Petition to Classify 3 Reintroduced Black-footed Ferret (*Mustela nigripes*) Populations as Endangered

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I. Introduction

This petition is submitted pursuant to Section 553 of the Administrative Procedure Act ("APA") (5 U.S.C. § 553(e)). WildEarth Guardians, Biodiversity Conservation, and Center for Native Ecosystems ("Guardians et al.") request that the Department of Interior and the U.S. Fish and Wildlife Service ("FWS" or "Service") re-classify 3 black-footed ferret (*Mustela nigripes*) ("BFF" or "ferret") populations located on public lands, which were reintroduced to the wild, from Nonessential Experimental to Endangered under the Endangered Species Act ("ESA"). These BFF populations include Shirley Basin in Wyoming, Conata Basin in South Dakota, and Aubrey Valley in Arizona.

We demonstrate that these 3 populations are essential to recovering black-footed ferrets in the wild. The FWS considers the Aubrey Valley, Conata Basin, and Shirley Basin populations the only successful reintroduced populations that have occurred on public land (FWS 2008).[1] However, these populations all face continued threats on these public lands including habitat destruction, loss of prey (prairie dogs), shooting and trapping, disease, loss due to scientific experimentation, inadequate regulations, and genetic isolation, among others.

The black-footed ferret is one of the most endangered mammals in North America, primarily due to the steep decline in the abundance of prairie dogs and prairie dog colonies over the last 150 years. Ferrets use prairie dog colonies, exclusively, for their habitat. Prairie dogs make up close to 100% of the ferret diet. BFFs use prairie dog burrows for shelter and breeding. BFF historic range included most portions of the black-tailed (*Cynomys ludovicianus*), Gunnison's (*C. gunnisoni*), and white-tailed (*C. leucurus*) prairie dog ranges. In 1981, the last known remnant BFF population was discovered white-tailed prairie dog habitat in Wyoming. When that population crashed, government officials removed the last 18 from the wild to begin a captive breeding program and thereby extirpated the wild population.

BFFs are technically protected as Endangered throughout their range under the ESA, including ferrets in captivity. By 2009, the FWS had facilitated 18 reintroductions of black-footed ferrets at various sites in the species' historic range. Yet, only captive populations receive the full protection Endangered listing affords. All wild ferrets receive less protection. No reintroduced, wild populations receive federal protection as Endangered because they exist only under ESA Section 10 permits that allow exemptions from safeguards required by the Endangered status. Only 3 populations are protected as Threatened, as mandated by law, because they exist in national parks or refuges. These 3 populations include ferrets at Badlands National Park, UL Bend National Wildlife Refuge, and Wind Cave National Park.

As stated above, the FWS has authorized all BFF reintroductions under ESA Section 10 rules and permits that exempt reintroduced populations from certain ESA provisions specified by the individual rules and permits. At 11 of these sites, the ferrets are designated as Nonessential Experimental under Section 10(j) of the ESA. They are granted only Proposed for listing or Candidate status. Under Section 10(a)(1)(A), ferrets at the other 6 U.S. sites are exempt from specific provisions of the ESA under special permits granted by the FWS. A

[1] The FWS also considers the ferret reintroduction on the Cheyenne River Indian Reservation within South Dakota a success. We are not seeking reclassification to Endangered for this population because the reintroduction does not include federal or other public lands within the United States. We recognize the importance of this population to black-footed ferret recovery. Additionally, the FWS has facilitated 3 reintroductions onto private land since 2007. The Service considers these too recent to judge their success.

reintroduction site near Janos, Mexico has no U.S. Endangered Species Act status, although the FWS provides BFFs for releases to the area. Sustaining most of these reintroduced populations requires continual augmentation with captive ferrets.

FWS policies regarding black-footed ferrets and prairie dogs fail to protect ferret habitat. This petition focuses on how the ESA Section 10 designations are hindering BFF recovery. The re-designation of the Shirley Basin, Conata Basin, and Aubrey Valley ferret populations from Nonessential Experimental to Endangered is a small but important step toward better protecting 3 key public land ferret recovery areas in the wild. This action is warranted and indeed critical for several reasons:

- The continued survival of the Shirley Basin, Conata Basin, and Aubrey Valley ferrets is not guaranteed without the additional safeguards that come with an Endangered listing.
- These 3 reintroduced populations are essential to BFF survival in the wild. Without these 3 populations and absent the continual augmentation of ferrets to several other reintroduction sites, there would be no viable ferret populations in the wild.
- ESA Section 10 designations cede rightful power from the FWS to other government agencies and private actors that do not or may not prioritize ferret or prairie dog recovery and protection.
- The FWS is failing to meet its Black-footed Ferret Recovery Plan goals, including maintaining at least 10 self-sustaining wild populations of 1,500 animals.
- The Service's policy of granting only the captive ferret population full protection as an Endangered species is not sufficient to achieve self-sustaining ferret populations by conserving their ecosystems in the wild—a mandate of the ESA (16 U.S.C. § 1531(b)) and the Act's implementing regulations (50 C.F.R. § 17.80(b)).
- Granting only the captive population full Endangered status and exempting reintroduced BFFs from full protection is antithetical to the purpose of the ESA.
- The ESA Section 10 designations deliberately isolate BFF populations, which prevents migration, hinders population expansion, and may cause adverse genetic impacts.
- Each of the 3 populations provides unique attributes that will better promote ferret recovery and viability in the wild if granted Endangered status.
- Each of the 3 populations face unique and immediate threats that undermine their ability to remain viable populations in the future.

Classifying these 3 populations of the Endangered ferret as Endangered could serve as a model tool for endangered species recovery. The re-designations would not curtail important research on these sites that might include improving translocation methods or testing vaccines to prevent disease. The classification of ferrets on these 3 sites to Endangered would occur only on public land, which would minimize effects to private landowners.

II. Petitioners

A. WildEarth Guardians

WildEarth Guardians works to protect and restore wildlife, wild places, and wild rivers in the American West. WildEarth Guardians has approximately 10,000 members and supporters. WildEarth Guardians' staff and members work to protect, and recreate on and enjoy, the prairie ecosystems on public lands, including Shirley Basin, Conata Basin, and Aubrey Valley. WildEarth Guardians is keenly interested in advancing the protection and recovery of black-footed ferrets. Guardians' staff and members have participated in black-footed ferret reintroductions and ferret surveys. These people plan to participate in these activities in the

future. We hope that our work helps allow future generations of people to experience thriving BFF populations in the wild. We also work to conserve black-tailed, Gunnison's, and white-tailed prairie dogs and the ecosystems these keystone, strongly interactive species create and sustain. Poisoning, shooting, and other forms of lethal control will adversely impact the prairie dogs, as well as associated wildlife, especially the ferret. WildEarth Guardians petitioned the FWS to list the Gunnison's prairie dog and black-tailed prairie dog under the ESA. We served as co-petitioners to list the white-tailed prairie dog under the ESA. We work to ensure that federal agencies - such as the U.S. Forest Service and Bureau of Land Management - do not permit or conduct activities that further imperil this imperiled species.

B. Biodiversity Conservation Alliance

Biodiversity Conservation Alliance ("BCA") is a 501(c)(3) nonprofit conservation organization dedicated to protecting wildlife and wild places in Wyoming and surrounding states. BCA has long advocated for the protection and reintroduction of black-footed ferrets, seeking a ferret Area of Critical Environmental Concern for the Shirley Basin ferret recovery area, advocating for the closure of BLM lands in the Shirley basin to a prairie-dog shooting contest, protesting BLM oil and gas leases that threaten ferret habitat, advocating for the avoidance of ferret recovery areas by electrical transmission projects, advocated for the protection of prairie dogs in the context of Conata Basin land-use planning, and advocating for protection of the Thunder Basin ferret reintroduction site in both the LRMP process and in the context of Forest Service proposals to poison white-tailed prairie dogs in this area. BCA staff have participated in black-footed ferret reintroductions in the Shirley Basin, have toured the black-footed ferret facility in northern Colorado, and have contributed $60,000 to black-footed ferret recovery programs in the Shirley Basin and Thunder Basin. We also work to protect both black-tailed and white-tailed prairie dogs, obligate prey species needed to support ferret populations, and have been co-petitioners to list the white-tailed prairie dog under the Endangered Species Act. BCA members value the integrity of entire ecosystems, with all of their interdependent parts intact, and have a long history of supporting the return of the black-footed ferret to their native range.

C. Center for Native Ecosystems

Center for Native Ecosystems works to conserve and recover native species and ecosystems of the Greater Southern Rockies using the best available science. We recognize the important ecological role that keystone species like prairie dogs play in maintaining biodiversity, and we believe that the loss of a carnivore like the black-footed ferret should serve as a serious warning regarding the poor health of our prairie and sagebrush ecosystems. We are the lead petitioner seeking Endangered Species Act protection for the white-tailed prairie dog, and a co-petitioner requesting protection for black-tailed and Gunnison's prairie dogs as well. We have a long-standing interest in prairie dog and ferret management. For example, we have nominated large white-tailed prairie dog complexes including the Shirley Basin/Medicine Bow Complex for designation as Areas of Environmental Concern, and we have commented extensively on the Bureau of Land Management's management of Shirley Basin and other black-footed ferret reintroduction areas. We were a co-plaintiff on litigation attempting to prohibit poisoning of black-tailed prairie dogs on public lands within the Conata Basin ferret population. We attended Colorado's first black-footed ferret reintroduction at the invitation of the FWS and its cooperators, and we have successfully appealed BLM decisions to lease black-footed ferret habitat for oil and gas drilling. We have actively participated in prairie dog conservation efforts undertaken by the Western Association of Fish and Wildlife Agencies and continue to be involved in stakeholder processes convened by the states to conserve prairie dogs and associated species like the black-footed ferret.

III. Request and Justification

Guardians et al. hereby petition the FWS to designate the Shirley Basin, Conata Basin, and Aubrey Valley black-footed ferret populations as Endangered under the ESA in accordance with the APA. This would require FWS to terminate the 3 rules that currently govern ferret recovery areas in southeastern Wyoming (56 Federal Register 41473-41489, August 21, 1991); southwestern South Dakota (59 Federal Register 42682-42694, August 18, 1994); and Aubrey Valley, Arizona (61 Federal Register 11320-11336, March 20, 1996) and issue new rules that codify the re-designations. This petition is submitted pursuant to Section 553 of the APA (5 U.S.C. § 553(e)).

Black-footed ferrets were one of the first species the U.S. government recognized as being "threatened with extinction" (32 Federal Register 4001, March 11, 1967) under the Endangered Species Preservation Act of 1967 (16 U.S.C. 668). The species was listed as Endangered throughout its range (35 Federal Register 8491-8498, June 2, 1970) under the Endangered Species Conservation Act of 1969 (16 U.S.C. 668). The government protected black-footed ferrets as Endangered across their range (38 Federal Register June 4, 1974) under the Endangered Species Act of 1973 (16 U.S.C. § 1531), the law currently governing Endangered and Threatened species management.

The most significant historic cause of ferret imperilment and current threat to ferret survival is the loss of their primary food source and habitat: prairie dogs and prairie dog colonies (FWS 1988; 2006[2]; 2008). In aggregate, black-tailed, Gunnison's, and white-tailed prairie dogs have lost 97% of their formerly occupied areas across their ranges (FWS 2006; 2008). Each BFF population needs a very large and dense prairie dog colony complex to maintain viability. The definition of a prairie dog complex is a group of prairie dog colonies where colony borders are at or less than 1.5 km (0.9 mile) from each other (CBSG 2004). A 2004 report published by the Conservation Breeding Specialist Group recommended that 4,000 ha (10,000 ac) be the target size for black-tailed prairie dog complexes to support self-sustaining ferret populations (CBSG 2004). Because black-tailed prairie dog colonies tend have a higher prairie dog and burrow density than Gunnison's and white-tailed prairie dogs, the report stated that larger complexes of these 2 species are needed to sustain ferrets (*ibid*.). Biggins et al. suggested prairie dog densities on complexes should be between 18-42 prairie dogs per 1 ha (2.5 ac). An adult ferret needs to eat over 100 prairie dogs annually.

The black-footed ferret has come perilously close to extinction. In 1964, a small population was found in Mellette County, South Dakota (Lockhart et al. 2006). At the time, researchers believed this was the last wild population. The government captured some of these ferrets to test the viability of captive breeding. Researchers had 9 ferrets at the FWS Patuxent Wildlife Research Center, now managed by the U.S. Geological Survey. Though the animals produced 2 litters, none of the young survived beyond a week. Four adults died from distemper due to vaccine testing. The captive animals died out, and the Mellette population was declared extinct in 1974. Ferrets were believed to be lost forever until a dog killed a BFF in 1981 near Meeteetse, Wyoming. Researchers identified 130 ferrets there in 1984, the highest count. When plague and distemper killed off most of these wild ferrets, government agents captured the last

[2] The FWS (2006) citation references the *Draft Recovery Plan for the Black-footed Ferret (Mustela nigripes)*. Though this is a draft document, it includes many key facts relevant to this petition. The FWS put no limitations on citing this document and included a recommended bibliographical citation in the document. Therefore, we consider the draft recovery plan a legitimate and authoritative information source for this petition.

remaining 18 animals during 1986 and 1987 to start a captive breeding program. The Wyoming Game and Fish Department managed the ferret program at the Sybille Research Facility in Wyoming. In 1991, Wyoming, in collaboration with the FWS and Bureau of Land Management (BLM), reintroduced the first captive BFFs to the Shirley Basin area of Carbon County, Wyoming.

There are 18 small, reintroduced BFF populations scattered across tiny pockets of their historic range—17 in the U.S. and 1 in Mexico. Federal and state agencies, Native American tribes, and private entities established these 18 populations from subsequent generations of the captive population. Captive BFFs receive full protection as Endangered species. The FWS considers only the captive population to be essential to black-footed ferret survival (See, for example, the Southeastern Wyoming 10(j) rule that governs the Shirley Basin reintroduction: 56 Federal Register 41473, August 21, 1991; the Southwestern South Dakota 10(j) rule for the Conata Basin reintroduction: 59 Federal Register 42682-42694, August 18, 2004; and the Aubrey Valley 10(j) rule: 61 Federal Register 11320-11336, March 20, 1996). However, this reasoning is in error because ferrets in captivity do not contribute to ferret survival in the wild until they are reintroduced into the wild.

None of the reintroduced, wild ferret groups receive protection as Endangered species. The FWS has overseen the reintroduction of each population under ESA Section 10 designations. At 11 reintroduction sites, the ferrets are designated as Nonessential Experimental under Section 10(j) of the ESA and therefore treated as if they were only Proposed for listing or Candidate species, except in national wildlife refuges or national parks where they are treated as if they were Threatened (See Figure 1). The Shirley Basin, Conata Basin, and Aubrey Valley recovery areas are all designated 10(j) Nonessential Experimental. Under Section 10(a)(1)(A), ferrets at the other 6 U.S. sites are exempt from provisions of the ESA under special permits granted by the FWS (See Figure 2). Again, the Mexican reintroduction is exempt from ESA status or permitting. Both designations allow for incidental take of the animals, including their habitat. This is also true of the 3 populations treated as Threatened (at Badlands National Park, UL Bend National Wildlife Refuge, and Wind Cave National Park).

Figure 1. Black-footed Ferret 10(j) Reintroduction Sites and Their Rules

LOCATION	RULE
Shirley Basin, WY	Establishment of a Nonessential Experimental Population of Black-Footed Ferrets In Southeastern Wyoming; 56 Federal Register 41473, August 21, 1991
Badlands National Park, SD	Establishment of a Nonessential Experimental Population of Black-Footed Ferrets In Southwestern South Dakota; 59 Federal Register 42682, August 18, 1994
UL Bend NWR, MT	Establishment of a Nonessential Experimental Population of Black-Footed Ferrets in North-Central Montana; 59 Federal Register 42696, August 18, 1994
BLM "40 Complex", MT	Establishment of a Nonessential Experimental Population of Black-Footed Ferrets in North-Central Montana; 59 Federal Register 42696, August 18, 1994
Conata Basin, SD	Establishment of a Nonessential Experimental Population of Black-Footed Ferrets In Southwestern South Dakota; 59 Federal Register 42682, August 18, 1994
Fort Belknap Indian Res, MT	Establishment of a Nonessential Experimental Population of Black-Footed Ferrets in North-Central Montana; 59 Federal Register 42696, August 18, 1994
Aubrey Valley, AZ	Establishment of a Nonessential Experimental Population of Black-Footed Ferrets in Aubrey Valley, Arizona; 61 Federal Register 11320, March 20, 1996
Coyote Basin, UT	Establishment of a Nonessential Experimental Population of Black-footed Ferrets in Northwestern Colorado and Northeastern Utah; 63 Federal Register 52823, October 1, 1998
Wolf Creek, CO	Establishment of a Nonessential Experimental Population of Black-footed Ferrets in Northwestern Colorado and Northeastern Utah; 63 Federal Register 52823, October 1, 1998
Cheyenne River Indian Res, SD	Establishment of a Nonessential Experimental Population of Black-Footed Ferrets in North-Central South Dakota; 65 FR 60879, October 13, 2000
Rosebud Indian Res, SD	Establishment of Nonessential Experimental Population Status and Reintroduction of Black- Footed Ferrets in South-Central South Dakota; 68 Federal Register 26498, May 16, 2003

Figure 2. U.S. Black-footed Ferret 10(a)(1)(A) Reintroduction Sites and Governing Permits

LOCATION	Permittee	Permit Number
Lower Brule Indian Res, SD	Lower Brule Sioux Tribe	Endangered Species: TE131398-0
Wind Cave National Park, SD	National Park Service	Endangered Species: TE145090-0
Espee Ranch, AZ	AZ Game and Fish Department	Endangered Species: TE163125-0
Logan County, KS	U.S. Fish and Wildlife Service	Endangered Species: TE139523-1
N. Cheyenne Indian Res, MT	Northern Cheyenne National Resources Department	Endangered Species: TE167158-0
Vermejo Ranch, NM	Turner Endangered Species Fund	Endangered Species: TE051139-1

The failure to protect any wild BFF population as Endangered, or even Essential, violates the ESA's mandate to "provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, [and] to provide a program for the conservation of such endangered and threatened species" (16 U.S.C. § 1531(b)). To "conserve" means "to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to [the ESA] are no longer necessary" (*Id.* § 1532(3)). Each Section 10(j) rule or 10(a)(1)(A) permit legally and empirically obstructs ferret recovery and undermines the conservation of the species' ecosystems—prairie dog colonies, upon which BFFs depend. The use of Section 10 designations for each reintroduction site harms ferrets and their ecosystems in the following ways:

- The Section 10 designations all authorize incidental take of ferrets. Permitted take of the animals can hinder population growth and territorial expansion.
- Ferrets that migrate out of specified 10(j) rule or 10(a)(1)(A) permit geographic boundaries can be relocated back into the boundaries or taken back into captivity for the breeding program. This curtails population growth, prevents ferret expansion across their historic habitat and range, and limits genetic diversity by precluding natural migration.
- The Section 10(j) Nonessential category precludes the designation of critical habitat for the species. This allows total destruction of prairie dog colonies that are unoccupied by ferrets, diminishes protection of prairie dog colonies in areas occupied by ferrets, and prevents expansion of ferret populations. It even allows for the removal of ferrets and subsequent destruction of prairie dog colonies formerly occupied by ferrets.
- All current BFF 10(j) designations explicitly and 10(a)(1)(A) designations implicitly consider reintroduced ferret populations as Nonessential to the species' survival. The ESA is meant to protect and recover species and their ecosystems ***in the wild***. In fact on the key purposes of the Act is to "provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved …" (16 U.S.C. § 1531(b)). Wild, reintroduced ferrets must be considered essential to the species' survival or the species will never be recovered to the point where it merits delisting. Offering Endangered protection only to the captive population is not a valid substitute for conserving this listed species and its ecosystems in the wild as mandated in the ESA (16 U.S.C. § 1531(b)) and its implementing regulations (*c.f.* 50 C.F.R. § 17.80(b)).
- The designations either explicitly allow direct take of prairie dogs or do not preclude take of prairie dogs on ferret recovery sites. Prairie dog take destroys BFF ecosystems. Unless specifically banned by additional rules or regulations, prairie dogs can be poisoned, shot, or otherwise removed or controlled in and around ferret reintroduction areas. Arguably, the take of prairie dogs and destruction of their colonies is not incidental take but direct take of ferret habitat.
- Because the FWS forfeits much of its supervisory role over listed species when it designates them as Nonessential, the Service cannot prevent jeopardy to BFFs or adverse modification to their habitat. With the loss of its ability to provide formal ESA Section 7 consultation, the Service has little power to stop or require effective mitigation for actions permitted by other federal and state land management agencies that host ferrets.

The re-designation of the Aubrey Valley, Conata Basin, and Shirley Basin ferret populations from Nonessential to fully Endangered is a very modest yet significant step toward recovering some ferrets and their ecosystems in the wild. After nearly 20 years of reintroduction, most wild ferret populations remain totally insecure. The status quo will not result in recovery—something must change.

If FWS balks at re-classification of these three populations, we urge the agency to consider the following; the FWS could be justified in implementing a number of additional administrative actions to advance BFF population and habitat recovery beyond the petitioners' request. The FWS is currently in the process of revising its black-footed ferret Recovery Plan. We recommend the Service adopt this petition request into the revised plan and consider the following actions for the plan as well. These include, but are not limited to:

- Re-designating more than our recommended 3 Nonessential populations as Endangered,
- Re-designating more than our recommended 3 Nonessential populations as Essential,
- Re-designating all Nonessential populations as Endangered,

- Re-designating all Nonessential populations as Essential,
- Re-designating the BFFs at Badlands National Park, UL Bend National Wildlife Refuge, and Wind Cave National Park as Endangered and designating future reintroduced ferrets at national parks and refuges as Endangered,
- Re-issuing 10(j) incidental take rules to disallow the direct take of BFF habitat via prairie dog poisoning, shooting, oil and gas development, and other actions that harm prairie dogs and their colonies,
- Designating critical habitat for 1 or more BFF population,
- Protecting future reintroduced BFF populations as fully Endangered,
- Listing the black-tailed, Gunnison's, and white-tailed prairie dog species as Threatened or Endangered under the ESA, and
- Allocating additional funding from to enable listing of the currently Warranted But Precluded Gunnison's prairie dog population.

We believe that this request for rulemaking is extremely reasonable by comparison. Black-footed ferret recovery should be a national priority. The status quo will not achieve this. Providing real protections for these three most viable populations is a logical next step. The ferret recovery program deserves a few sites where efforts to conserve the species are not continuously being undermined. If ferrets were allowed to feed, breed, and disperse naturally in a few sites, we could learn a tremendous amount about which protective measures would be most effective to eventually apply in order to reestablish the number of populations required for recovery and delisting.

The remainder of this petition provides information about the black-footed ferret's status; illustrates how ferret Section 10 designations are limiting species recovery; and explains why the Shirley Basin, Conata Basin, and Aubrey Valley populations are essential for the recovery of the species in the wild.

IV. Background Information

A. Species Description[3]

Black-footed ferrets are carnivorous mammals. They are members of the *Mustelidae* family, which also includes weasels, otters, badgers, and martens in the U.S. and polecats in Europe and Asia. BFFs are endemic to North America. Their litters range from 1-5 kits in the wild with 8-week survival rates averaging 3.3-3.4 young per litter. Life expectancy for wild ferrets is about 5 years. Like their family members, black-footed ferrets have short legs and long bodies that lie close to the ground. Their black legs and feet as well as their black eye mask are distinguishing features.

Unlike their family members, black-footed ferrets are extremely specialized and have no known subspecies. Ferret experts consider the animals obligate associates to prairie dogs. Prairie Dogs are "keystone" or "highly interactive" species (Kotliar et al. 1999). BFFs use prairie dog burrows for denning, breeding, and killing prairie dogs—their primary prey. Prairie dog colonies provide ferrets their only habitat in the wild. Though efficient hunters and successful predator escapees, the ferrets' long, thin body shape increases their energy demands relative to animals that are stockier, shorter in length and lose less body heat (Brown and Lasiewski 1972). Prairie dog burrows enable ferrets to spend most of their time in an underground environment

[3] Information for this section comes from Anderson et al. (1986), FWS (1988), Miller et al. (1996), and FWS (2008) unless otherwise noted.

with minimal temperature fluctuations. Ferrets can only be found off colonies when migrating to other prairie dog colonies. Black-footed ferrets give birth in prairie dog burrows. Under feasible conditions, young males disperse to nearby prairie dog colonies to breed with unrelated females in order to promote genetic diversity. Prairie dogs make up 90% or more of the ferret's diet. Prairie dog meat also provides most, if not all, of ferret required water intake. A BFF family of 1.5 adults and 3-4 kits needs at least 250 prairie dogs per year.

BFFs require large prairie dog colonies and colony complexes to ensure a sufficient prey base and also to expand their populations. A study by Forrest et al. (1985) found that black-footed ferret densities were correlated with the size of prairie dog colonies. To summarize from above, scientists believe ferrets need black-tailed prairie dog complexes of at least 4,000 ha (10,000 ac), larger for Gunnison's and white-tailed complexes, at densities of 18-42 prairie dogs per 1 ha (2.5 ac) (CBSG 2004; Biggins et al. 2006).

B. Population Distribution, Abundance, and Trends

As indicated above, the primary cause of the dramatic decline and near extinction of BFFs is the loss of prairie dog populations and large prairie dog colony complexes. The last known non-introduced wild black-footed ferret population was extirpated in 1987. Currently, there are 6 captive and 18 reintroduced wild black-footed ferret groups.

1. Captive Populations

Captive BFFs are distributed among 6 facilities in the U.S. and Canada. These facilities are the National Black-footed Ferret Conservation Center at Wellington, Colorado; Cheyenne Mountain Zoological Park in Colorado Springs, Colorado; the Conservation Research Center at the National Zoo in Front Royal, Virginia; Louisville Zoological Garden in Louisville, Kentucky; Phoenix Zoo in Phoenix, Arizona; and the Toronto Zoo in Toronto, Ontario (Marinari and Kreeger 2006; FWS 2008). The National Black-footed Ferret Conservation Center in northern Colorado hosts more than half of all captive ferrets (FWS 2008).

Since 1987, the ferrets at the breeding facilities have birthed over 6,500 ferret kits (FWS 2008 citing Marinari pers. comm. 2008a). When the FWS released its Black-footed Ferret Five-Year Review, over 2,300 kits had been reintroduced to the wild (FWS 2008 citing Bunnell pers. comm. 2008; Larson pers. comm. 2008a). In 2009, approximately 240 black-footed ferrets were living in captivity (Gober 2009).

2. Reintroduced Populations

The black-footed ferret's range historically overlapped with most of the black-tailed, Gunnison's, and white-tailed prairie dogs' historic ranges. Ferret habitat covered at least 40 million hectares (100 million acres) of prairie dog colonies (Anderson et al. 1986; Miller et al. 1996; Biggins et al. 1997). Citing Ernst's (2008) "E-mail regarding ferret habitat calculations" personal communication, the Fish and Wildlife Service noted that historically the black-tailed prairie dog range supported 85%, the Gunnison's prairie dog range hosted 8%, and the white-tailed prairie dog range contained the remaining 7% of black-footed ferret populations (FWS 2008). Currently, wild ferrets are spread across 18 recovery sites. See map (Figure 3) below.

Coues (1877) observed black-footed ferrets to be common during his early studies of North American *Mustelidae*. Most contemporary scientists accept that black-footed ferrets were historically abundant (Forrest et al. 1985; Anderson et al. 1986; Clark 1989; FWS 2008). Using

a density average of 1 ferret per 40-60 hectares (100-150 acres), Anderson et al. (1986) extrapolated that the historic black-footed ferret population could have reached over 1 million.

Ferret populations spiraled downward, trending with the loss of prairie dog populations and habitat that began in the late 1800s. Scientists failed to find any ferrets for study in the late 1940s (FWS 1988). Despite diligent efforts by FWS, state, and other researchers and volunteers, searchers have found no wild ferrets since discovering the Mellette and Meeteetse groups (FWS 2006; 2008).

Ferret surveys conducted through 2008 estimated an adult wild population of 838 (FWS 2008). The FWS believes that about 422 breeding pairs exist across all 18 recovery sites (FWS 2008). See the distribution map (Figure 3) and table (Figure 4) of current recovery sites and population data below.

Figure 3. Historic Black-footed Ferret Distribution and Current Reintroduction Sites

[map not included in this version]

Figure 4. 2007 Black-footed Ferret Data by Reintroduction Site

SITE	LOCATION	FIRST YEAR	PRAIRIE DOG SPECIES	TOTAL RELEASED	MINIMUM FALL POP	EST. BREEDING PAIRS	FWS RATING*
1	Shirley Basin, WY	1991	WTPD	277	196	98	success
2	Badlands National Park, SD	1994	BTPD	175	20	10	improving
3	UL Bend NWR, MT	1994	BTPD	208	13	7	marginal
4	Conata Basin, SD	1996	BTPD	150	292	146	success
5	Aubrey Valley, AZ	1996	GPD	173	66	33	success
6	Fort Belknap Indian Res, MT	1997	BTPD	167	0	0	unsuccessful
7	Coyote Basin, UT	1999	WTPD	200	25	13	marginal
8	Cheyenne River Indian Res, SD	2000	BTPD	189	150	75	success
9	Wolf Creek, CO	2001	WTPD	209	16	8	marginal
10	BLM "40 Complex", MT	2001	BTPD	95	3	3	unsuccessful
11	Janos, Chi, Mex	2001	BTPD	282	13	7	marginal
12	Rosebud Indian Res, SD	2003	BTPD	99	30	15	improving
13	Lower Brule Indian Res, SD	2006	BTPD	62	14	7	recent
14	Wind Cave National Park, SD	2007	BTPD	49	recent	no data	recent
15	Espee Ranch, AZ	2007	GPD	44	recent	no data	recent
16	Logan County, KS	2007	BTPD	24	recent	no data	recent
17	N. Cheyenne Indian Res, MT	2008	BTPD	8	recent	no data	recent
18	Vermejo Ranch, NM	2008	BTPD	53	recent	no data	recent
Totals				**2,464**	**838**	**422**	

Source: Adapted from FWS 2008 pgs. 12 and 27

*FWS rating system for reintroduction sites: Successful = self-sustaining, 30 or more breeding adults, can support other sites with translocations; Improving = increasing population; Marginal = performing minimally, or at an unknown level; Unsuccessful = populations declining or extirpated, no recent litters documented; Recent = initiated within the past 2 years. (FWS 2008: 6)

Though the wild black-footed ferret population increased from zero to over 800 between 1991 and 2007, the species remains critically imperiled. Only 1 recovery site, Conata Basin, has reached what the Conservation Breeding Specialist Group recommended as a minimum viable population of 120 breeding adults "needed to sustain a ferret population with >90% probability of persistence over 100 years" with a ratio of 1:2 males: females, or 40 males and 80 females (CBSG 2004: 81). Though such population viability analyses to determine "minimum viable population" sizes may be species specific, several scientists believe higher MVPs numbers are generally needed to sustain viable populations. For example, Franklin (1980) recommended 500 individuals. Soulé (1980) contended that larger populations are needed to withstand demographic and environmental stochastic events. A meta-analysis of MVP research conducted over the last 30 years by Traill et al. (2007) recommended a median of 4,169 individuals is necessary to prevent extinction vulnerability.

The Conservation Breeding Specialist Group also noted a major challenge that threatens to limit the recovery effort's future progress: "There are not enough high quality prairie dog complexes currently in existence that would support black-footed ferret populations to achieve recovery goals" (CBSG 2004: 66). Though plague is a major factor, anthropogenic threats such as poisoning and shooting prairie dogs and destroying and degrading prairie dog colonies also remain significant factors in limiting quality BFF habitat. The FWS could start eliminating some of these human-caused threats by implementing our petition requests and taking some of the

other actions listed above.

Multiple threats continue to put the survival of wild BFFs at risk. We summarize these below based on the ESA's listing criteria.

C. Threats

In accordance with the ESA Section 4, a species should be listed as Threatened or Endangered when it meets 1 or more of the following criteria:

> (A) the present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; (E) other natural or manmade factors affecting its continued existence (16 U.S.C. § 1533(a)(1)).

Black-footed ferrets meet at least 4 of these listing criteria.

1. Habitat Loss

The disappearance of prairie dog colonies and colony complexes—black-footed ferrets' only habitat—and the decline of prairie dog populations have been and remain the biggest threat to ferret survival. Loss of the BFF prey base and source of shelter constitutes destruction, modification, and curtailment of habitat and range. According to the FWS, ferrets have lost 97% of their suitable habitat since European settlement of North America (FWS 2006; 2008). The FWS (2006: 13-14) stated:

> The most recent Service estimates of prairie dog occupied habitat range-wide include 1,800,000 acres (729,000 hectares) of black-tailed prairie dog[4] occupied habitat (69 FR 51217-51226, August 18, 2004), 841,000 acres (341,000 hectares) of white-tailed prairie dog occupied habitat (69 FR 64889-64901, November 9, 2004), and 722,000 acres (292,000 hectares) of Gunnison's prairie dog occupied habitat (71 FR 6241-6248, February 7, 2006). This is a total of 3,363,000 acres (1,362,000 hectares) of occupied habitat; a decrease of approximately 97 percent from historically occupied habitat.

During the last 150 years, the loss of native grassland to cropland, prairie dog extermination campaigns, sylvatic plague, urbanization and suburbanization, recreational shooting, along with federal, state, and local policies that favor prairie dog killing over conservation have all contributed to BFF habitat and range loss.

In its black-footed ferret 5-year review, the FWS also asserted that prairie dog colony fragmentation caused by humans and disease is a threat to ferrets:

> 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 (Biggins et al. 1997, Lockhart et al. 2006,

[4] Some independent scientists are concerned that the figure for black-tailed prairie dogs is an over-estimation because some state surveys included in the FWS figure have used methods that result in over-estimation bias (c.f. Miller et al. 2005).

> Luce 2006). (FWS 2008: 13)
>
> 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 … and the present or threatened curtailment of habitat due to poisoning … . 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 … that provide management for a sufficient amount of prairie dog habitat to achieve ferret recovery objectives; and unless disease is managed by dusting, vaccines, maintanence [*sic*] of large sites, and/or maintenance of more sites … . (FWS 2008: 15)

Prairie dog population, colony, and complex losses and a detailed assessment of threats to prairie dogs can be found in ESA petitions to list the white-tailed prairie dog (Center for Native Ecosystems et al. 2002); Gunnison's prairie dog (Forest Guardians et al. 2004); and black-tailed prairie dog (Forest Guardians et al. 2007) and also WildEarth Guardians' (2008; 2009) prairie dog report cards. (Attachments 1-5).

2. Disease

In its *Draft Recovery Plan for the Black-footed Ferret (Mustela nigripes)*, the FWS stated:

> We consider disease a high magnitude, imminent threat to the species, unless ameliorated by adequate regulatory mechanisms that provide management objectives for a sufficient amount of prairie dog habitat so that, despite periodic losses to plague, ferret recovery objectives can be achieved. (FWS 2006: 17)

Black-footed ferrets are extremely susceptible to sylvatic plague and canine distemper. Both can be fatal in wild and captive ferrets. These diseases nearly eliminated the Meeteetse population (Lockhart et al. 2006). Also, BFFs are or may be susceptible to, "human influenza, rabies, tularemia, pseudotuberculosis, leptospirosis, botulism, tuberculosis, staphylococcosis, treptococci, mange, earmites, ringworm, and tick and flea infestations" (FWS 1988 citing Carpenter 1985 and Thorne et al. 1985). Captive populations have been affected by "coccidiosis, cryptosporidiosis, and hemorrhagic syndrome" (FWS 2008 citing Hutchins et al. 1996).

3. Inadequate Regulatory Protection

Government agencies and other institutions recognize the critical imperilment of black-footed ferrets. The International Union for Conservation of Nature (IUCN) lists the black-footed ferret as Endangered D on its Red List (IUCN 2008). This signifies that the species has less than 250 mature adults in the wild. In Canada, the species is listed as extinct under the Canadian Species at Risk Act and extirpated by the Committee on the Status of Endangered Wildlife in Canada. The Nature Conservancy's NatureServe database considers black-footed ferrets a G1 species. This signifies that the species is "critically imperiled" globally and "at very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors" (NatureServe 2009). However, none of these designations provide safeguards to black-footed ferrets in the U.S.

Black-footed ferrets became one of the first native wildlife species to be granted federal protection under the Endangered Species Act of 1973 as Endangered. The Service set the

species recovery priority number at 2 on a scale from 1-18. The ferret faces the highest threat level of a full species. The Service also lists the ferrets' recovery potential as High. Black-footed ferrets continue to be among the most imperiled mammals in the world.

The Service recognizes that the lack of regulations to protect prairie dogs is negatively affecting BFF recovery. In its 2006 draft recovery plan, the Service explained:

> The prairie dog, upon which the black-footed ferret depends for food and shelter, has fewer protective regulations than the ferret. The most recent reviews by the Service for the black-tailed prairie dog (69 FR 51217-51226, August 18, 2004), white-tailed prairie dog (69 FR 64889-64901, November 9, 2004), and Gunnison's prairie dog (71 FR 6241-6248, February 7, 2006) all concluded that inadequate regulatory mechanisms did not rise to the level of a threat for any of these three species. Although it was concluded that this factor was not likely to cause any of these species to become threatened or endangered within the foreseeable future, most prairie dog populations may no longer be large and stable enough (due to plague and poisoning) to support ferrets. The prairie dog may be able to persist in smaller, more fragmented populations; however, these populations are often incapable of supporting ferrets. More protective regulations, particularly those related to poisoning and adequate habitat quality, could improve opportunities for ferret recovery at what are now sites of marginal potential. (FWS 2006: 17-18)

In its 2008 5-year black-footed ferret review, the FWS outlined a range of policies that are impeding BFF protection and recovery. The FWS (2008: 22) concluded that inadequacy of regulatory mechanism to protect BFFs, particularly their prairie dog colony habitat, is a severe threat:

> 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.

We agree. The failures of policy mechanisms to protect prairie dogs and prairie dog colonies are addressed in more detail in Attachments 1-5. Regulatory mechanisms that directly pertain to ferrets and their habitat are inadequate as well. Specifically, the DOI and FWS are not applying the ESA in a way that maximizes species and ecosystem protection to allow BFF recovery.

The failure to designate any wild black-footed ferret populations as Endangered, or even Essential, to the species' survival is one of many factors preventing the species' recovery. The government's policy of granting only the captive ferret population full protection as an Endangered species is not sufficient for achieving self-sustaining ferret populations in the wild. The reintroduction of BFFs into the wild as only Section 10(j) Nonessential Experimental or 10(a)(1)(A) populations prevents the use of several key tools within the ESA. We examine the problem in greater detail in Section V of this petition, below.

4. Other Factors

The Service's draft recovery plan detailed a series of other natural or manmade factors that are affecting BFF recovery (FWS 2008). These included:

> … poisoning of black-tailed prairie dogs; limitations on recovery program efforts; lack of response of agencies to ESA Section 7(a)(1) responsibilities; insufficient support for Tribal programs; lack of adequate land owner incentive programs; genetic fitness of the black-footed ferret; and recreational prairie dog shooting. (FWS 2006: 18)

The FWS 5-year review limited other factors to prairie dog poisoning and genetic fitness but also added climate change as threat (FWS 2008). The Service did not definitively conclude that climate change would be detrimental to BFFS, but relied heavily on the 2007 *Synthesis Report* by International Panel on Climate Change (IPCC 2007). Citing from the IPCC report, the FWS stated:

> The IPCC (2007) report outlines several scenarios that are virtually certain or very likely to occur in the 21st century including: 1) over most land, there will be warmer and fewer cold days and nights, and warmer and more frequent hot days and nights, 2) areas affected by drought will increase, and 3) the frequency of warm spells/heat waves over most land areas will likely increase. The IPPC makes equally sobering predictions for ecosystems in their conclusion that the resilience of many ecosystems is likely to be exceeded this century by an unprecedented combination of climate change, associated disturbances (e.g., flooding, drought, wildfire, insects), and other global drivers (IPPC 2007). With medium confidence, IPPC predicts that approximately 20 to 30% of plant and animal species assessed so far are likely to be at an increased risk of extinction if increases in global average temperature exceed 1.5 to 2.5EC (2.7 to 3.5EF) (IPPC 2007).
>
> Almost certainly the black-footed ferret, along with its habitat, will be affected in some manner by climate change. A shift in the species' geographic range may occur due to an increase in temperature and drought. (pgs. 24-25)

Additionally, Section 10 designations allow for reintroduced ferrets that breach designated boundaries to be either relocated back into boundary areas or captured for the breeding program. Section 10(j) populations must be isolated from other populations by law. FWS requires extensive surveys prior to BFF releases to search for ferrets that have originated from the wild. Locating a wild ferret would prevent releasing captive ferrets into the area and the wild, resident ferrets would be Endangered. No cases of such an event have occurred since the BFF reintroductions began in 1991. The current result is 18 BFF populations that are intentionally prevented from territorial expansion. The entities responsible for reintroduced BFFs must intensively manage them to artificially maintain genetic diversity. Current ferret sites must be augmented with additional ferrets from the captive populations. The pattern established by the use of Section 10 designations will never enable the full recovery of black-footed ferrets in the wild. Each small, bounded population will remain at risk to stochastic events that could eliminate them. Reintroduced ferrets are therefore in essence captive populations that live in the wild.

V. Failure to Meet Recovery Plan Goals and Implementation Objectives

Once a species is listed the Secretary must "develop and implement" a recovery plan "for the conservation and survival of endangered species and threatened species" (16 U.S.C. § 1533(f)(1)). The FWS implemented its Black-footed Ferret Recovery Plan in 1988. Additionally, the Service established a Black-footed Ferret Recovery Team made up of government scientists and non-governmental black-footed ferret experts as allowable under the Act (16 U.S.C. §

1533(f)(2)). In 2008, the FWS published a 5-year review of the ferret's status that stated that the Service intends to put forth a final revised recovery plan in 2009 (FWS 2008).

As of this writing, the Fish and Wildlife Service's 1988 Black-footed Ferret Recovery Plan continues to guide ferret management and provide evaluative criteria. Lockhart et al. (2006) described the purpose of the recovery plan and program:

> The primary goal of the black-footed ferret recovery program is to reestablish a sufficient number of viable, wild ferret populations in order to downlist and recover the species, remove it from ESA protections, and terminate the expensive captive breeding program now necessary to support species survival and recovery efforts. (p. 13)

The FWS has not met its goals for establishing viable wild populations of the species. However, the recovery plan itself is ambiguous in outlining its goals and objectives. The plan's preface stated:

> The goal for black-footed ferret recovery is to: (1) increase the number of captive ferrets to a facility capacity of 200 breeders by 1991, and (2) establish populations, which before breeding, number 1,500 black-footed ferrets in 10 or more populations in the wild. A six-step process has been outlined to reach this objective, beginning with ensuring success of captive breeding, locating reintroduction habitat, finding other populations of ferrets, devising release strategies, managing reintroduced and other populations, and building programs for public support of the recovery effort. (p. iii)

However, the plan lists an objective[5] with 2 separate sub-goals or sub-objectives:

> OBJECTIVE: <u>To ensure immediate survival of the black-footed ferret by:</u>
>
> (1) <u>Increasing the captive population of black-footed ferrets to a census size of 200 breeding adults by 1991;</u>
> (2) <u>Establishing a pre-breeding population of 1,500 free-ranging adults in 10 or more populations with no fewer than 30 breeding adults in any population by 2010; and</u>
> (3) <u>Encouraging the widest possible distribution of reintroduced populations.</u>

The FWS's 2008 *Black-footed Ferret (Mustela nigripes) 5-Year Status Review: Summary and Evaluation* assessed the ferret recovery program's progress in accordance with the three objectives listed on page 19 of the 1988 recovery plan. The FWS has used the 1988 objectives to evaluate the program.

According to the Service's 2008 5-year review, the agency met its recovery plan captive population objective of having 200 breeding pairs by 1991. The Service's current objective is 240 breeding pairs. The FWS revised its Recovery Plan goal of 200 breeding age ferrets by 1991 to a current objective of 240 breeding adults, including 90 males and 150 females. The American Zoo and Aquarium Association's Small Carnivore Taxon Advisory Group

[5] Because the 1988 Black-footed Ferret Recover Plan makes no distinction between goals and objectives, this petition considers goals and objectives to be synonymous.

recommended the 240 minimum in 1996 and then revised the goal to 350 in 2006 (Hutchins et al. 1996; Garelle et al. 2006). The FWS believes 240 breeding adults "addresses genetic management of the captive population by maintaining genetic diversity and also provides an adequate number of surplus animals for reintroduction efforts" (FWS 2008). The captive population was 290 in 2008. In a 2009 article, Pete Gober, FWS's director of the BFF recovery program, put the captive population at approximately 240 individuals (Gober 2009).

The Service has a long way to go to achieve objective two by next year. Gober (2009) acknowledged that despite some successes, the ferret program has only produced around 20% of the BFF numbers needed to achieve the goals of the recovery plan. The 5-year review reported only 422 breeding adults in the wild among its 18 reintroduction sites. Only 4 sites had over 30 breeding pairs at the time of review. The Aubrey Valley site just surpassed this threshold with 33 breeding pairs. At least 6 of the sites may not even be considered "populations,"[6] as defined by the ESA's regulations (50 C.F.R. § 17.12) because breeding is not occurring.

Though vague and immeasurable, the Service admitted in its 5-year review that it had not achieved the third objective of widest possible ferret distribution:

> Tasks under criterion 3 have not yet been fully met, although reintroduction efforts have occurred at 18 sites in 8 States and Mexico. Four populations have been successfully established in three States. Participation by more State, Tribal, and Federal agencies will be needed to lessen the potential risk of catastrophic loss due to disease at any given reintroduction site. (U.S. FWS 2008: 7)

The Service acknowledged that the 1988 recovery plan lacks "objective, measurable criteria" that when met would lead to delisting the black-footed ferret, as specified by Section 4(f)(1)(B)(ii) of the ESA (U.S. FWS 2008, 6). The 5-year review asserted:

> No delisting criteria were included in the 1988 recovery plan. At that time, ensuring species survival, focusing attention on developing captive breeding methodology, and developing reintroduction techniques were the most pressing recovery tasks. The 1988 recovery plan acknowledged that such basic recovery steps were required before delisting could be considered. (U.S. FWS 2008, 7)

The Service's 5-year review also identified other limitations of the recovery plan:

> Finally, the 1988 Recovery Plan focuses on demographic based recovery criteria with no consideration of threats. The tacit assumption has been that the species' population parameters serve as surrogate indicator of the status of the species, including control of threats. (U.S. FWS 2008: 6).

The Service plans to address the 1988 recovery plan limitations in its revised plan. This is important because the current recovery goals have not and will not lead to conditions that ensure the survival of BFFs in the wild. For example, as indicated above, the recovery goals do not include the Conservation Breeding Specialist Group benchmark that 120 adults, 40 males and 80 females, are necessary to sustain a small species population. Guardians et al. recommends that this petition be considered in the plan revision. The final revised recovery plan

[6] According to the regulations a "population" "means a group of fish or wildlife in the same taxon below the subspecific level, in common spatial arrangement that interbreed when mature" (50 C.F.R. § 17.12).

should include objectives of establishing wild populations that are fully protected as Endangered so that some habitat becomes secure as well.

The FWS recognizes that inadequate regulatory mechanisms, or more broadly defined policy issues, are a factor in the failure to reach recovery goals. However, the Service primarily emphasizes policy problems as they relate to prairie dogs. The agency must acknowledge that its practice of issuing only Section 10 rules and permits for BFF reintroductions is also a factor limiting recovery and the attainment of recovery plan goals.

VI. Constraints of ESA Section 10 Designations on BFF Recovery

Section 10 of the ESA provides for exemptions from the protections of Endangered species under Section 9. As indicated above, there are two subsections involved for the BFF: 1) Section 10(a)(1)(A), which allows incidental take of a listed species for science or to enhance survival (16 U.S.C. § 1539(a)(1)(A)); and 2) Section 10(j), which allows for the designation of a released population as a Nonessential Experimental population that does not receive the full protections of the ESA (16 U.S.C. § 1539(j)). All black-footed ferret Section 10 reintroductions allow for incidental take, defined as, "any taking otherwise prohibited, if such taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity" (50 C.F.R. § 17.3).

Establishing some fully protected populations versus maintaining all 18 ferret sites as Nonessential—11 by rule and 6 by application—would allow the FWS more authority to protect ferrets and their habitat. Our recommendation to re-designate the Shirley Basin, Conata Basin, and Aubrey Valley 10(j) populations as fully Endangered would mean ferrets in these recovery sites would be protected as Endangered species and benefit from stricter ESA protections. The FWS would have greater enforcement capacity vis-à-vis the federal and state agencies that manage the public lands hosting BFFs, for example. The Service would be able to designate critical habitat under the ESA to better protect ferret ecosystems.

The FWS has set a pattern and developed a public expectation that it will continue reintroducing BFFs and establishing new recovery sites under Section 10 designations. The Service has justified relying on Section 10 because the agency believes these designations engender greater public support for ferret reintroductions. All 10(j) Nonessential rules make this claim. For example, the Conata Basin rule (59 Federal Register 42682-42694, August 18, 1994) states:

> The concept of experimental populations and classifying them as nonessential was amended into the Act by Congress in 1982 to make it easier to reintroduce individuals of an endangered or threatened species in areas where there was local opposition to the reintroduction. (59 Federal Register 42685)
>
> The nonessential experimental population designation will facilitate reestablishment of the species in the wild by easing adjacent landowner concerns about protective measures for reintroduced ferrets that might otherwise be taken. This designation will relax the regulations that protect each individual ferret of the reintroduced population, while promoting the conservation of the reintroduced population as a whole. The nonessential designation provides a more flexible management framework for protecting and recovering black-footed ferrets, such that adjacent private landowners may continue their current lifestyles. (59 Federal Register 42685)

Section 10 designations, including Nonessential designations, have not quelled local opposition to ferret reintroductions in several cases because ferret recovery requires protecting prairie dog colonies. For example, livestock ranchers in and around Conata Basin have vociferously called for the extermination of prairie dog colonies on public and private land despite the 10(j) rule that relaxed restrictions on take, including prairie dog poisoning (*c.f.* High Plains Midwest Ag Journal 2004). The Forest Service acceded to the demands of private landowners and public grazing allotment lessees amending its Land and Resource Management Plan to allow prairie dog poisoning on federal lands within the bounds of the Buffalo Gap National Grassland, including Conata Basin (U.S. Forest Service 2005; Miller 2008). When the FWS proposed to reintroduce BFFs onto private land in Lincoln County, Kansas, county commissioners responded by passing an ordinance requiring that the landowners willing to accept ferrets instead poison prairie dogs on their land (*c.f.* Corn 2006; Biles 2007; Corn 2008). A species in danger of extinction, such as the black-footed ferret, cannot afford to have public opinion dictate the terms of its recovery. The purpose of the ESA was to elevate the protection of our imperiled wildlife above politics and prioritize species biological and ecological needs.

Moreover, Section 10 designations create ambiguity, uncertainty, and confusion for landowners in close proximity to ferret recovery sites. The Nonessential designation indicates to landowners that BFFs are expendable and unimportant. This is reflected by rules and regulations that allow shooting, poisoning, and habitat destruction and degradation in ferret areas. However, the FWS and other federal agencies have also taken what can be considered extreme and expensive measures to protect the same BFFs. For example, reintroduced ferrets are vaccinated to prevent distemper; the FWS, in conjunction with public land agencies, routinely dust prairie dog colonies on BFF recovery sites with insecticide to prevent plague. The Nonessential designations have created a history of inconsistent and shifting policies at several ferret recovery areas, most notably Conata Basin. In 2005, the Forest Service began poisoning prairie dogs on Buffalo Gap National Grassland within boundary management zones, regions adjacent to private lands, that included ferret areas on the Conata Basin site (see more on this below). Yet in 2008, the Forest Service participated in a massive effort to dust prairie dog colonies to prevent the spread of plague to prairie dogs and ferrets during Conata's first plague epizootic. Given this situation, it is not surprising that landowners continue pushing for more prairie dog eradication around ferret recovery areas. The Endangered designation would provide a clear policy standard of enforcing strong habitat and species protection. This would provide landowners more certainty regarding agency actions and may even promote more acceptance of prairie dogs and ferrets.

The FWS's default practice of issuing Section 10 directives has excluded consideration and adoption of reintroduction rules that would provide stronger safeguards for ferrets and their prairie dog ecosystem habitat. At a minimum, as we recommend, establishing some or all Nonessential BFF populations as Endangered would provide the Service greater power to protect ferret habitat on lands not in the agency's jurisdiction, particularly on BLM, Forest Service, and Park Service lands. For example, the Service could insist that prairie dog shooting be banned within ferret recovery sites. The Service's continued use of Section 10 has significantly weakened its own authority to conserve the species and its habitat.

A. Section 10(a)(1)(A) Populations

Section 10(a)(1)(A) of the ESA allows the FWS to issue permits to other government agencies or private parties that exempt them from complying with provisions in the ESA for listed species. The ESA provision allows take under the following conditions:

> … for scientific purposes or to enhance the propagation or survival of the affected species, including, but not limited to, acts necessary for the establishment and maintenance of experimental populations pursuant subsection (j) … . (16 U.S.C. § 1539(a)(1)(A))

In the case of BFF reintroductions, 10(a)(1)(A) designations have been used to direct ferret treatment on public and private land sites that have less than the recognized minimum of 4,000 hectares (10,000 acres) of prairie dogs. None of the permits issued for 10(a)(1)(A) prohibit incidental take or mandate prairie dog and colony protection. Thus, the designations allow for threats to ferret habitat where the animals are reintroduced.

The 10(a)(1)(A) designations for BFFs enable a range of incidental take scenarios. Even at Wind Cave National Park, the FWS has permitted incidental take of up to 12% of the reintroduced population per year (FWS Permit #TE145090-0, May 11, 2007).

Wind Cave National Park's application stated that take may occur due to vehicle collisions, research handling activities, and "a sudden loss of prey (prairie dogs) due to prairie dog control" (Wind Cave National Park 2006a: 4). The Wind Cave Black-tailed Prairie Dog Management Plan calls for prairie dog control, including poisoning, if occupied acreage exceeds 3,000 acres (Wind Cave National Park 2006b). The FWS permit for the reintroduction does not prohibit prairie dog poisoning—even in areas where ferrets are located.

As with 10(j) reintroductions ferrets can be restricted from expanding their ranges and are subject to take. The Service includes statements in each of its 10(a)(1)(A) permits that are similar to the following statement from the Wind Cave permit:

> Ferrets that move off Park lands are covered by the incidental take statement found in the Biological Opinion for this reintroduction effort and that analysis concluded that all ferrets moving off of Park lands could be lost and not jeopardize the continued existence of black-footed ferrets as a species. Accordingly, the Biological Opinion grants incidental take for those ferrets that move off of Park lands in accordance with the authority granted in section 7 of the Endangered Species Act. (p. 3)

In applications for 10(a)(1)(A) permits, permittees have indicated that they will ultimately seek 10(j) Nonessential Experimental designations for ferret populations under their charge. For example, the 2006 Wind Cave National Park application stated:

> If the site is determined to be unsuitable all remaining black-footed ferrets will be captured and made available to other black-footed ferret recovery efforts. However, if the site is determined to be suitable, WCNP will propose that the site be considered a formal black-footed ferret recovery site, that the ferret population be designated "experimental and non-essential" under section 10(j) of the Endangered Species Act or a similar mechanism that provides maximum flexibility for WCNP while minimizing regulatory issues for adjacent landowners, such as a 10(a)1(a) Recovery Permit, and that the ferret population be allowed to remain at the site. (p. 3)

Though the FWS did not include such a provision in its permits, issuance of the permits in response to applications with this language reflects tacit acceptance that 10(a)(1)(A) recovery sites will eventually either be evacuated or will become 10(j) Nonessential Experimental sites.

B. Section 10(j) Nonessential Experimental Populations

Nonessential populations are treated as if the species were Proposed for listing under the Act, with the exception of populations in national parks and national wildlife refuges, where experimental populations are treated as if they were Threatened (16 U.S.C. § 1540(j)(2)). This petition is primarily focused on the use of 10(j) Nonessential Experimental designations because they govern all ferret recovery areas that appear as if they could support self-sustaining ferret populations. The Shirley Basin, Conata Basin, and Aubrey Valley populations were all reintroduced under 10(j) rules.

Endangered status would give the FWS more authority under ESA Section 7 to direct the human activities allowable in ferret recovery areas. An endangered listing would allow the Service to designate critical habitat for ferrets in order to more effectively mitigate the impacts of human activities allowed in ferret sites. Neither Proposed nor Threatened Nonessential Experimental populations are eligible for designated critical habitat. Though we are only seeking changes in the designation of 3 ferret populations, this change would be a significant improvement from the status quo. Moreover, Endangered designation would not preclude the Service, other federal agencies, and independent scientists from testing relocation and other methodologies that might improve the species' survival.

The FWS acknowledges many threats to reintroduced black-footed ferrets that could be reduced by re-designating Nonessential populations as Endangered. These threats include but are not limited to: continued destruction and degradation of prairie dog colony habitat, difficulties holding federal and state agencies to their ESA Section 7(a)(1) obligations (see more on this below), and the loss of BFF prey via prairie dog shooting and poisoning (FWS 2006). Even plague could be better addressed if the FWS and the agency's biologists had more input on the management of prairie dog and ferret populations on non-FWS public land. For example, FWS biologists may be able to conduct more robust research into plague and plague prevention on sites without potentially confounding variables, such as prairie dog poisoning and shooting. Nonessential designations are regulatory and statutory mechanisms that result in the unmitigated continuation of threats to ferret survival.

Despite the Threatened status of the Badlands National Park and UL Bend National Wildlife Refuge Nonessential Experimental reintroductions, neither has approached supporting a self-sustaining BFF population for biological reasons. The rocky and steep terrain at Badlands likely limits prairie dog habitat of sufficient size. The Service no longer augments the UL Bend populations because repeated plague epizootics have rendered the site not viable for ferret survival given the loss of prairie dogs. Other sites would be more likely to benefit from the regulatory advantages that full protection under the Act would convey.

In a 2006 black-footed ferret report chapter co-authored by the former and current FWS black-footed recovery team leaders (J. Michael Lockhart and Donald R. Gober, respectively), the authors commented on the limitations of the ferret 10(j) designations:

> The section 10(j) nonessential, experimental provisions facilitated ferret reintroduction trials; it is unlikely that most projects would have been successfully implemented without 10(j) or a similar mechanism to reduce the perceived consequences of potential expansion of endangered ferrets onto private lands. The nonessential, experimental designation has other limitations that impede ferret recovery, however, and a review of the utility of 10(j) and reexamination of other

> options to tailor reintroductions to site-specific situations are warranted. (Lockhart et al. 2006: 14).
>
> Section 10(j) has been an important management tool and was necessary for initial ferret reintroduction efforts. Nevertheless, 10(j) also has limitations and liabilities. Despite successful development of ferret reintroduction projects over most of the best remaining habitats in the United States since 1991, the administrative processes required to establish 10(j) experimental population sites typically require 2 years to complete and considerable investments of staff and funding. It is not a provision that allows rapid response to new opportunities. More importantly, 10(j) is somewhat one-sided in effect and does not provide long-range assurances of support by affected parties. It can hinder implementation of program changes in response to identified needs and has been used by involved agencies to justify positions of social and political expediency rather than to fulfill conservation obligations. Other than reducing political opposition to initial reintroduction efforts, ***10(j) has done little to assure reestablishment of ferrets***. (Lockhart et al. 2006: 18) (emphasis added)

As we discussed above, it is not clear that Section 10 designations have even substantially reduced political opposition to BFF reintroductions, but it is clear that they have tied the FWS's hands once BFFs are on the ground.

C. Section 4 Limitations

BFFs meet at least 4 of the 5 listing criteria outlined in Section 4 of the ESA (16 U.S.C. § 1533(a)(1)(b)), as we explain in this petition. These facts are acknowledged by the FWS (FWS 2008). All ESA listing factors pertain to threats that affect species and their ecosystems in the wild. With only approximately 800 ferrets in the wild, the species fits the definition of an Endangered species, under Section 3 of the Act, "any species which is in danger of extinction throughout all or a significant portion of its range" (16 U.S.C. § 1532(6)). The reference to the species' range in the definition of Endangered species reflects the Act's intention to protect species in the wild—not merely captive populations that are disconnected from their ecosystems, habitat, and range. Additionally, the Shirley Basin, Conata Basin, and Aubrey Valley ferrets at minimum fit the definition of Essential Experimental Populations, which are experimental populations "whose loss would be likely to appreciably reduce the likelihood of the survival of the species ***in the wild*****"** (50 C.F.R. § 17.80(b)) (emphasis added). Without these 3 populations, recovery of ferrets in the wild is not assured. For example, former FWS ferret recovery head, Mike Lockhart, made this case about the Conata Basin ferrets when the Forest Service began considering poisoning the region's prairie dogs (Lockhart 2004):

> In a top-down decision late last week, FWS, FS, and APHIS have developed an "action plan" in response to agricultural and political complaints over prairie dog expansion in Conata Basin, South Dakota. In effect, this plan sweeps aside the BFF protection/enhancement standards established in the latest Northern Plains Forest Plan revision and will open both poisoning and shooting on a National Grasslands buffer area extending up to one mile within the boundary of the National Grasslands. In a worst-case scenario where poisoning/shooting could occur around inholdings within Conata Basin, approximately 1/3 of the core ferret habitat could be lost. However, it is my understanding that the Forest Supervisor and Conata Basin staff are working to refine complaint-driven actions to only those acreages around the outside boundary of the Grassland and are authorizing control measures only where

> pdog colonies actually extend from FS onto adjoining private property. It remains to be seen how much elevated political pressure will be brought to bear on the Conata Basin recovery area and whether common sense will prevail, but suffice it to say that we will ultimately lose some carrying capacity for ferrets. In times where drought and plague continue to take a toll on national recovery efforts, such an unexpected impact to our best and most stable recovery site is indeed very bad news. If this is an indication of how flimsy endangered species management standards/agreements really are, particularly on federal public lands, there seems to be little realistic hope for future downlisting or recovery.

Though the BFF is listed as Endangered throughout its historic range, no known ferrets currently in the wild benefit from Endangered listing. Despite exhaustive searches by government, independent scientists, and field researchers over many decades, these surveyors found only two small ferret populations since the mid-1960s that had not been reintroduced (Hanebury and Biggins 2006). These were the Mellette County, South Dakota population that was extirpated in 1974 and the Meeteetse, Wyoming population that was extirpated in 1987. No non-reintroduced ferrets have been located since the government captured the last of the Meeteetse population.

No reintroduced BFF population benefits from designated critical habitat under Section 4 (16 U.S.C. § 1533(b)(2)). As asserted throughout this petition, the inability to designate critical habitat significantly limits the FWS's ability to protect the species' habitat. Critical habitat would prohibit the destruction or adverse modification of designated areas. For example, reducing ferret prey by poisoning prairie dogs could be prohibited within critical habitat for projects containing a federal nexus.

Research has shown that critical habitat significantly increases a species' likelihood of recovery: those species with critical habitat are twice as likely to recover as those without (Taylor et al. 2005). An important explanation for this is the role of critical habitat in protecting unoccupied areas that contain suitable habitat and to which a taxon may be restored, as well as providing heightened safeguards for occupied areas. Whereas listed species without critical habitat benefit only from protection from "jeopardy" during the consultation process, those with critical habitat benefit from *any* adverse modification of their critical habitat. 16 USC § 7(a)(2). The designation of critical habitat for BFFs in Conata Basin, Shirley Basin, Aubrey Valley, and elsewhere is very much in line with the goals of this petition, given that critical habitat is intended to promote not just the survival but also the actual recovery of species. *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Serv.*, 378 F.3d 1059 at 1069 (9th Cir. 2004) (it "is logical and inevitable that a species requires more critical habitat for recovery than is necessary for species survival").

D. Section 6 Limitations

The ESA's Section 6 directs how the states are to treat listed species and how they are to communicate with the FWS. Proposed species are treated significantly differently than Threatened or Endangered Species under Section 6. Section 6 applies to BFF reintroductions that occur on state lands. For example, the Aubrey Valley recovery site is primarily located on Arizona state trust property. Several ESA provisions that apply to Threatened or Endangered species do not apply to Proposed species, including:

- … the Secretary shall cooperate to the maximum extent practicable with the States. Such cooperation shall include consultation with the States concerned before acquiring

any land or water, or interest therein, for the purpose of conserving any endangered species or threatened species. (16 U.S.C. § 1535(a))

- The Secretary may enter into agreements with any State for the administration and management of any area established for the conservation of endangered species or threatened species. (16 U.S.C. § 1535(b))
- … the Secretary is authorized to enter into a cooperative agreement in accordance with this section with any State which establishes and maintains an adequate and active program for the conservation of endangered species and threatened species. … In order for a State program to be deemed an adequate and active program for the conservation of endangered species and threatened species, the Secretary must find, and annually thereafter reconfirm such finding, that under the State program-
  (A) authority resides in the State agency to conserve resident species of fish or wildlife determined by the State agency or the Secretary to be endangered or threatened;
  (B) the State agency has established acceptable conservation programs, consistent with the purposes and policies of this Act, for all resident species of fish or wildlife in the State which are deemed by the Secretary to be endangered or threatened, and has furnished a copy of such plan and program together with all pertinent details, information, and data requested to the Secretary;
  (C) the State agency is authorized to conduct investigations to determine the status and requirements for survival of resident species of fish and wildlife;
  (D) the State agency is authorized to establish programs, including the acquisition of land or aquatic habitat or interests therein, for the conservation of resident endangered or threatened species of fish or wildlife … ((16 U.S.C. § 1535(c)(1))

States would be required to comply with these and other ESA provisions if wild ferrets were found that had not been part of a designated recovery program. However, 10(j) Nonessential Experimental BFF reintroductions occurring on state lands are not regulated by these provisions. For example, once the state of Arizona receives FWS permission to receive Endangered captive ferrets for reintroduction, it is under no obligation to enter into agreements with the FWS regarding the management of reintroduced ferrets on state lands.

E. Section 7 Limitations

The ESA's Section 7 directs how federal agencies are to treat listed species and how these agencies are to communicate with the FWS. Several black-footed ferret reintroductions have occurred on federal BLM or Forest Service lands, including Shirley Basin and Conata Basin. Under Section 7, Nonessential species, which are treated as Proposed species, are treated differently than Threatened or Endangered Species. Unlike Threatened or Endangered species, BFFs that are treated as Proposed species are not covered under Section 7(a)(1) and 7(a)(2) of the Act. Proposed species are only subject to ESA's Section 7(a)(4) less powerful conferencing provision. This significantly reduces the species conservation requirements of federal agencies and the Service's ability to protect reintroduced ferrets.

Section 7(a)(1) of the Act requires federal agencies to agree to releases on biologically suitable lands they manage given that provision's specification that federal agencies shall "…utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species…" (16 U.S.C. § 1536(a)(1)). The ESA defines "conservation" as "to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary" (16 U.S.C. § 1532(3)).

The ESA's consultation requirement under Section 7(a)(2) is another important aspect of the Act's protective powers. Because human disturbance is recognized as a major cause of species extinction, the ESA established parameters that limit government activity in areas sensitive to species listed pursuant to the Act. The Act therefore requires each federal agency to:

> insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary . . . to be critical (16 U.S.C. § 1536(a)(2)).

If an agency determines that an action it proposes may affect a listed species, it must engage in formal consultation with FWS (50 C.F.R. § 402.14) after which the Service must provide the agency with a biological opinion explaining how the proposed action will affect the species or its habitat. If the Service concludes that the proposed action will jeopardize the continued existence of a listed species or result in the destruction or adverse modification of critical habitat, the biological opinion must outline any "reasonable and prudent alternatives" that the Service believes will avoid that consequence (16 U.S.C. § 1536(b)(3)(A)). In the end, other federal agencies must simply discuss their plans impacting Proposed species with the FWS, but the FWS has no real power to object.

Under Section 7(a)(4), federal agencies have no prohibition against jeopardizing a Proposed species or destroying or adversely modifying its critical habitat. The agencies only have a very limited duty to "confer" with the FWS on actions that are likely to jeopardize a Proposed species. Most of the ferrets currently in the wild fall under only this limited conferencing provision. In the end, other federal agencies must simply discuss their plans impacting Proposed species with the FWS, but the FWS has no real power to object.

F. Section 9 Limitations

Section 9 of the ESA prohibits citizens from "taking" an Endangered or Threatened species (16 U.S.C. § 1538(a)(1)). "Take" means to "harass, harm, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 U.S.C. § 1533(18)). The definition of "harass" and "harm" have been clarified in ESA regulations:

> *Harass* in the definition of "take" in the Act means an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. (50 C.F.R. § 17.3)
>
> *Harm* in the definition of "take" in the Act means an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. (50 C.F.R. § 17.3)

Based on these definitions and the rules and permits that govern all Section 10 black-footed ferret reintroductions, several activities allowed in reintroduction areas under incidental take provisions in fact constitute direct and deliberate take of ferret habitat.

Prairie dog shooting within BFF recovery areas is not prohibited by any of the 18 Section 10 reintroduction rules and permits. Policies regarding prairie dog shooting in ferret recovery sites are left to the federal, state, tribal, and private land entities that manage the lands within Section 10 ferret sites. For example, prairie dog shooting is banned in Badlands and Wind Cave National Parks because it is unlawful to hunt wildlife in national parks. Though many national wildlife refuges allow game hunting, the UL Bend National Wildlife Refuge bans prairie dog shooting. Yet, the BLM allows prairie dog shooting on its adjacent 40-Complex. Colorado Division of Wildlife and Utah Division of Wildlife Resources prairie dog shooting regulations govern shooting even on federal lands within the Wolf Creek and Coyote Basin recovery sites; unlimited prairie dog shooting is allowed on public lands except during the breeding season: March 1 – June 14 (Holmes 2008). In the Shirley Basin Black-footed Ferret Recovery Area, recreational shooting of white-tailed prairie dogs is allowed by Wyoming Game and Fish Department and has occurred at a level that has decimated individual colonies. Arizona also allows shooting within Aubrey Valley except during a spring seasonal shooting closure. Conata Basin is closed to shooting year-round. However, shooting is allowed within other areas of Buffalo Gap National Grassland, including other prairie dog colonies where BFFs could migrate.

Prairie dog poisoning is not prohibited by any Section 10 rule or permit. In Kansas, all of the Logan County prairie dogs within the 10(a)(1)(A) permit area could legally be poisoned under orders from the county commissioners. Furthermore, unlike shooting, national parks can poison prairie dogs.

VII. Need for Endangered Designations of Reintroduced BFF 10(j) Populations

For all of the reasons addressed above, reintroduced black-footed ferrets are essential to the survival of the species and the conservation of their ecosystems ***in the wild***. This fact must be reflected in FWS policy regarding reintroduced ferrets. This petition proposes the re-classification of the Shirley Basin, Conata Basin, and Aubrey Valley BFF recovery areas as Endangered populations. They are all essential for recovering ferrets in the wild for the following reasons:

- The FWS has determined that these 3 populations are the only successful BFF populations on public land (FWS 2008).[7]
- Each of the three populations is dependent on a different species of prairie dog: Shirley Basin (white-tailed), Conata Basin (black-tailed), and Aubrey Valley (Gunnison's).
- One of the major threats to ferrets and prairie dogs, plague, has affected each recovery site in different ways. In particular, Shirley Basin and Aubrey Valley ferrets and prairie dogs have demonstrated unique resilience to plague.

However, each population remains vulnerable to threats. Several of these threats could be curtailed by re-classifying them as Endangered. We briefly describe each of these reintroduced populations below in order to highlight why they are essential to the success of re-establishing self-sustaining BFF populations in the wild.

A. Shirley Basin

After ferrets were extirpated in the wild in 1987, the Shirley Basin/Medicine Bow Management Area (SB/MB) became the first site to accept black-footed ferrets from captivity to

[7] The Service defines ferret recovery sites as successful if they: are self-sustaining, support 30 or more breeding adults, and can augment other sites with ferrets (FWS 2008).

establish a wild population in 1991. It is simply referred to as "Shirley Basin." The SB/MB site became the first site to use the Nonessential Experimental designation (56 Federal Register 41473, August 21, 1991). The Wyoming Game and Fish Department led the reintroduction in collaboration with FWS, BLM, the Wyoming State Land Board, and private landowners (mostly ranchers). Between 1991 and 2008, the government released 277 ferrets to the site (FWS 2008). In 2008, Shirley Basin supported 98 breeding adults (*ibid.*).

The site is situated in southeastern Wyoming, within the white-tailed prairie dog's range. See Figure 5. The area encompasses 5,354 km^2 (2,066 mi^2) and is made up of about 55% private land and 45% public state and federal BLM lands. In 1991, the area supported 147,583 white-tailed prairie dog acres (Parrish and Luce 1990, as cited in Shirley Basin/Medicine Bow Black-footed Ferret Working Group 1991).

Figure 5. The Shirley Basin Black-footed Ferret 10(j) Recovery Area

[map not included in this version]

Shirley Basin is unique for several reasons. It is the only FWS-determined successful recovery area within the white-tailed prairie dog range (FWS 2008). Shirley Basin is the only 1 of our 3 key sites that is situated primarily on BLM Land. Additionally, government officials believe the site is notable for nearly failing due to plague and then bouncing back (See Figure 6). In 1991, the government released 49 ferrets to Shirley Basin and 90 in 1992. The captive-breed ferrets produced at least 4 litters in the wild (Miller et al. 1996). But, the population declined to 24 by 1993. In 1997 the ferret population was 5 ferrets (Grenier et al. 2007). Though the government halted releasing ferrets to what seemed like a doomed site, surveys found 52 ferrets in 2003 (*Ibid.*).

Figure 6. Ferret Population Dynamics at Shirley Basin

[graph not included in this version]

The FWS (2008: 19) explained:

> Ferret releases there were suspended in 1994 due to plague and the small ferret population present was expected to be lost by the late 1990s. However, the population persisted through these plague events. Since 2002, the Shirley Basin ferret population has received additional augmentation and grown rapidly (Grenier et al. 2006; Lockhart et al. 2006). As previously noted, WTPD complexes are less densely populated than typical complexes of BTPD or GPD. Apparently, scattered populations of prairie dogs avoided contracting plague and were able to sustain a small ferret population. However, ferrets and WTPDs at other reintroduction sites have not demonstrated similar resiliency, so Shirley Basin may be unique in this regard.

The surprising upswing in the ferret population after plague is part of what makes the Shirley Basin site essential to ferret recovery in the wild. It is the only 1 of the 18 sites where BFFs have made a significant recovery in a situation of persistent plague.

However, threats to the Shirley Basin ferrets continue. Prairie dog and ferret die-offs from plague remain a potential threat. Moreover, as with all Section 10(j) BFF reintroduction, the

FWS has delegated most prairie dog, and thus ferret, management authority to private, state, and federal landowners within the designated recovery area.

Landowners within the 10(j) area are permitted to poison prairie dogs in accordance with state laws and regulations but without any restrictions outlined in the 10(j) rule (56 Federal Register 41473-41489, August 21, 1991). According to the rule:

> No additional restrictions will be placed on private landowners regarding prairie dog control on private and State trust lands. Under the cooperative management plan (SB/MD), landowners can readily control prairie dogs in irrigated fields, wet meadows, and pastures which are economically significant to ranching and of little biological significance to ferret populations. (56 FR 41481)

Prairie dog control is allowed on public lands, including BLM lands, as provided by the 10(j) rule:

> On public lands with private grazing leases, the number and distribution of prairie dogs will be set cooperatively. In areas where prairie dogs become a problem for the landowner, control techniques compatible with ferret recovery objectives could be implemented, e.g., use of control methods that are not lethal to ferrets, removal and relocation of ferrets prior to control of prairie dogs, use of ferrets to control prairie dog numbers, or agreements to allow expansion of prairie dog acreage in the PMZ to compensate for acreage lost during the control program. (56 FR 41479)

The Service leaves it up to unspecified government biologists to decide if and when prairie dog control in the 10(j) region might impact ferrets:

> In the unlikely event that prairie dog control proposed on private and State trust lands might eliminate or significantly diminish the prey base for established ferrets in a specific problem area, it will be the responsibility of State and Federal biologists to determine whether ferrets are likely to be negatively impacted, and if so, to provide the necessary coordination to minimize these impacts. If necessary, ferrets could be translocated from the problem area to areas of no conflict. (56 FR 41481)

There is no guidance or enforcement mechanism in this provision of the rule.

Year-round prairie dog shooting and other human hazards are permitted on all areas of the site, including BLM and Wyoming State lands, except in prairie dog colonies where ferret releases are occurring. Hunting of other animals is allowed in the ferret recovery area. According to the 10(j) rule:

> Recreational activities currently enjoyed in the SB/MB Management Area (antelope hunting, prairie dog shooting, rabbit hunting using greyhound dogs, trapping for furbearers or predators, and off-road vehicle recreation) are either unlikely to impact ferrets or would be managed to avoid or minimize negative impacts to ferrets. (56 FR 41481)

The BLM defers to state laws and regulations with regard to prairie dog shooting across its holdings within Wyoming. With the exception of prairie dog contest shooting (see below), the BLM defers to Wyoming state policy, which allows unlimited, unlicensed prairie dog shooting throughout the state.

Recreational shooting pressure on white-tailed prairie dog colonies has been sufficiently great in the Shirley basin that individual colony populations have been depressed by it. An annual spring prairie dog shooting contest also has been held on private lands[8] in Shirley Basin over the past several years (Gearino 2006; Gearino 2007). Participants claim that thousands of prairie dogs are killed (*ibid.*).

In 2008, the Rawlins Field Office issued a new Resource Management Plan (RMP) governing activities within Shirley Basin that affect ferrets and prairie dogs. The RMP contains several provisions aimed at protecting ferrets and prairie dogs. However, some of these provisions are vague or ambiguous. They do not prohibit prairie dog removal or poisoning, hunting or trapping of other wildlife within the 10(j) area, oil and gas development in close proximity to prairie dog colonies, and other impacts.

The RMP generally bans prairie dog poisoning within the recovery area. There is an exception for "demonstrated reasons of human health and safety" (BLM 2008: 2-55).

The RMP is ambiguous with regards to prairie dog shooting. It states, "Special recreational permits will not be issued for prairie dog hunting" (BLM 2008: 2-55). Though not specified in the RMP, this management guideline only applies to shooting contests (Spehar, personal communication, 2009).

The Bureau of Land Management has issued a number of oil and gas leases in the BFF Recovery Area over the last two years, none of which has carried a stipulation requiring measures to be taken to protect the black-footed ferret or the active prairie dog colonies upon which it depends (*c.f.* BCA 2009). A Biological Assessment for the White-tailed prairie dog was conducted for the Wyoming BLM in 2004; the assessment concluded that oil and gas activities detrimentally affected white-tailed prairie dogs:

> Oil and gas development is currently occurring at unprecedented levels, with substantial expansion expected in the future, making it an ever increasing threat. In Wyoming, 77% of the white-tailed prairie-dog predicted range is being developed at some level for oil and gas, Colorado has 4,953 wells and Utah has 8,835 wells in the predicted distribution of white-tailed prairie dogs (Seglund et al. 2004). Even when petroleum activity does not directly eliminate active burrows, it has been shown to be detrimental to prairie dog populations and much occupied habitat has been classified as valuable for oil and gas extraction activity, particularly in Colorado and Wyoming (Seglund et al 2004, USFWS et al 2001). (Keinath 2004: 27).

Provisions in the Rawlins RMP that address impacts of oil and gas development to BFFs are weak and contains no mandated mitigation measures. The 2 recommended stipulation include:

> If prairie dog towns/complexes suitable as black-footed ferret habitat are present, attempts will be made to avoid locating surface disturbing activities within 164 feet (50 meters) of a town. If a black-footed ferret non-block cleared town/complex cannot be avoided, then a black-footed ferret survey is required … . (BLM 2008: 2-54).

[8] The contest was initially slated to occur on BLM lands in 2007, but due to public outcry, the BLM refused to grant a permit and the contest was relocated to private lands also within the BFF Recovery Area.

> Surface disturbing and disruptive activities in white-tailed and black-tailed prairie dog towns will be avoided (BLM 2008: 2-55).

However, the BLM can and routinely does waive oil and gas stipulations meant to mitigate the impacts of exploration extraction activities to wildlife (Forest Guardians 2007).

There are a number of wind power and electricity transmission projects that could potentially impact black-footed ferret populations. The Gateway West transmission project proposes two major power lines across the BFF Recovery Area. The Carbon County Commission has recently approved the Dunlap Wind Power project, which is located within the BFF Recovery area, and the Seven Mile Hill project and several smaller wind farms were also built recently within the BFF Recovery Area.

There is a large uranium mine from the 1980s in Shirley Basin. It has been closed for decades, but due to the renewed and expanding interest in uranium mining due to rising commodity prices, it is not safe to assume that uranium will not constitute a major threat in the Shirley basin.

All of these activities constitute threats to ferret recovery. There is no evidence in the literature or government reports that Wyoming, BLM, or private landowners have restricted these activities where ferrets are located.

B. Conata Basin

Conata Basin's reintroduced BFF population has historically been the most successful. Conata has served as the gold standard by which other recovery areas are measured. For example, the 2004 Conservation Breeding Specialist Group recommended the following parameters for viable recovery sites based on modeling scenarios of the Conata Basin ferret and prairie dog populations:

> Data from existing reintroduction projects indicate that relatively large, closely distributed blocks of prairie dog habitat are needed to support "self-sustaining" black-footed ferret populations. Based on modeling simulations of Conata Basin population structure and growth, we estimate that 120 breeding adults is needed to sustain a ferret population with >90% probability of persistence over 100 years … . By applying an estimate of acreage required by adult male and female ferrets (T. Livieri, unpubl. data) and the relative ratio of 1:2 males:females in a population, our modeling efforts suggest a complex of 6,030 acres of high quality habitat (i.e. Conata Basin) is needed to support a population of 120 adults ferrets (a complex is defined as a cluster of prairie dog towns each of which is no farther than 1.5 km from the border of another). Given the level of success and rapid ferret population growth at Conata Basin (supporting a prairie dog complex of some 13,000 acres of high density, black-tailed prairie dog habitat), we suggest that development of targeted complexes of 10,000 acres or more of similar habitat quality are needed to more reasonably achieve recovery objectives. Greater complex sizes would be needed in areas of lesser prairie dog population density, particularly for white-tailed and Gunnison's prairie dog species. (CBSG 2004: 81-82)

The Conata ferret population is unique and essential because it has produced and retained more ferrets by 2008 than had been reintroduced. Between 1996 and 2008, 150 have been released on the site. The fall 2008 population was 292 with 146 breeding adults (FWS 2008).

The Conata Basin site has been of great importance because of its ability to serve as a source of ferrets for reintroduction to other recovery areas. Government heads of the ferret recovery program stated:

> The ability to crop a harvestable surplus of ferret kits from Conata Basin for translocation to other reintroduction areas is a recovery program benchmark of exceptional importance. The Conata Basin ferret population likely represents the largest and most sustainable population that has existed since species listing in 1967, and perhaps for decades before. (Lockhart et al. 2006: 9)
>
> Although prairie dogs of all three species are well dispersed throughout their former ranges, prairie dog complexes are very small and highly fragmented compared to historical conditions. There are very few places within North America that approximate the quality of habitat for ferret recovery exhibited at Conata Basin. (*op. cit.* 16)

Unlike most other prairie dog complexes with ferrets, Conata Basin remained plague free until 2008.

The Conata Basin 10(j) reintroduction site occurs predominantly on Buffalo Gap National Grassland, managed by the Forest Service. The 10(j) boundary includes a mix of concentrated and fragmented Forest Service lands among state, private, tribal (Pine Ridge Reservation), and National Park Service lands (See Figures 7 and 8). Badlands National Park was also included in this 10(j) reintroduction under the Nonessential Experimental Population of Black-footed Ferrets in Southwestern South Dakota designation (59 Federal Register 42682-42694, August 18, 1994). The 10(j) area is about 17,000 ha (42,000 ac). In 1994, the area hosted about 3,000 ha (7,400 ac) of black-tailed prairie dogs. However, the Conata Basin and Badlands recovery areas are considered separate sites (*c.f.* FWS 2008). Because the Buffalo Gap is adjacent in some places and proximal in others to Badlands National Park, ferrets that migrate from Conata Basin to the Park can become reclassified as Threatened from Proposed under the ESA. This is because the 10(j) rule manages Nonessential Experimental species as Threatened when they occur on national parks. In 2008, the Forest Service believed prairie dogs occurred in approximately 10,700 ha (26,500 ac) of Conata Basin (U.S. Forest Service 2008).

Figure 7. The Southwestern South Dakota Black-footed Ferret 10(j) Recovery Area

[map not included in this version]

Figure 8. Federal Lands within the Southwestern South Dakota Black-footed Ferret 10(j) Recovery Area

[map not included in this version]

The biological success of Conata Basin ferret recovery has in part made the site more politically and socially contentious. As quality habitat (healthy prairie dog colonies) expanded since the initial reintroduction began in 1996, the ire of local livestock ranchers increased. By 2004, the situation came to a head. Elected official in South Dakota put tremendous pressure on the Forest Service to allow prairie dog poisoning within Buffalo Gap National Grassland including, and perhaps especially, throughout the Conata Basin BFF recovery area. Prairie dogs even became a campaign issue in South Dakota's 2004 U.S. Senate race between Senator Tom Daschle and Representative John Thune. Both men competed to demonstrate their efforts to encourage prairie dog poisoning on federal lands (*c.f.* Harden 2004). The Forest Service caved to political pressure and opened Buffalo Gap and all 3 of the National Grasslands within the Nebraska National Forest to poisoning.

The Conata situation deftly illustrates how ferret recovery is subject to political whims and policy shifts without Endangered status. Though the FWS has warned against poisoning prairie dogs within the recovery area and suggested mitigating the impacts of poisoning to ferrets, FWS communications to the Forest Service indicate the Service has no power to prevent human threats to ferrets and their habitat only the ability to make suggestions (*c.f.* Lockhart 2004; Gober 2005; Slack 2006; Gober 2008).

Each year since 2004—when black-tailed prairie dogs were removed as an ESA Candidate—the Forest Service has proposed to kill prairie dogs within the recovery area. On February 12, 2004, the Forest Service rescinded a moratorium that banned black-tailed prairie dog poisoning on Forest Service lands (Manning 1999; Manning 2004), 7 months before the FWS's August 18, 2004 Not Warranted finding on the black-tailed (69 Federal Register 51217-51226, August 18, 2004). One day after the species was removed as an ESA Candidate, the Forest Service proposed poisoning all prairie dogs within 1 mile of private and tribal lands. After a legal settlement between the Forest Service and conservationists, the agency poisoned fewer acres than originally proposed. The agency still destroyed significant areas of ferret-occupied prairie dog colonies in Conata Basin after ferrets were removed and relocated, most certainly resulting in additional ferret mortalities.

In 2005, the Forest Service undertook an Environmental Impact Statement and finalized a Land and Resource Management Plan amendment that allowed killing prairie dogs on the Grassland within 0.5 mile of private and tribal lands, including within ferret areas. These "buffer zones" may be extended to 1 mile when deemed necessary (70 Federal Register 50297, August 26, 2005). These portions of Conata Basin were poisoned in 2005, 2006, 2007 and 2008, resulting in an effective reduction of the "allowable" Conata Basin ferret recovery area. Ironically, the Forest Service also partially funded and conducted dusting of prairie dog burrows in key ferret areas to prevent further spread of plague in 2008 and 2009.

In 2006, the Forest Service announced it would conduct another Environmental Impact Statement to set maximum prairie dog acreage standards across all Grasslands within the Nebraska National Forest jurisdiction, including the Buffalo Gap National Grassland and Conata Basin (71 Federal Register 57460, September 29, 2006). In 2008, it finalized a decision to cap prairie dog acres across the 3 Grasslands to only 3% of the total land base, but after much public opposition and media attention excluded the ferret areas for a future decision. Poisoning prairie dogs near ferrets and in potential expansion habitat threatens BFF recovery at Conata Basin. However, the FWS has been powerless to issue Section 7 jeopardy decisions to prevent prairie dog poisoning in the recovery area.

The Forest Service allowed shooting until 1998 when an unprecedented level of shooting may have killed half of the prairie dog population. The Forest Service maintains a ban on shooting within the Conata Basin recovery area. The closure remains in effect although the agency attempted to open the area to shooting in 2004; a legal settlement between the Forest Service and conservation organizations kept the shooting closure in effect.

Unfortunately, the 2008 plague epizootic killed about 1/3 of Conata Basin's prairie dogs and possibly 1/4 of the area's ferrets. Forest Service personnel, ferret researchers, and conservation groups acted quickly to prevent plague from spreading across the entire complex by dusting prairie dog burrows with insecticide dust to kill fleas transmitting the disease.

With plague and the continued threat of poisoning, the viability of the Conata Basin BFF population is not assured. Endangered designation of Buffalo Gap National Grasslands' holdings within the 10(j) area would allow the FWS to prevent the human threats to prairie dogs and the ferrets who depend on them within the recovery area.

C. Aubrey Valley

Based on the black-footed ferret 5-year review, Aubrey Valley's ferret recovery program barely qualified as a successful recovery site with 33 breeding adults in 2008 (FWS 2008). The site was slow to establish; researchers found no wild-born kits in the first 5 years. However, the site is unique and essential because it is the only 10(j) reintroduction on a Gunnison's prairie dog complex. Additionally, neither prairie dogs nor ferrets have been known to succumb to plague. The Aubrey Valley complex prairie dogs may exhibit some immunity to plague (Wagner and Van Andel 2007). However, plague is a persistent problem in other parts of the Gunnison's prairie dog range, including in Arizona (Wagner et al. 2006). In fact researchers have observed plague die-offs on Gunnison's colonies around Seligman, which is proximal to the Aubrey Valley recovery site (Wagner et al. 2006) (See Figure 8).

Arizona's Game and Fish Department began surveys to identify black-footed ferret habitat in 1985 (Belitsky 1995). In the early 1990s the Department focused on a 7,000-hectare (17,300-acre) region in northwestern Arizona that supported a significant Gunnison's prairie dog complex. The region is primarily comprised of Arizona state trust and Hualapai tribal lands. By 1995, Arizona Game and Fish Department, the Navajo Nation, the FWS, and the Phoenix Zoo finalized a proposal to release ferrets to the site. The Hualapai Tribe has actively participated and cooperated ferret recovery in the region. In 1996, the FWS issued its final Nonessential Experimental designation to allow the Aubrey Valley reintroduction (61 Federal Register 11320-11336, March 20, 1996). The FWS delegated control over the Aubrey Valley reintroduction program to the state Game and Fish Department. The Department released its founding population of 35 ferrets in 1996.

Figure 8. Aubrey Valley Black-footed Ferret 10(j) Recovery Area

[map not included in this version]

Despite the importance of this site vis-à-vis plague and its borderline success as a ferret recovery site, human threats, particularly prairie dog shooting, continue in Aubrey Valley as allowed by the 10(j) rule. Wagner and Van Andel (2007: 1) described the results of high shooting pressure at Aubrey Valley and how they used shot prairie dogs for their study of plague in Aubrey Valley:

> We initially intended to collect a total of 120 Gunnison's prairie dogs for this study, 60 from the Aubrey Valley and 60 from the Seligman area. This proved to be unfeasible as Gunnison's prairie dogs are very difficult to collect in this area due to the high hunting pressure. However, specimen collection improved once we partnered with local shooters and explained the needs of the study (*i.e.* killed prairie dogs needed to remain above ground and be relatively intact so required samples

> could be collected). In total, we collected 34 Gunnison's prairie dogs as part of this study, 16 from the Aubrey Valley and 18 from the Seligman area … . This was deemed an adequate sample size for this pilot study and the reduction in sample size allowed us to carry out more extensive analyses on the 34 specimens.

As with Shirley Basin and Conata Basin, prairie dog control is unrestricted on private lands within the recovery area (61 Federal Register 11325). Additionally, "(b)ig game hunting, prairie dog shooting, and trapping of furbearers or predators" is allowed across the recovery site on private and public lands (Ibid.), all of which can threaten ferrets.

IX. Conclusion

This petition offers a reasonable proposal for increasing on-the-ground protection for an Endangered species on public lands. The FWS's pattern of relying on ESA Section 10(j) Nonessential Experimental provisions to recover black-footed ferret populations in the wild has not provided sufficient safeguards for this vulnerable species. Even those recovery sites considered successful have experienced population fluctuations due to plague and other threats. However, these successful populations are essential for re-establishing the species in the wild. Designating the Shirley Basin, Conata Basin, and Aubrey Valley populations as Endangered will promote their conservation and recovery by enabling stronger protections for their ecosystems—based on healthy prairie dog colony complexes located on our public lands.

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X. List of Attachments

1. Center for Native Ecosystems) et al. ESA Petition to List the White-tailed Prairie Dog. July 11, 2002.

2. Forest Guardians. Petition to the U.S. Fish and Wildlife Service to List the Gunnison's Prairie Dog as an Endangered or Threatened Species Under the Endangered Species Act, 16 U.S.C. § 1531 *et Seq*. (1973 as amended), and to Designate Critical Habitat. February 23, 2004.

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