

Defenders of Wildlife Forest Guardians

April 26, 2007

Mary H. Peterson, Forest Supervisor
Medicine Bow-Routt National Forests and Thunder Basin National Grassland
Douglas Ranger District
2250 East Richards Street
Douglas, Wyoming 82633
Attention: Marilee Houtler

VIA ELECTRONIC MAIL TO: comments-rocky-mountain-medicine-bow-routt-douglas-thunder-basin@fs.fed.us

**RE: Thunder Basin National Grassland Land and Resource Management Plan
Amendment for Prairie Dog Management**

Dear Ms. Peterson:

Thank you for the opportunity to submit comments in response to the Federal Register¹ notice published on March 13, 2007 seeking public comment on a Proposed Action to develop a project-level and site-specific implementation strategy to manage prairie dogs, and to amend the Thunder Basin National Grassland (“Grassland”) Land and Resource Management Plan (“LRMP”) to support this strategy and to modify the boundary of the black-footed ferret reintroduction area. Please accept these comments on behalf of Defenders of Wildlife and Forest Guardians and our more than 500,000 members and supporters.

We strongly support the concept of managing prairie dogs for eventual reintroduction of the endangered black-footed ferret—an obligate species of large complexes of prairie dog colonies—by increasing prairie dog acres in a designated ferret recovery area. We cannot support the Proposed Action in its current form, however, because there is little reason to believe that it would lead to this end; rather, it appears much more likely that it would lead to further losses of prairie dog colonies across the Thunder Basin landscape at a time when prairie dogs are already at incredibly low levels. We urge the Forest Service to consider the following changes when crafting the draft plan to increase the chances of a successful ferret recovery and a healthy prairie dog ecosystem.

Several of our organizations submitted substantive comments during scoping, draft EIS, and appeals process of the 2002 LRMP. We also alerted our members to these comment periods, and tens of thousands of them also submitted comments. Although we continue to have concerns with the final LRMP, it did improve prairie dog management on the Grassland in significant ways.

¹ Thunder Basin National Grassland Land and Resource Management Plan Amendment for Prairie Dog Management, 72 Fed. Reg. 11323 (March 13, 2007).

The Proposed Action as outlined in the scoping notice² and Federal Register would weaken these hard-won gains for wildlife. With a few key changes, however, it could become a fair compromise that could advance endangered species conservation.

The Proposed Action is the result of the work of the Thunder Basin Grasslands Prairie Ecosystem Association (TBGPEA), an organization open only to private landowners within the Thunder Basin landscape. The TBGPEA is working with biologists and Forest Service officials to improve the diversity of native plants and animals across this landscape and to maintain all ecosystems that occurred historically. This collaborative effort extends beyond prairie dogs to include sage grouse, sagebrush, invasive species, and more. We appreciate this concept and the work that local landowners have done so far for conservation. We also understand that it is important to the TBGPEA that the Proposed Action is implemented.

Our comments are given in the spirit of helping to make the Proposed Action acceptable to the other landowners of this landscape: the members of the public who value the wildlife of our Thunder Basin National Grassland.

Members of the TBGPEA invited some of us to their homes in early 2006 to discuss these efforts; this is greatly appreciated. We made recommendations at that time that we hoped TBGPEA members and Forest Service officials would include in the Proposed Action to make it a fair deal for prairie dog ecosystem conservation. We are disappointed that they were ignored. We repeat these recommendations here and request serious consideration for their inclusion.

Proposed Action

An EIS is required

It is not clear from this notice or the accompanying Proposed Action whether the Forest Service intends to prepare an Environmental Assessment (EA) or an Environmental Impact Statement (EIS). Prairie dog management is one of the most significant and controversial issues on Thunder Basin National Grassland. Wildlife that benefits from prairie dog colonies in the area ranges from migratory songbirds to raptors to burrowing owls to badgers, and many others. In an area where prairie dog colonies have already largely been eliminated by historic poisoning, shooting and now plague, the Proposed Action would reverse existing protections and allow eradication of much of the little that remains. This would substantially affect wildlife and habitat. An environmental impact statement (EIS) is required by the National Environmental Policy Act (NEPA) for all such federal actions that significantly affect the quality of the human environment. 42 U.S.C. 4332 (C).³

² Letter from Misty Hays, Deputy District Ranger, Douglas Ranger District, dated March 9, 2007.

³ If a major federal action (defined by 40 CFR §1508.18) will either individually or cumulatively have a significant effect on the environment, or even if there are questions as to its significance, the agency must take a “hard look” at environmental consequences such as the cumulative impacts of the activity and prepare an Environmental Analysis (EA). *Kleppe v. Sierra Club*, 427 U.S. 390, 410 (1976). The EA determines whether possible impacts are significant, thereby warranting an EIS. Council on Environmental Quality (CEQ) regulations require that an EIS discuss cumulative—direct and indirect—impacts. An EIS must “catalogue adequately the relevant past projects in the area” and describe them with sufficient specificity to permit

The Proposed Action also includes amending the LRMP, a document that underwent 5 years of drafts and public comment, as well as several appeals. A Proposed Action to amend the LRMP on a controversial topic is worthy of honest consideration of a full range of alternatives and of public input on these alternatives. We request a full Environmental Impact Statement (EIS). In this EIS, we ask that the Forest Service seriously consider a full range of detailed alternatives as well as changes to the Proposed Action. We also ask that once completed the Forest Service offer the public an opportunity to comment on the range of alternatives prior to a final decision.

Active management to increase prairie dog populations is needed

The existing LRMP allows prairie dog poisoning only under extremely limited circumstances: public health and safety risks in the immediate area, and damage to facilities such as cemeteries and residences. The Proposed Action would fundamentally alter this guidance and allow poisoning almost everywhere. Even the “Category 1” area designated for black-footed ferret recovery would be open to poisoning if prairie dog colonies exceed 18,000 acres. This also is a change from the existing LRMP, which requires that ferret habitat losses due to human control shall be replaced within the year; no cap on ferret habitat is listed. The Proposed Action would remove this standard.

The Proposed Action would allow several active methods to reduce prairie dog populations where decreases are desired (i.e., poisoning, shooting, live trapping), but would require no active methods to increase prairie dog populations where increases are desired in return for losses to control elsewhere. With the presence of plague, shooting and the increased poisoning proposed in this plan it is highly unlikely that prairie dogs would ever approach the numbers necessary for successful ferret recovery without significant active management.

The only real difference between the existing LRMP and the amended LRMP would be new authority to poison prairie dogs across most of the Grassland. Active management to increase prairie dog colonies elsewhere to make up for poisoning losses would not be required. We are hard pressed to find a reason to support the Proposed Action in its current form.

Please include and evaluate the following active management approaches to increasing prairie dog populations where increases are desired so that the final plan is a balanced approach to prairie dog management.

- Translocation

The desire by some to remove prairie dogs from boundary areas presents an opportunity to implement key wildlife provisions of the LRMP by translocating prairie dogs to areas where the plan calls for increases. Unfortunately, the Proposed Action does not require

adequate review of their cumulative impact. City of Carmel-by-the-Sea v. U.S. Dep’t of Transp., 123 F.3d 1142, 1160, 1175 (9th Cir. 1997). “Without such detailed information, neither the courts nor the public, in reviewing the Forest Service’s decisions, can be assured that the Forest Service provided the hard look that it is required to provide.” Neighbors of Cuddy Mountain v. U.S. Forest Service, 137 F.3d 1372, 1379(9th Cir. 1998).

translocation but merely states that translocation could be considered, but only when prairie dogs are below 10,000 acres within the Category 1 area.

Prairie dog translocation can achieve significant removal results, often greater than poisoning. Numerous relocators licensed by the Colorado Division of Wildlife regularly achieve greater than 90% removal (L. Sterling, pers. com. 2006). Regardless, poisoning rarely achieves 100% removal either. Poisoning efforts in South Dakota last year achieved only 50% effectiveness on Fort Pierre National Grassland, 70-95% on Buffalo Gap National Grassland, and 70-80% on Oglala National Grassland (Nebraska National Forest 2006).

Several prairie dog translocation efforts have also achieved impressive survival rates. Efforts of the Turner Endangered Species Fund have achieved success time and again in starting new prairie dog colonies through translocation efforts. They and the relocators mentioned above rarely if ever kill prairie dogs during translocation efforts (L. Sterling, pers. com. 2006).

Translocation will cost money, but so will poisoning. A reasonable portion of any budget for control efforts should be used for translocation efforts to mitigate losses. A wide variety of Forest Service projects cost far more than prairie dog translocation. For example, what is the total cost to the Forest Service of the annual grazing program, or the administration of oil and gas activities on the district? The cost of prairie dog translocation to increase populations in desired areas is high only if decision-makers consider this LRMP goal unimportant relative to other goals.

We request an estimate of the cost of the Proposed Action and an estimate of alternatives that include translocation. In addition, Defenders of Wildlife is interested in assisting with translocation and, if necessary, helping pay for this expense.

Successful translocation could help guarantee a lower loss of prairie dog acres and most likely even lead to an increase over a few years if new translocated colonies are protected from shooting. Examples of successful translocation resulting in new established prairie dog colonies are numerous.

- Dusting for plague

The Proposed Action acknowledges the significant impact that sylvatic plague has on prairie dog populations on Thunder Basin National Grassland. But no methods to address this threat are listed. Dusting for fleas that carry plague may be an effective method of reducing its impact. We request a plague management strategy that includes the immediate use of dusting in priority areas whenever plague (in prairie dog populations) occurs within close proximity.

- Shooting closures

Prairie dog shooting remains unregulated on Thunder Basin National Grassland except for the 3.63 area. Prairie dog shooting significantly reduces black-tailed prairie dog populations and population densities, alters prairie dog behavior, and may decrease colony expansion

rates. Impacts may be unpredictable and colony-specific. There is evidence to suggest that prairie dog shoots result in the harming or killing of non-target species, such as the burrowing owl, ferruginous hawk, and mountain plover. Fragments of lead ingested by raptors when scavenging shot prairie dog carcasses have the potential to kill or severely disable raptors (see Appendix B).

Clearly from the evidence cited in Appendix B shooting should be closed in any areas where prairie dog increases are desired. Additional shooting closures should be considered, especially to make up for new losses due to increased poisoning.

Please list shooting closures (additional and an increase in the size of the existing closure) as another method to increase prairie dog populations.

Plan Amendment

The core of this Proposed Action is the plan amendment. This will guide Forest Service employees in all prairie dog-related actions. We have serious concerns with the list of proposed deletions and replacements listed on pages 2-4 of the Proposed Action for the following reasons.

Item #1 would remove the standard to replace lost black-footed ferret habitat within the year, and the related Item #8 would weaken protections within the ferret area. These proposed changes are proof certain that the Proposed Action is not a benefit for ferret recovery. Please remove these proposed changes and maintain full protection of ferret habitat.

Item #3 would add two new situations for the legal use of poison. Of most concern is the final reason:

Colonies outside Categories 1, 2, 3, and 4 (as identified in strategy) if the Forest Service determines they are not needed for habitat for prairie dogs, black-footed ferrets or other associated species.

This would open the vast majority of Thunder Basin National Grassland to poisoning at the whims of managers. How exactly would the Forest Service determine that a prairie dog colony is not needed for habitat for the prairie dogs that inhabit it? Please maintain the overall guidance of the existing LRMP – which went through years of agency analysis and significant public comment – by removing this as a reason for poisoning.

Purpose and Need

The purpose and need section of the Proposed Action correctly notes the Forest Service's obligation to provide habitat to wildlife, including endangered species. But the Proposed Action would most likely lead to additional losses of wildlife habitat. With the presence of plague in mind, please explain how the Proposed Action – and specifically the plan amendment – would not lead to further losses of wildlife habitat.

The purpose and need section then states:

However, prairie dogs also remove forage that would otherwise be available for livestock consumption whether it is on National Grassland through livestock grazing permits or on adjoining private lands.

Addressing unwanted colonization on adjacent private lands is one thing, but any claim of a purpose or need to address livestock forage lost to prairie dogs on Thunder Basin National Grassland is simply outrageous. Prairie dogs currently occupy between 1 and 2 percent of Thunder Basin National Grassland; livestock graze almost 100 percent. Prairie dogs are a management indicator species on this Grassland and Forest Service guidance is to increase their numbers. Any discussion of prairie dogs stealing forage from livestock is best left out of this document. In addition, any measurable level of competition between prairie dogs and livestock for forage occurs only when significant percentages of the landscape are occupied by prairie dogs. Please remove this topic as a purpose or need for this Proposed Action.

Plague is also listed in the purpose and need section, and the need to use “all management tools available” is mentioned. We agree that plague must be addressed, but the main management tool – dusting – is not listed anywhere in the Proposed Action. Please include this tool.

Adjusting the 3.63 boundary to better reflect suitable habitat is a reasonable purpose and need. We are concerned with some of the proposed adjustments, however, which we discuss in detail below.

The final paragraph in this section states two “purposes” for this Proposed Action. One is to adjust the 3.63 boundary. The other is to provide a full set of tools available for prairie dog management. This Proposed Action does not provide a full set of tools (i.e., translocation, additional shooting closures, dusting) but rather allows the tool of poison to be used more freely than is currently allowed. There is a good reason that the ability to poison is limited by the 2002 LRMP: to avoid the temptation for managers to cave to pressure from grazing lessees and politicians seeking private gain from public lands at the expense of wildlife. Do not remove this safety net by amending the plan to allow poisoning anywhere on Thunder Basin National Grassland. For example, a prairie dog colony far from private land should not be open to poisoning; it would not meet a “purpose and need” to address unwanted colonization on adjacent private land.

Existing Conditions

The expansion potential map on page 9 of the Proposed Action is useful to help identify the most logical boundary for the 3.63 area. At a minimum, all public land sections that contained prairie dog colonies within 1.5 kilometers of the edge of another colony (as mapped in 2001, prior to plague) should be included in the 3.63 area. Unfortunately, this is not the Proposed Action.

The existing 3.63 area is 53,830 acres in size. All is closed to shooting and poisoning. At an absolute minimum, any adjustment in the 3.63 area should lead to a fully protected area greater than the existing 3.63 area to partially mitigate for an increase in allowable use of poisoning elsewhere, and to improve opportunities for successful ferret recovery.

Proposed Management Categories as Outlined in the Draft Prairie Dog Management Strategy

General comments

The concept of different categories in which management of prairie dogs varies is a good one. This acknowledges the value to wildlife of various patterns and sizes of prairie dog colonies, from large complexes of prairie dog colonies to smaller scattered colonies. We feel, however, that the 4 categories as outlined in the draft strategy are overly complex and would create more of a justification for control for very arbitrary reasons rather than a strategy for maintaining prairie dog colonies in patterns necessary for a variety of associated species.

The Forest Service should not poison prairie dogs simply because an arbitrary number has been exceeded unless a compelling case can be made that it is necessary. As we discuss above, competition for forage with livestock on federal lands should not be considered a compelling reason for poisoning prairie dogs on federal lands. At a minimum, advocates for poisoning need to demonstrate dispersal onto private lands or a situation under which poisoning is allowed under the LRMP. Also, given the heavy indirect impacts of shooting (Pauli 2005), shooting should not be permitted on public lands in Category 1 or 2 areas, and perhaps should only be allowed on colonies targeted for “control.”

Category 1 Management Area

This area should include enough potential habitat to support at least 20,000 acres of prairie dogs, and should include at least 10,000 acres of recent colonies (areas where active colonies have existed over the last few decades) so that there is a good chance of adequate recovery to begin ferret reintroduction in the near future. How many acres of potential habitat and recently occupied habitat are within the proposed new boundary?

The entire area should be off-limits to prairie dog poisoning and shooting, with no upper limits on prairie dog acreage. The proposed 18,000 acre cap is inappropriate and unnecessary. Competition for forage with livestock on federal lands should not be considered a compelling reason for controlling prairie dogs, especially within a ferret recovery area.

Black-footed ferrets should be reintroduced as an essential experimental population (or otherwise be guaranteed protection from all human threats including prairie dog reductions and habitat disturbance). This area could be surrounded by a larger nonessential experimental designation if adjoining landowners do not want to be included within the essential area.

We have been told that the southern “arm” of this area (Rothluetner area, 4,508 acres) will have a cap of 1,500 acres of active prairie dogs. This further complicates the Category 1 area and would further limit ferret recovery. Please do not include caps anywhere within the Category 1 area.

There is no data to back the claim that 18,000 acres is sufficient for a ferret population to persist through a plague event. This appears to be pure speculation. Even if this were true, then 18,000 acres should be a minimum prairie dog population, and the Category 1 area should be managed form more than 18,000 acres rather than capped at 18,000 acres.

The idea of leaving buffer zones around the borders of the Category 1 area ungrazed by livestock is a good one. This would help slow or prevent prairie dog colonization in these boundary areas and help resolve landowner concerns. We strongly urge consideration of ungrazed boundary areas in all alternatives. Research from western South Dakota indicates that a distance of 100 meters is adequate to act as a visual barrier to prairie dogs (Terrall 2006). A distance greater than 100 meters may be necessary in eastern Wyoming due to differences in vegetation height, but certainly a distance much less than 500 meters is adequate to act as a visual barrier.

The Proposed Action proposes to allow poisoning within ½ mile of the boundary. We repeat our request that no poisoning be allowed within the Category 1 area, but we also note that a distance of ½ mile is far greater than necessary to create a visual barrier to prairie dogs. As noted above, a distance of much less than 500 meters should be adequate.

We strongly support translocations to increase the prairie dog population within the Category 1 area, but we ask that it be mandatory rather than merely “considered” if the prairie dog population falls below 10,000 acres. In addition, no poisoning should be allowed anywhere on the National Grassland if prairie dogs fall below 10,000 acres in the Category 1 area; in such circumstances, translocations alone should be used to reduce populations elsewhere on the National Grassland and to increase populations within the Category 1 area.

Category 2 Management Area

We request consideration of two more Category 2 areas, one northwest of the proposed Category 1 area along road 450 (where a scattered complex of small colonies currently exists) and one in north unit of the National Grassland.

Once again, we see no need to set an upper limit of allowable prairie dog acres. The Proposed Action to cap Category 2 areas at 7,000 acres does not make much sense and appears just an excuse to poison due to demands of livestock grazing permittees. We reiterate that forage competition is not a justifiable reason to poison on federal lands.

The 7 kilometer distance was once used for mapping prairie dog complexes for ferret recovery, but this distance is much too far for either successful prairie dog dispersal or successful ferret dispersal. Prairie dog dispersal from one colony to another plummets between 3 and 4.5 kilometers. We suggest using a distance of 3 kilometers to measure biologically meaningful Category 2 complexes.

Category 3 Colonies, Category 4 Colonies, and other colonies

There is no sound reason to poison prairie dog colonies that are located away from private land, regardless of what category they fall into. We recommend deleting the complicated Category 3, 4 and “other” designations and merely address the real issue at hand: the Forest

Service's attempt to implement the "good neighbor" policy. As noted above, a distance of less than 500 meters should be more than adequate to create visual barriers to prairie dogs. Any areas where poisoning is used to remove prairie dogs that cross boundaries onto private lands should be limited to no greater than this distance, and livestock grazing should be removed from poisoned areas by use of portable electric fencing so that vegetation has the best chance to create visual barriers.

Categories 1 and 2 are proposed for clearly identifiable wildlife needs. Why not leave it at that and then amend the LRMP to allow additional control (nonlethal being preferred) only within, say, 100 meters of private lands anywhere on the Grassland? This would meet the purpose and need for implementing the "good neighbor" policy in a more reasonable manner. If a day comes when prairie dogs occupy something greater than the historic rate (10-20 percent of the landscape), then this policy could be reconsidered. That, however, is extremely unlikely.

Control should be limited to cases where colonies cross property boundaries onto adjacent private lands rather than allowed on a "case by case basis" with no enforceable standards. Areas where prairie dogs are removed or killed should be rested from livestock grazing to allow vegetation the greatest opportunity to grow and discourage recolonization.

Other

This Forest Plan Amendment should only apply to the TBGPEA area; this would encourage landowners outside the TBGPEA area to undertake similar efforts.

Black-footed Ferret Reintroduction Area Modification

According to the Federal Register notice, the ferret reintroduction area modification is proposed "to provide a more logical boundary based on topographical and biological barriers for prairie dog colonies and to include lands recently acquired through land exchange." We strongly agree with amending the ferret reintroduction area boundary to include prairie dog and ferret habitat on recently-acquired lands, but we note that caps on allowable prairie dog acres within these areas are inappropriate.

We are not in support of amending the 3.63 area to remove lands based on "topographical and biological barriers" because there is no basis for this claim. The areas proposed for elimination contain plenty of potential and even occupied prairie dog habitat within close enough proximity to other potential or occupied prairie dog habitat that ferrets are likely to disperse to these areas.

The 3.63 area should be increased in size to partially mitigate for the desire to allow increased poisoning elsewhere.

Black-footed Ferret Reintroduction

This Proposed Action is not specific about black-footed ferret reintroduction. The public is being asked to allow dramatic reductions in protection for prairie dogs across Thunder Basin National Grassland for the benefit of a few livestock grazing permittees and local

landowners who dislike prairie dogs, theoretically in return for permittee and local landowner support for reintroduction of the endangered black-footed ferret. But the LRMP already identifies ferret reintroduction as a goal, and under conditions far better for ferrets, prairie dogs and many other species associated with prairie dogs than the conditions outlined in the Proposed Action.

Black-footed ferret reintroduction under a Category of “essential experimental” should be clearly listed as a part of all alternatives.

General Comments for Consideration

Cumulative Impacts Analysis must be sufficient

Thunder Basin National Grassland must consider the cumulative impacts of the Proposed Action’s annual environmental effects. The cumulative impact analysis must list the past, present and reasonably foreseeable future projects within the analysis area that may contribute to cumulative impacts, specifically including plans to poison over multiple years. Moreover, the projects listed and considered must include other federal activities, and other activities on state and private lands.⁴

The cumulative impact analysis must also be of sufficient geographic scope. “[T]he agency’s EA must give a realistic evaluation of the total impacts and cannot isolate a proposed project, viewing it in a vacuum.” Grand Union Trust v. Federal Aviation Administration, 290 F.3d 339, 342 (D.C. Cir. 2002); see also Earth Island Institute v. U.S. Forest Service, 351 F.3d 1291,1307 (9th Cir. 2003) (insufficient analysis of cumulative impacts on timber sale). The Forest Service must therefore conduct its evaluation of the Proposed Action within a broad context, analyzing the cumulative impacts of the Proposed Action along with past prairie dog eradications, as well as any reasonably foreseeable future projects on the Thunder Basin National Grassland. See 40 CFR §1508.25. The purpose of this broad geographical requirement is to ensure that numerous individual projects do not have a substantial combined environmental impact that would be overlooked if each project were considered only individually. Natural Resources Defense Council v. Hodel, 865 F.2d 288, 297-98 (D.C. Cir. 1988). The Forest Service must consider landscape-level prairie dog colony patterns throughout the Thunder Basin National Grassland. cursory or geographically limited discussion of cumulative impacts is insufficient.

The analysis must specifically and adequately address the cumulative impacts on future recovery needs of the black-footed ferret. To maintain all required ferret habitat components, the Forest Service must analyze impacts of historical ferret habitat disturbance. Such analysis includes consideration of population connectivity between geographical areas.

⁴ NEPA regulations state: “Cumulative impact is the impact on the environment which results from the incremental impact of the [federal] action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.” 40 C.F.R. § 1508.7. See, e.g., Muckleshoot Indian Tribe v. U.S. Forest Service, 177 F.3d 800, 810 (9th Cir. 1999); City of Carmel-by-the-Sea, 123 F.3d 1142, 1160 (9th Cir. 1997); Lands Council, Idaho Sporting Congress, Inc. v. Vaught, 198 F.Supp.2d 1211, 1245 (E.D.Wa. 2002); Kettle Range Conservation Group v. United States Forest Service, 148 F.Supp.2d 1107, 1127 (E.D.Wa. 2001).

The Forest Service must thus analyze the potential for loss of ferret habitat and habitat connectivity.

The Proposed Action must not conflict with legislation or policy

Wildlife is one of the five mandatory multiple-use objectives for National Forests and Grasslands under the Multiple Use – Sustained Yield Act. 16 U.S.C. 528(1) (“It is the policy of the Congress that the National Forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes”). National Grasslands must “provide for 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 . . .” 16 U.S.C. § 1604(g)(3)(B). National Grasslands must “preserve and enhance the diversity of plant and animal communities, including endemic and desirable naturalized plant and animal species, including endemic . . . species, . . . so that it is at least as great as that which would be expected in a natural [landscape],” 36 C.F.R. § 219.27(g).

National Forests and Grasslands must “maintain viable populations of existing native and desired non-native vertebrate species . . .” 36 C.F.R. § 219.19. Further, “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.” *Id.* The Forest Service is also required to “provide for adequate fish and wildlife habitat to maintain viable populations of existing native vertebrate species.” 36 C.F.R. § 219.27(a)(6). A viable population is one with “the estimated numbers and distribution of reproductive individuals to insure its continued existence is well distributed in the planning area.” 36 C.F.R. § 219.19.

The National Forest Management Act requires that “Resource plans and permits, contracts, and other instruments for the use and occupancy of National Forest System lands shall be consistent with the land management plans.” 16 U.S.C. 1604(i). The Proposed Action, however, appears to rely largely on the often repeated “good neighbor” concept (eliminating prairie dogs from areas next to private lands) rather than on the overall guidance of the LRMP. It also proposes to amend the LRMP to make dramatically increased poisoning allowable. The Proposed Action violates the clear intent of the existing LRMP. The LRMP contains several standards and guidelines regarding black-tailed prairie dog management. Taken together they require the expansion of prairie dog populations on the National Grassland and specifically within the 3.63 Management Area, while allowing removal under limited circumstances only.

The “good neighbor” concept does not trump the requirement to maintain wildlife habitat and healthy wildlife populations of our National Grasslands. The repeated impact of plague on Thunder Basin National Grassland, as well as the ongoing unregulated shooting of prairie dogs across most of it, makes the “good neighbor” concept especially worrisome.

The LRMP does allow for prairie dog control under very limited circumstances, but this is in the framework of a larger requirement for prairie dog expansion. The LRMP also notes in detail the role that the Thunder Basin National Grassland will play for future reintroduction of the endangered black-footed ferret. This Proposed Action would send Thunder Basin

National Grassland in just the opposite direction. At best it is unfair to focus solely on the “exception” for control while ignoring the greater “rule” for expansion.

Expansion cannot be assumed, especially under the Proposed Action

The Proposed Action assumes prairie dog colonies will expand even with the significant losses that will occur if the Proposed Action is implemented. Prairie dog colonies cannot just be expected to expand. Prairie dog colonies expand and contract and increase and decrease in density based on a number of complex factors that cannot be predicted. As recently as the late 1990s, prairie dog colonies in Conata Basin, South Dakota – the largest complex of black-tailed prairie dogs on federal land anywhere – decreased by thousands of acres due to higher than average levels of precipitation, even with ongoing livestock grazing pressure and full protection from shooting and poisoning. Nothing in the Proposed Action justifies the assumption of continued prairie dog colony expansion. Thus, it is wrong to determine that the poisoning and shooting will not compromise the viability of prairie dog populations on Thunder Basin National Grassland. Given the continuing unregulated shooting across most of the Thunder Basin National Grassland, this Proposed Action for poisoning and especially the presence of plague, expansion certainly cannot be guaranteed.

Greater protection for Thunder Basin’s prairie dogs is required

The black-tailed prairie dog is a keystone species of the Great Plains (see Appendix A). Their colonies provide habitat for a range of other species. Nine prairie wildlife species are prairie dog obligates—dependent on these keystone rodents (Kotliar et al. 1999). Black-tailed prairie dog populations have declined by 98-99 percent throughout their range (65 Federal Register 5476-5488). The Thunder Basin National Grassland provides important habitat for prairie dogs and their associated species.

Black-tailed prairie dogs once were found across the Great Plains from northern Chihuahua, Mexico to southern Saskatchewan, Canada. They occupied 40-80 million acres of this region, living in colonies that were often tens of miles long. Whereas they once covered 10-20 percent of this 400 million acre region, today they occupy much less than one percent. As a result, numerous other species that benefit from prairie dogs have also experienced a tremendous crash in population.

At 6,500 acres of small scattered colonies, prairie dogs occupy just over one percent of Thunder Basin National Grassland. In fact, not one prairie dog complex exists large enough to support a viable population of black-footed ferrets, which would require at least 10,000 acres (CBSG 2004). By definition, therefore, Thunder Basin National Grassland’s prairie dog population is functionally extinct.

This can be reversed. Because of the ongoing widespread persecution on private and state-owned lands, however, a healthy prairie dog population will depend on expanded protections and population increases on Thunder Basin National Grassland. Unfortunately, the Proposed Action would lead to the opposite outcome.

The Proposed Action must advance black-footed ferret recovery

The black-footed ferret is one of the most endangered mammals in North America. The ferret's historic range includes the Thunder Basin National Grassland area. The ferret is believed to be extirpated from the Great Plains region of eastern Wyoming. The LRMP calls for prairie dog increases and ferret recovery in the 3.63 Management Area.

The dramatic decline of the black-footed ferret is due primarily to the loss of the ferret's main food source, prairie dogs. Prairie dogs make up over 90 percent of the ferret diet. Black-footed ferrets rely on prairie dog burrows for breeding dens and refugia; they cannot survive without this keystone rodent (Miller et al. 1996). Black-tailed prairie dog colonies, however, have declined by more than 98 percent. Even more detrimental for the ferret, the small, scattered colonies that are the norm today are not sufficient. Ferrets require very large complexes of prairie dog colonies, but the once common large (>10,000 acres) complexes are almost entirely gone from the Plains.

A minimum viable black-footed ferret population is measured as 120 to 150 breeding adults, a number which would have a 95% chance of persistence over 100 years (Harris et al 1989). Each ferret family requires about 100 acres of prairie dogs (Forrest et al 1985). A viable population of ferrets requires more than 10,000 acres of prairie dog colonies (CBSG 2004).

Ferret survival is dependent on the success of reintroduction programs. The success of ferret reintroduction programs is in turn dependent on conservation and restoration of at least ten large prairie dog complexes. To downlist the ferret from "endangered" to "threatened" the Fish and Wildlife Service's Black-footed Ferret Recovery plan calls for establishing ten self-sustaining sites of black-footed ferrets, a goal it is far from accomplishing.

There is a significant public interest in returning this species to all representative regions of its historic range. It is absolutely essential to protect prairie dog colonies on Thunder Basin National Grassland for there to be any hope of re-establishing black-footed ferret populations. Prairie dog poisoning should not be tolerated; potential ferret habitat is too precious.

Ferrets are susceptible to sylvatic plague, as are prairie dogs. Thus, establishing many reintroduction sites to promote genetic diversity and allow for ferret survival if some reintroduction sites fail in the face of plague is essential.

Reintroducing black-footed ferrets and maintaining a viable ferret population must be explicit objectives in any prairie dog management plan for Thunder Basin National Grassland.

Mitigation efforts to increase prairie dog colonies elsewhere are required

The LRMP includes the following standard:

Any net loss of suitable black-footed ferret habitat as a result of prairie dog poisoning or development of new facilities within colonies shall be replaced within the year. This is based on the amount of suitable habitat available prior to prairie dog dispersal in the year of the poisoning or development.

Standard

The Proposed Action includes removing this standard. This proves that the overall goal of the Proposed Action is not to improve black-footed ferret and prairie dog conservation but rather is to make poisoning easier, with no requirements to mitigate for losses due to poisoning. Rather than sabotage the years of work and public input that led to the 2002 LRMP, the Forest Service should maintain this essential standard.

To be consistent with the LRMP, the Forest Service must offer mitigation strategies for any prairie dog losses proposed. The following methods to increase prairie dog colonies should be included in the Proposed Action:

- closing the National Grassland to prairie dog shooting, especially within the 3.63 management area;
- translocating prairie dogs to start new colonies in desired areas on Thunder Basin, especially to the 3.63 management area;
- immediately dusting prairie dog burrows in key colonies to prevent spread of plague if active plague is found in prairie dog colonies within close proximity.

Defenders of Wildlife is interested in assisting with translocation efforts. We are willing to help find relocators and volunteers, and help finance translocation efforts if necessary. We have also purchased 9 dusters for use by anyone in the event of plague events. The dusters are housed at the black-footed ferret conservation center near Fort Collins, Colorado.

Buffer zones are effective, but must be off-limits to livestock

Tall vegetation restricts prairie dog colonization; poisoning and shooting alone do nothing to prevent recolonization. Eliminating livestock grazing in areas where prairie dogs are not wanted will help create conditions unsuitable for prairie dog colonization. For the best chance of success, we request that it be made mandatory that livestock grazing and other disturbances not occur in any areas where prairie dogs are removed.

Rather than poisoning year after year, it is preferable to discourage prairie dog colonization in small buffer zones next to private lands by allowing the grass to grow tall. Research on the effectiveness of this technique is identified in the Dakota Prairie Grasslands 2005 Report of the Scientific Review Team:

Grazing deferment, or postponed grazing, can create a broader, vegetative barrier. Removing cattle and allowing only light grazing by bison increased the stature of vegetation and led to complete abandonment of a large colony in Oklahoma (Osborn and Allan 1949). Four years of deferred summer grazing in Kansas reduced a 45-ha colony to 5 ha (Snell and Hlavachick 1980).

When the pasture was restocked, cattle congregated near the prairie dogs and the colony expanded, but a single summer of deferred grazing with good growing conditions reduced the area back to 5 ha (Snell 1985). Although prairie dogs on ungrazed sites in South Dakota increased 4 percent for each of 10 years, the rate was 20 percent per year on grazed sites and burrow

density increased twice as fast (Uresk et al. 1982). Cable and Timm (1988) controlled colony expansion with two years of summer deferment in shortgrass and mixed prairie. Colony area in deferred pastures did not change the first year because drought limited vegetative production, but grazed colonies increased 25 percent the second year and those in deferred pastures decreased 37 percent. The deferments also reduced prairie dog birth rates and population growth. In this case, growing-season deferment was sufficient for effective control.

We are pleased to see that vegetative buffers are under consideration. Recent unpublished research indicates that only short distances may be required for success, possibly as little as 100 meters, depending on the vegetative potential of the individual site (Terrall 2006). We recommend trying varying depths of ungrazed buffers, from 100 meters to 500 meters, as part of an adaptive management process. With the use of portable electric fence to keep out livestock, buffer depths can be changed easily depending on outcomes over time. In this way, optimum depths can be found over time for the specific conditions in each location.

Conclusion

To restate our major requests, we request that you prepare an EIS (rather than an EA), remove caps from prairie dog acres within the Category 1 area, include mandatory active management actions to increase prairie dog acres (such as translocation, dusting for plague, and shooting closures), and limit poisoning to 500 meters from private lands. Finally, some of our organizations are very interested in assisting in any way we can with prairie dog translocation activities to increase colonies within the ferret recovery area.

Thank you for considering our comments.

Respectfully Submitted,



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Appendix A: Ecological role of the black-tailed prairie dog

It is hard to overstate the importance of prairie dogs to the ecology of the short and mixed-grass prairie. The role of prairie dogs as a keystone species is now well-established scientifically (Kotliar et al. 1999; Kotliar 2000; Miller et al. 2000). Prairie dogs probably qualify under multiple categories of keystone species—as prey and for their modification of habitat (Mills et al. 1993). The short and mixed-grass prairie areas that prairie dogs inhabit should probably be considered ecosystems unto themselves.

Keystone species enrich ecosystem function uniquely and significantly through their activities, and their impact is larger than predicted relative to their biomass (Paine 1980; Terborgh 1988; Mills et al. 1993; Power et al. 1996; Kotliar et al. 1999; Miller et al. 1998/1999). Kotliar (2000: 1715). Prairie dogs are functionally unique; they perform roles within their ecosystem not performed by other species or processes. The scientific literature is growing that supports the argument that prairie dogs fulfill all the requirements of keystone species (Coppock et al. 1983a, b; Detling and Whicker 1988; Whicker and Detling 1988a, b; 1993; Reading et al. 1989; Society for Conservation Biology 1994; Kotliar et al. 1997; 1999; Wuerthner 1997; American Society of Mammalogists 1998; Kotliar 2000, Miller et al. 2000).

Prairie dog activities and the changes made by these activities create a unique ecological system known as the “prairie dog ecosystem” (Clark et al. 1989; Miller et al. 1996). Over 200 vertebrate species have been observed on prairie dog colonies (Koford 1958; Tyler 1968; Campbell and Clark 1981, Clark et al. 1982; O’Meilia et al. 1982; Agnew et al. 1986; Reading et al. 1989; Sharps and Uresk 1990; Mellink and Madrigal 1993; Hoogland 1995; Barko 1996; Manzano 1996; Ceballos and Pacheco 1997; Ceballos et al. 1999; Kotliar et al. 1999). Some of these species appear to depend on prairie dog colonies for their survival and many appear to benefit, at least seasonally or opportunistically from their existence (Reading et al. 1989; Hoogland 1995; Manzano 1996; Ceballos et al. 1999; Kotliar et al. 1999).

Prairie dogs and other animals inhabiting prairie dog colonies represent a rich prey patch for a large number of predators (Reading et al. 1989; Miller et al. 1996; Plumpton and Anderson 1997; Berry et al. 1998; Kotliar et al. 1999). A variety of predators including prairie rattlesnakes (*Crotalus viridis*), golden eagles (*Aquila chrysaetos*), great horned owls (*Bubo virginianus*), weasels (*Mustela frenata*), bobcats (*Lynx rufus*), coyotes (*Canis latrans*), and others prey on prairie dogs and small mammals that have a higher abundance on prairie dog colonies (Agnew et al. 1986). Some predators, especially black-footed ferrets (*Mustela nigripes*), are completely dependent on prairie dogs (Clark 1989; Miller et al. 1996). Other species, such as badgers (*Taxidea taxus*), swift foxes (*Vulpes velox*), and ferruginous hawks (*Buteo regalis*), benefit substantially from the presence of prairie dogs as prey (Uresk and Sharps 1986; Sharps and Uresk 1990; Allison et al. 1995; Plumpton and Andersen 1997, 1998; Berry et al. 1998; Goodrich and Buskirk 1998).

The benefits of prairie dogs extend well beyond simply being food for predators (Reading et al. 1989; Ceballos et al. 1999; Kotliar et al. 1999). Prairie dogs also substantially alter their environment. Since prairie dogs excavate more burrows than they regularly utilize⁵, they

⁵Despite the common belief that there are several prairie dogs per burrow entrance, there are actually several burrow entrances per prairie dog (Biggins et al. 1993; Hoogland 1995).

create hibernacula, dens, and nests for many animals, such as black-footed ferrets, swift fox, badgers, cottontails (*Sylvilagus* spp.), burrowing owls, shrews, other rodents, and several species of reptiles and amphibians (Reading et al. 1989; Sharps and Uresk 1990; Plumpton and Lutz 1993; Fitzgerald et al. 1994; Desmond et al. 1995; Kretzer and Cully 2001). These species and more also use the burrows as refugia from predators or temperature extremes. As a result, researchers have found that desert cottontails (*S. audonbonii*), thirteen-lined ground squirrels (*Spermophilus tridecemlineatus*), and northern grasshopper mice (*Onychomys leucogaster*) exist in higher numbers on prairie dog colonies than in surrounding grasslands (O'Meilia et al. 1982; Agnew et al. 1988; Dano 1952 in Stapp 1998). Similarly, studies in Mexico found higher rodent species richness, density, and diversity, and higher avian species richness on prairie dog colonies compared with surrounding grasslands in Chihuahua, Mexico (Manzano 1996; Ceballos and Pacheco 1997; Ceballos, Pacheco, and List 1999). Most of the research to date has focused on birds and mammals with considerably less research on reptiles and amphibians (but see Kretzer and Cully 2001). Similarly, little is known about prairie invertebrates, yet the burrows in a prairie dog colony should offer habitat advantages to invertebrates as well.

Prairie dogs also have a large effect on vegetation structure, productivity, nutrient cycling, and ecosystem processes (Coppock et al. 1983; Detling and Whicker 1988; Whicker and Detling 1988a, b; 1993; Weltzin et al. 1997a; Stapp 1998). The activities of prairie dogs, especially their grazing and clipping of tall vegetation, result in changes in plant composition (Bonham and Lerwick 1976; Coppock et al. 1983, Detling and Whicker 1988; Whicker and Detling 1988a, b; 1993, Weltzin et al. 1997a; Detling 1998). In general, the vegetation on prairie dog colonies is characterized by lower biomass and a greater preponderance of annual forbs and short grasses compared to tall grasses and shrubs, but is higher in nitrogen content than vegetation from surrounding areas (Bonham and Lerwick 1976; Coppock et al. 1983, Weltzin et al. 1997a; Detling 1998). Prairie dogs negatively impact some plant species, reducing the prevalence and controlling the spread of taller grasses and several shrubs, such as mesquite (*Prosopis* spp.), sagebrush (*Artemisia* spp.), and longleaf jointfir (*Ephedra trifurca*) (Bonham and Lerwick 1976; Coppock et al. 1983; List 1997; Weltzin et al. 1997b). Ironically, prairie dogs are poisoned for livestock interests, but these shrubs reduce grass available for cattle, and mesquite makes roundups more difficult (Miller 1991).

Prairie dog burrowing activities modify ecosystem processes such as water, mineral and nutrient cycling. Prairie dogs turn over approximately 225 kg of soil per burrow system, which translates to several tons of soil per hectare (Whicker and Detling 1993). By mixing in nutrient-rich urine and manure, prairie dog digging can change soil composition, chemistry, and microclimate, facilitate below-ground herbivory, increase porosity of soil to permit deeper penetration of precipitation, and increase the incorporation of organic materials into the soil (Ingham and Detling 1984; Whicker and Detling 1988 a, b; Munn 1993; Outwater 1996). As a result, prairie dog colonies support higher numbers of nematodes and higher levels of soil nitrogen (Ingham and Detling 1984, Detling 1998). All of these processes contribute to aboveground plants with a higher nutritional content, greater digestibility, and a larger live plant to dead plant ratio, creating favorable feeding habitat for other herbivores (Whicker and Detling 1993). Indeed, pronghorn and bison preferentially graze on prairie dog colonies (Coppock et al. 1983; Krueger 1986; Detling and Whicker 1993, Detling 1998). Foraging models predict that bison can gain weight faster by grazing on pastures with prairie

dog colonies than on grasslands without prairie dogs (Vanderhyde 1985 in Whicker and Detling 1993).

Kotliar et al. (1999:177) concluded that collectively these functions are large, not wholly duplicated by other species (either in form or extent), and that the loss of prairie dogs would lead to “substantial erosion of biological diversity and landscape heterogeneity across the prairie.” They concluded that the prairie dog therefore fulfills the definition of keystone species (see also Kotliar 2000). We agree (see Stapp 1998 for an alternative view). The structure, form, and function of prairie dog colonies provide a keystone role in the prairie, and the role is large. Despite the difficulty in quantifying a role, we contend that existing evidence indicates prairie dogs (and other associated species) provide important prey to predators, and their grazing and burrowing activities modifies the environment in a manner beneficially used by other prairie organisms (Whicker and Detling 1993; Kotliar et al. 1999). Most importantly, those grazing and burrowing activities affect vegetative composition, vegetation quantity and quality, productivity, nutrient cycling, and soil quality (Bonham and Lerwick 1976; Coppock et al. 1983; Detling and Whicker 1988; Whicker and Detling 1988 a, b; 1993). We suggest that these data should guide our policy decisions until future data prove otherwise (i.e., the ‘Precautionary Principle’; Johnston et al. 1999; Foster et al. 2000).

Appendix B: Impacts of prairie dog shooting

An environmentally harmful recreational activity that should be prohibited is prairie dog shooting. Prairie dog shooting is legal on the Thunder Basin National Grassland.

The environmental impacts of prairie dog shooting are several. Prairie dog shooting significantly reduces black-tailed prairie dog populations and population densities (USFWS 1998a, b). Shooting also alters prairie dog behavior. For instance, Irby and Vosburgh (1994) found that even light shooting has a significant effect on prairie dog behavior, with 42% of prairie dogs retreating to the burrows on a lightly shot colony, contrasted with a 22% retreat rate on unshot colonies, and 55% retreat rate on heavily shot colonies. Further, Irby and Vosburgh (1994) found that prairie dog shooters prefer higher densities of prairie dogs. This causes shooters to spread the pressure of their activity depending on population density, causing uniformity in prairie dog populations across colonies. Biologically, such uniformity is destabilizing to prairie dog populations.

Studies also report that shooting may decrease colony expansion rates (Miller et al. 1993; Reading et al. 1989). One study revealed that a colony in Montana had a 15% annual expansion rate when prairie dogs were not hunted, contrasted with a 3% expansion rate when they were (Miller et al. 1993). This dramatic decrease in rates of expansion represents decreased migration, which constitutes human interference with prairie dog dispersal, which is an integral population dynamic in prairie dogs.

Even without shooting pressure, there is a low survival rate of dispersing males (Garrett and Franklin 1981). In addition, prairie dog dispersal takes place in late spring (Knowles 1985; Garrett and Franklin 1981), which is one of the most popular times of the year for recreational prairie dog shooting. The negative impacts of shooting on prairie dog migration may therefore be considerable.

Shooting impacts may be unpredictable and colony-specific. Knowles and Vosburgh (2001: 7) compared black-tailed prairie dog shooting studies conducted in Montana, and concluded, "Shooting can impact prairie dog populations and ...it is just a matter of the number of hours of shooting effort expended on a colony in relation to the size of the colony that determines the level of impact."

Individual shooters can seriously impact prairie dog colonies. Randall (1976) chronicled the activity of three individual shooters who traveled from Minnesota to shoot white-tailed prairie dogs in Wyoming. In one week they concentrated on seven towns and tallied 1023 kills. This was in 1976; prairie dog shooters are much better equipped today. Jerry Godbey of the U.S. Geological Survey Biological Resources Discipline reported that when he surveyed white-tailed prairie dog towns in Colorado, Utah, and Wyoming in 1997-1998, he found spent shells or dead prairie dogs at "virtually every site" (Jerry Godbey, USGS, personal communication to Erin Robertson, 3 August 2001). Mr. Godbey said that he met one shooter near Delta, Colorado with three rifles who said that he shot white-tailed prairie dogs at least four times a week. This shooter estimated that he used 10,000 rounds per year, with an estimated 95% kill rate. Those figures translate to take of 9500 prairie dogs annually by a single person. Keffer et al. (2000) found that after they shot 22% of the black-tailed prairie dogs on one colony as part of a controlled shooting study, 69% (212 individuals) of the

remaining prairie dogs left the colony. Small colonies may be particularly vulnerable to negative impacts from shooting (Knowles 2002, citing J. Capodice, pers. comm.). Entire colonies can potentially be eliminated from shooting pressure (Knowles 1988; Livieri 1999).

In addition, the threat that shooting poses extends to prairie dog associated species. For example, prairie dog shooting causes a reduction in the prey base. This may affect a broad range of avian and mammalian predators that prey on prairie dogs. The danger here is apparent:

Viable populations of associated species cannot be expected at low prairie dog densities. Based on our observations of other prairie dog complexes in Montana, prairie dog complexes need to be broadly distributed and with relatively high occupancy to assure minimal viable populations of associated species (Knowles and Knowles 1994).

Low population densities result from shooting and will therefore work to the detriment of mammalian and avian prairie dog predators. In addition, there is evidence to suggest that prairie dog shoots result in the harming or killing of non-target species, such as the burrowing owl, ferruginous hawk, and mountain plover, as first-hand accounts indicate that these shoots harm and kill a variety of wildlife species other than prairie dogs (R. Reading, Denver Zoological Foundation and University of Denver, pers. comm. 2004).

Relatedly, there is growing concern about the effects that spent shells may have on prairie dog predators. A preliminary study on the effects of prairie dog shooting on raptors (Wyoming Cooperative Fish and Wildlife Research Unit 2001) showed that black-tailed prairie dog towns on Thunder Basin National Grassland that were shot were visited by raptors an average of 2.42 times per hour, while towns that were not shot were visited an average of 0.5 times per hour. Blood samples taken from burrowing owls on a town where shooting occurred showed elevated lead levels. Knowles and Vosburgh (2001: 15-16) also raise this issue:

Fragments of lead ingested by raptors when scavenging shot prairie dog carcasses have the potential to kill or severely disable raptors. Burrowing owls are reported to scavenge poisoned prairie dogs (Butts 1973) and would also be expected to feed on prairie dogs killed by recreational shooting. Ferruginous hawks and golden eagles are 2 other raptors known to scavenge on dead prairie dogs. Shooting in some areas has been sufficiently intense during the past decade to literally put millions of pieces of lead on the ground. It is unknown if passerine birds are picking up pieces of this toxic heavy metal. Mortalities in morning [sic] doves have been noted with ingestion of only 2 lead pellets. Ingestion of lead is a known significant problem for birds (Lewis and Ledger 1968 and Wiemyer et al. 1988).

On his Moreno Valley (NM) study site, Cully (1986: 2) noted that, "One of the major sources of recreation for the residents of the area is shooting prairie dogs, a practice that may contribute to the attraction of raptors to the valley." He suspected many of the area raptors were primarily subsisting on shot prairie dogs. To the extent shooters were using lead shot – which is extremely likely – those raptors were being exposed to lead poisoning.

While some of the above studies pertain to white-tailed and Gunnison's prairie dogs, the cited biological impacts - reduced populations and population densities, altered behavior, potential colony extirpation, and impacts on associated wildlife – would reasonably extend to black-tailed prairie dogs.