10. The Forest Service’s Reliance on the Thunder Basin Working Group Violates FACA

WWP raised the issue that the Thunder Basin Working Group (TBWG), which provided the measures in the Preferred Alternative for this plan amendment, was ineligible to do so because it lacks a FACA charter. WWP DEIS comments at 9. In addition to governmental and quasi-governmental agencies, the TBWG included at least three non-governmental organizations, and was convened by the Ruckleshaus Institute, an educational/collaborative advocacy group.

Requested Remedy: This legal failing is fundamental to the Preferred Alternative. The agency must therefore issue a Supplemental EIS, in which the Preferred Alternative is eliminated from consideration due to the taint of FACA violations.

Conclusion

This plan amendment repurposes public lands for private exploitation, to the detriment of native wildlife, and frustrates efforts to recover the rare and endangered black-footed ferret. Poisoning native wildlife is not only outside the mission of the Forest Service, it is antithetical to the mission of the Forest Service. Furthermore, with this plan amendment, the Forest Service puts local and state political preferences ahead of the nationwide public interest in healthy public lands and abundant wildlife. It is not the Forest Service's responsibility, nor is it within the Forest Service's legal and regulatory ambit, to poison native wildlife in an effort to prevent them from dispersing naturally from public lands to neighboring private lands. On the other hand, it is the Forest Service's obligation to maintain viable populations of native wildlife throughout the Thunder Basin National Grassland, and contribute to the recovery of endangered species, and the proposed plan amendment fails these important duties on both counts. It will be necessary for the Forest Service to subsequently change course in order to meet its legal obligations.

Respectfully yours,



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List of Attachments

1. Augustine et al. 2019. Thinking Like a Grassland: Challenges and Opportunities for Biodiversity Conservation in the Great Plains of North America
2. Memo adding black-tailed prairie dogs to R2 Sensitive Species list
3. Viability impacts of 2013 Wyoming plan amendment request
4. Desmond et al. 2000. Correlations between Burrowing Owl and Black-Tailed Prairie Dog Declines
5. Emails regarding TBNG plan amendment
6. Prairie Dog Poisoning, Northern Great Plains
7. Delibes-Mateos et al. 2011. The paradox of keystone species persecuted as pests
8. Plague Background from Shane Walker
9. 2004 Prairie Dog Report
10. 2005 Site report for Thunder Basin
11. 2010 Prairie Dog BFF Briefing Paper
12. 2011 Prairie Dog management on TBNG

13. 2012 Prairie Dog management on TBNG
14. Ferebee Letter to WCCA
15. 2019 RO Meeting Notes
16. Thunder Basin PIL
17. Augustine et al. 2008. Response of mountain plovers to plague-driven dynamics of black-tailed prairie dog colonies
18. Duchardt et al. 2018. Disturbance shapes avian communities on a grassland–sagebrush ecotone
19. Duchardt et al. 2019. Threshold responses of grassland and sagebrush birds to patterns of disturbance created by an ecosystem engineer
20. Duchardt et al. 2020. Mountain Plover habitat selection and nest survival in relation to weather variability and spatial attributes of black-tailed prairie dog disturbance
21. Dinsmore and Smith 2010. Mountain Plover Responses to Plague in Montana
22. Augustine email concerning mountain plover viability
23. Goguen 2010. Comparison of bird and mammal communities on black-tailed prairie dog (*Cynomys ludovicianus*) colonies and uncolonized shortgrass prairie in New Mexico
24. Augustine 2011. Habitat Selection by Mountain Plovers in Shortgrass Steppe
25. Augustine and Skagen 2014. Mountain Plover Nest Survival in Relation to Prairie Dog and Fire Dynamics in Shortgrass Steppe
26. Tipton et al. 2009. Abundance and density of mountain plover (*Charadrius montanus*) and burrowing owl (*Athene cunicularia*) in eastern Colorado
27. 2019 Rutherford-Augustine email
28. Prairie Dog and Associated Species Reference Guide
29. Lohr documents
30. 2013 Black-footed Ferret Recovery Plan
31. Thunder Basin Working Group recommendations
32. 2019 NEPA Prep Meeting Notes
33. 5-year review BFF
34. 2004 Black-footed ferret report WGFD
35. Jachowski 2011. The importance of thinking big
36. Biggins et al. Evaluating Habitat for Black-footed Ferrets: Revision of an Existing Model
37. 2019 TBNG Plan Amendment Project Update
38. Ganguli et al. 2011. Ecological Assessment of Sagebrush Grasslands in Eastern Wyoming
39. Miller et al. 2007. Prairie Dogs: An Ecological Review and Current Biopolitics
40. Gaines 1996. Creating a reserve within the Thunder Basin National Grasslands
41. Christiansen 2009. Fence Marking to Reduce Greater Sage-grouse (*Centrocercus urophasianus*) Collisions and Mortality near Farson, Wyoming – Summary of Interim Results
42. Allred et al. 2011. The role of herbivores in Great Plains conservation

43. Knapp 1999. The Keystone Role of Bison in North American Tallgrass Prairie
44. Freese et al. 2007. Second chance for the plains bison
45. WGFD Prairie dog translocation permit
46. Prairie dog relocation receipt
47. Jones 1998. Ecological evaluation of potential Cheyenne River RNA
48. Applying the 2012 Planning Rule to Conserve Species: A Practitioner's Reference
49. Stephens 2012. Risk assessment of lead poisoning in raptors
50. The Link Between Violence Toward Nonhuman Animals and Humans
51. Nie et al. 2017
52. USFWS letter to Rick Cables