Report from the Burrow

Forecast of the Prairie Dog 2015

Taylor Jones, WildEarth Guardians

A Report from

WildEarth Guardians

FEBRUARY 2015

MISSION STATEMENT
WILDEARTH GUARDIANS works to protect and restore wildlife, wild places, wild rivers and health in the American West.

Inquiries about this report and WILDEARTH GUARDIANS' work can be made directly to:
Taylor Jones, MS
WILDEARTH GUARDIANS
1536 Wynkoop Street, Suite 310
Denver, Colorado, 80202
(720) 443-2615
tjones@wildearthguardians.org

Cartography: Rocky Mountain Wild

Cover Photo: Sandy Nervig
Cover sidebar photos of threats (development, poisoning, recreational shooting): Rich Reading

Whenever possible, report sections were reviewed by a representative of the state or federal agency being graded. Thank you to the state, federal, tribal agencies and non-governmental organizations who provided information and to the following reviewers: Kristy Bly (World Wildlife Fund) and Kristen Nelson (Africa Network for Animal Welfare-U.S.A.). Review does not constitute an endorsement of the 2015 *Report from the Burrow*.

Report from the Burrow:
Forecast of the Prairie Dog 2015

WildEarth Guardians annually releases our *Report from the Burrow: Forecast of the Prairie Dog* on February 2,"Prairie Dog Day," also known as Groundhog Day. We linked these two holidays because both groundhogs and prairie dogs provide us with predictions of the future. Famous groundhog Punxsutawney Phil entertains us, foretelling the length of winter. However, the status of prairie dog populations has more serious implications for the future of western grassland ecosystems.

The *Report from the Burrow* annually evaluates and grades the performance of a multitude of state and federal agencies responsible for prairie dog management as a way to measure support for prairie dog conservation and to make predictions for the immediate and long-term future of these five keystone species. Most state and federal agencies are legally bound to protect wildlife and wildlife habitat on our public lands. This report is a tool for the public to hold agencies accountable.

It is difficult to get an "A" in *Report from the Burrow*, and that is by design. WildEarth Guardians aspires to an ideal future in which prairie dogs are protected and respected as a key part of healthy, thriving ecosystems. In that future, non-lethal methods are used to resolve human/wildlife conflicts, grassland restoration is a top priority and habitat destruction is forbidden, resource extraction is sustainable, and rare species that depend on prairie dogs, like the black-footed ferret, are fully recovered with self-sustaining populations across their historic ranges. State and federal agency personnel often do challenging work against difficult odds to recover imperiled species. On the other hand, contradictory policies between agencies (and sometimes within an agency), inertia, unwillingness to confront destructive resource extraction practices, lack of funding, and/or hostility to prairie dogs within an agency or from vocal minority interest groups can hamstring conservation efforts. This report attempts to acknowledge the good work being done, while also clearly showing the massive amount of work left to do before the prairie dog empire can be considered recovered.

No federal or state agency has yet earned an "A" in *Report from the Burrow*. Though almost no overall grades were changed this year, there appears to be a trend toward improved management in the states. Several states—Colorado, New Mexico, South Dakota and Wyoming—received higher grades in "Monitoring" for planning and implementing and more regular surveys of prairie dog populations. Utah is recognized with a higher grade in the "Conserve" category for persevering in a number of creative strategies for Utah prairie dog conservation, though a recent court ruling may throw a wrench into the works (*see* "Utah"). Nebraska got something other than an "F" in every category for the first time in the *Report's* history; we recognize the state with a higher grade in "Policy" for rejoining the Western Association of Fish and Wildlife Agencies Grassland Initiative (*see* Box 2). In light of new information from U.S. Department of Agriculture's Wildlife Services program, we've changed the program's grade to acknowledge the importance of its role in plague management on priority conservation sites.

Background

Four species of prairie dog live in the United States: the black-tailed, white-tailed, Gunnison's, and Utah prairie dog. The fifth species, appropriately named the Mexican prairie dog, is found only in Mexico. Collectively, prairie dogs have lost between 93 and 99 percent of their historic range in the last two centuries, and with that loss we lose the unique ecosystems that prairie dogs create and maintain. As a "keystone species," prairie dogs have unique, transformative effects on grassland ecosystems that are

disproportionately large relative to their abundance. These social, burrowing mammals (members of the squirrel family) fertilize and aerate the soil and clip foliage, creating shorter but more nutrient-rich plants. Large herbivores including elk, pronghorn, bison and cattle often prefer to graze on prairie dog towns. Prairie dog burrows provide homes and shelter for numerous mammals, birds, reptiles, amphibians, and invertebrates, many of whom are themselves imperiled. Prairie dogs are an important food source for a wide variety of species including hawks, eagles, coyotes, foxes, badgers, and extremely rare black-footed ferrets (*see e.g.,* Martínez-Estévez et al., 2013; Davidson et al., 2012; Miller et al., 1994). Black-footed ferrets are prairie dog obligates, meaning their diet consists almost entirely of prairie dogs and they cannot survive in areas where prairie dogs are not present. Black-footed ferrets are listed as "endangered" under the Endangered Species Act (*see* Box 1).

An important issue in prairie dog conservation is the prevalence of sylvatic plague, which was inadvertently introduced to North America in the early 1900s. The disease has spread throughout the majority of prairie dog range and is always present on the landscape at low, almost undetectable levels. Prairie dogs have no natural immunity to plague, and an outbreak can rapidly cause 99 percent or higher mortality in a colony. For years, the only way to prevent plague outbreaks in prairie dog colonies was to kill the fleas that host plague bacteria by "dusting;" applying the insecticide deltamethrin (DeltaDust) to burrows or individual animals. A promising new approach—an oral plague vaccine for prairie dogs delivered via a peanut butter-flavored bait—is currently undergoing field-testing on sylvatic plague vaccine trial sites throughout prairie dog range. If successful, the vaccine could become an important tool for mitigating one of the most devastating threats to prairie dogs.

The Grading System

We evaluate U.S. state and federal agencies that manage prairie dogs on their past year's performance in restoring and protecting prairie dogs and their habitat. We use a four-point grading system. An "A" or 4.0 signifies excellent performance; an "F" or 0 is a failing grade. We use seven categories to determine final grades, modeled on the Endangered Species Act's five criteria for determining a species' eligibility for federal protections.

1. **Prairie dog conservation, restoration, and management (Conserve):** The extent to which federal and state agencies follow or are progressing toward developing and implementing final conservation plans and actively working to recover and protect prairie dogs.
2. **Habitat conservation, restoration, and management (Habitat):** The degree to which federal and state agencies are working toward restoring prairie dog habitat or allowing habitat destruction (for example from oil and gas drilling and coal mining, livestock grazing that promotes weed incursion and woody shrub encroachment, or off-road vehicle use).
3. **Shooting regulations (Shooting):** Evaluating federal and state limits on prairie dog shooting for recreation and control.
4. **Plague monitoring, mitigation, and prevention (Plague):** Agency commitments to plague monitoring and prevention.
5. **Prairie dog policies (Policies):** The federal and state policies (aside from conservation plans) that further prairie dog conservation or contribute to prairie dog decline.
6. **Poisoning (Poison):** The amount of lethal control through poisoning allowed, including subsidies or direct support for poisoning, mandatory poisoning policies, and poisoning restrictions.

7. **Monitoring of populations and threats (Monitor):** The frequency of population surveys, robustness of survey methods, records kept on management issues and threats to monitored populations, and public access to monitoring data.

Sometimes more than one agency within a state develops and implements prairie dog policies. For example, Montana's Comprehensive Wildlife Conservation Strategy lists both resident prairie dog species as high priority "species of concern," however Montana's Department of Agriculture designates them as "vertebrate pests." Differing designations across agencies in the same state can cause management conflicts, mixed messages, and contradictory actions. Each state's grade in *Report from the Burrow* reflects the effect of these policies as a whole, not just the actions of the state wildlife agency.

The Report Card

ENTITY	CONSERVE	HABITAT	SHOOTING	PLAGUE	POLICIES	POISON	MONITOR	2014	2015
FEDERAL GOVERNMENT AGENCIES									
BLM	B	C	F	C	C	C	C	C-	**C-**
EPA	N/A	N/A	N/A	N/A	F	F	N/A	F	**F**
NPS	B	C	B	B	B	B	A	B	**B**
USFS	B	C	D	B	C	D	A	C+	**C+**
USFWS	D	D	D	C	D	C	C	D+	**D+**
WS	C	N/A	F	B	F	F	N/A	F	**D**
STATE GOVERNMENTS									
AZ	A	B	B	B	B	C	A	B	**B**
CO	A	D	B	A	B	D	B	B-	**B-**
KS	F	F	F	D	F	F	B	D-	**D-**
MT	C	C	F	B	F	D	C	D+	**D+**
NE	F	F	F	F	D	F	F	F	**F**
NM	D	D	F	F	F	D	B	D-	**D**
ND	F	F	F	F	F	F	C	F	**F**
OK	B	B	F	D	B	B	B	C	**C+**
SD	D	F	F	C	D	F	C	D-	**D**
TX	C	C	F	F	C	F	B	D+	**D+**
UT	B	C	C	C	D	D	B	C	**C**
WY	C	D	F	D	D	F	C	D	**D**

Box 1. Prairie Dogs and the Endangered Species Act

Prairie dog conservation groups have been working for years to secure legal protections under the Endangered Species Act (ESA, 16 U.S.C. §§ 1531-1544) for all species of prairie dog. Why is the ESA an important tool for protecting prairie dogs? What would being placed on the ESA's "endangered" or "threatened" list mean for prairie dogs? Why are some species of prairie dog listed while others are not? Here we provide an overview of the ESA itself; elsewhere we will explain how the ESA applies to each species of prairie dog.

In 1973 Congress passed the ESA to "provide a means whereby the ecosystem 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). It was one of the least controversial bills enacted that year, passing the Senate 92-0 and the House 390-12 (Goble et al., 2006, p. 7). The law was signed by the Republican President Nixon along with a signing statement celebrating the bipartisan effort to conserve species. Congress has subsequently amended the ESA several times. While it began as a prohibitive law that "admitted no exceptions," the ESA today is a very flexible—and some would say overly permissive—statute (Gosnell, 2001, p. 576).

The protections of the ESA begin with listing; placing a species on the federal list of "endangered" or "threatened" species. The procedure for listing a species under the ESA includes several steps. A species can be brought to the attention of the listing agency—the U.S. Fish and Wildlife Service (USFWS) for land-based and most anadromous species, and the National Marine Fisheries Service (NMFS) for most marine species—either through an internal agency process or through citizen petitions. The USFWS is entrusted with conserving all five prairie dog species.

In order to succeed, a listing petition must meet several requirements: the petition must clearly identify itself as such; the entity petitioned must meet the ESA's definition of a "species;" and most importantly the petition must present "substantial information" indicating that listing may be warranted. Regulations define "substantial information" to mean "that amount of information that would lead a reasonable person to believe that the measure proposed in the petition may be warranted." The use of the words "may be warranted" is important here. Petitions must meet a much lower standard than final listing decisions; a petition does not have to offer conclusive proof, just enough information to convince a reasonable person that the species might be imperiled and that the situation warrants further research and consideration. Once the USFWS receives a petition, it has 90 days to decide whether the petition meets the requirements. The resulting decision is known as the 90-day finding and is published in the Federal Register. A negative 90-day finding means that the petition has failed to convince; in the case of a positive 90-day finding, the process enters the next stage. The USFWS has 12 months from the date the petition was received to collect and evaluate all available information and decide whether the species should be listed. For the 12-month finding, the agency has three options: propose the species for "threatened" or "endangered" status; declare that the species doesn't warrant listing; or announce the species deserves to be listed, but will not be proposed due to other, higher priority actions ("warranted but precluded"). Species found to be "warranted but precluded" are placed on the candidate list. The candidate list is reviewed annually, but species may wait indefinitely for a final decision. The law requires USFWS to make "expeditious progress" toward protecting species on the candidate list. If a species is proposed for listing, the USFWS has another 12 months to finalize that listing. The agency also has the option to withdraw the listing. The protections of the ESA only apply at the end of the process, when the species is formally listed as "threatened" or "endangered." Each finding is published in the Federal Register and triggers a public comment period.

(Box 1, continued)

The ESA defines an "endangered" species as one that is "in danger of extinction throughout all or a significant portion of its range." 16 U.S.C. § 1532(6). A "threatened" species is "likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." 16 U.S.C. § 1532(20). A species does not have to be in danger throughout its entire range to be listed; it need only be in danger throughout a "significant portion" of its range. The definition of "significant portion of range" has been the subject of much controversy and several legal fights, and is heavily implicated in the recent court case over the listing of white-tailed prairie dogs and the ongoing legal challenge to the USFWS's refusal to list the Gunnison's prairie dog (*see* Boxes 4 *and* 7). The definition of "foreseeable future" is also disputed, especially as it can vary from species to species depending on their life history and generation time.

Once a species is listed, it is protected by the law in several ways. Concurrent with listing, the USFWS should designate "critical habitat:" areas which, whether currently inhabited by the listed species are not, are deemed "essential to the conservation of the species." 16 U.S.C. § 1532(5). Section 7 requires any government agency that undertakes or permits a project that may impact a listed species to consult with the USFWS before proceeding. If the project may jeopardize the survival and recovery of a species or adversely modify or destroy its protected "critical habitat," the USFWS may require modifications to the project, or in rare cases will prohibit the project from moving forward (Caldwell, 2001, p. 98). Less than one-tenth of one percent of projects reviewed under Section 7 between 1979 and 1992 were halted because of the ESA (Gosnell, 2001, p. 576). Section 9 prohibits "take" of any individual of a listed species. The law defines "take" as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." 16 U.S.C. § 1532(19). Some exceptions to the take prohibitions exist: the USFWS may issue Incidental Take Permits (ITPs) for reasons including scientific research, subsistence use by native people, undue economic hardship, or captive breeding (Caldwell, 2001, p. 104). In general, ITP applications must present evidence that the permitted activity "enhance[s] the propagation or survival of the affected species," is "incidental to, and not the purpose of, the carrying out of any otherwise lawful activities," and does not "appreciably reduce the likelihood of the survival and recovery of the species in the wild." 16 U.S.C. § 1539 (1)-(2). In practice, ITPs are used to allow everything from breeding rare antelope for canned hunting on game farms, to incidental capture of protected Canada lynx in cruel leg-hold traps set for other animals.

A "threatened" species, as it is not considered in immediate danger of extinction (rather, it is in danger of becoming "endangered"), is potentially subject to more relaxed protections. The USFWS automatically extends all the protections of "endangered" species to "threatened" species, but can choose to implement broad exemptions to those protections through rules enacted under Section 4(d) of the ESA (known as 4(d) rules or "special rules") (Caldwell, 2001, p. 116). For example, under the current 4(d) rule for the Utah prairie dog, agricultural producers are exempted from any take of Utah prairie dogs that may occur incidental to regular operations (*see* USFWS, 2012a). 4(d) rules can be an important tool for enabling flexible solutions to complex conservation problems, but they can also be misused by the listing agency to exempt activities threatening a species, removing meaningful regulatory protections and undermining the ESA.

Box 2. Federal and State Agency Commitments to Prairie Dog Conservation

Multi-State Conservation Plan for the Black-tailed Prairie Dog. In 1998, several conservation organizations petitioned the USFWS to list the black-tailed prairie dog under the Endangered Species Act. In response, the eleven states within black-tailed prairie dog range formed the Interstate Black-tailed Prairie Dog Conservation Team to prevent federal listing. The Team developed the Multi-State Conservation Plan for the Black-tailed Prairie Dog (Luce, 2003). With the exception of Colorado and Nebraska, each state pledged to develop occupied acreage targets for prairie dog habitat, support or contribute to the management of at least one prairie dog complex greater than 5,000 acres, and have prairie dogs distributed across 75 percent of the counties in their historic range, among other objectives (*see* Luce, 2003). In 2002, the Black-tailed Prairie Dog Conservation Team was expanded to all prairie dog species.

Comprehensive Wildlife Conservation Strategy (CWCS). In 2005, Congress mandated that each state develop Comprehensive Wildlife Conservation Strategies in order to receive federal wildlife grants and funding from the federal Wildlife Conservation and Restoration Program. Among eight plan requirements, a state's CWCS must include actions for conserving and monitoring priority species and habitat. Several state Conservation Strategies identify prairie dogs as priority species for conservation action. Each state developed its own conservation measures to monitor and protect the selected species.

The Western Association of Fish and Wildlife Agencies Memorandum of Understanding. In 2006, the twelve states within the range of the four U.S. prairie dog species as well as several federal agencies signed the Western Association of Fish and Wildlife Agencies (WAFWA) Memorandum of Understanding (MOU) for the Conservation and Management of Species of Conservation Concern Associated with Prairie Ecosystems (WAFWA, 2006). The MOU directed the agencies to develop prairie dog management plans, maintain and enhance prairie habitat and wildlife, including prairie dogs, and communicate policy and other changes with WAFWA, among other objectives. Each agency signatory designated representative staff members to participate in annual Prairie Dog Conservation Team meetings to provide prairie dog management progress reports. WAFWA is currently planning a large-scale black-tailed prairie dog acreage survey using methodology recommended by a panel of experts (McDonald et al., 2011). Funding is available through the Competitive State Wildlife Grant Program to survey about 20 percent of the range. Some state agencies are contributing funding in order to survey all habitat in the state.

WAFWA Grassland Initiative. In 2004, WAFWA directed its Habitat and Nongame and Endangered Species Committees to adopt an ecosystem conservation approach and develop a comprehensive prairie conservation strategy for shrub and grassland species and habitats. This effort became known as the WAFWA Grassland Initiative (WGI), and it attempts, through a multi-state cooperative approach, to stabilize and expand grassland habitat and halt the decline of grassland species. In January 2011, WAFWA renewed the Grassland Initiative for another five years. In July 2011, WGI released their Western Grassland Initiative Strategic Plan, outlining their mission and strategies (WGI, 2011).

The Grades in Detail

C- U.S. Bureau of Land Management (BLM)

The BLM manages vast expanses of our public lands across the West, including Gunnison's, Utah, and white-tailed prairie dog habitat. The BLM also manages a small portion of black-tailed prairie dog range. The BLM conducts prairie dog surveys on some of the public lands it administers. In general, state Game and Fish Departments regulate shooting and poisoning on federal lands, while the BLM and Forest Service manage habitat. Therefore few BLM-administered lands have shooting restrictions. Specific BLM Resource Management Plans (RMPs) may include guidelines for prairie dog management but the agency generally takes a hands-off approach. The BLM in Colorado, Kansas, New Mexico, Oklahoma, and Texas is participating in the Southern Great Plains Rapid Ecoregional Assessment, a project to describe and map areas of high ecological value and their potential to be impacted by climate change, wildfire, invasive species, and development. This information will be used to provide guidance for management actions.[1] The BLM funds sylvatic plague vaccine trials.

Arizona. The BLM in Arizona has worked in cooperation with the Arizona Game and Fish Department and the University of Arizona since 2008 to reintroduce black-tailed prairie dogs to Las Cienegas National Conservation Area; the agency had a goal of establishing 1,000 acres of black-tailed prairie dogs on BLM-administered land by 2011, which has not been met (*see* "Arizona"). The BLM is working on habitat restoration in the area to support the reintroduction.

Colorado. The BLM coordinated with Colorado Parks and Wildlife on conservation efforts such as prairie dog surveys, sylvatic plague dusting, and/or sylvatic plague vaccine trials in Gunnison and black-tailed prairie dog colonies in Gunnison, Royal Gorge and San Luis Valley Field Offices in 2014 (*see* "Colorado"). All three species of prairie dog in Colorado are managed by the BLM as "sensitive species." For any proposed action on BLM land, potential impacts to sensitive species are considered during the planning phase of the project.

Montana, North Dakota, and South Dakota. The BLM manages black-tailed and white-tailed prairie dogs as "sensitive species" in all three states and specific management actions are determined by the applicable RMP.[2]

Nebraska. The BLM mostly administers mineral rights in Nebraska and has little authority over prairie dog management or conservation on surface lands in the state.

New Mexico. Both species of prairie dog resident in New Mexico are unregulated by the New Mexico Department of Game and Fish (NMDGF). Because neither species is considered "small game," NMDGF does not have the authority to issue regulations on prairie dog shooting such as bag limits or seasons, or to enforce protective measures suggested by the BLM. Application of poison on BLM-administered lands in New Mexico requires a permit from the State of New Mexico. Between 2009 and 2014, the Rio Puerco BLM Field Office translocated Gunnison's prairie dogs from the City of Santa Fe into an existing colony on the El Malpais National Conservation Area and is currently monitoring the

[1] For more information, see http://www.blm.gov/wo/st/en/prog/more/Landscape_Approach/reas.html.
[2] For individual Resource Management Plans, see http://www.blm.gov/mt/st/en/prog/planning.html.

project's success. The Field Office is working to secure funds for a comprehensive study of the colony. The current draft of the RMP includes shooting restrictions during breeding season on "identified augmented prairie dog areas," which would include the El Malpais translocation site. Other than dusting and quarantining translocated prairie dogs, the New Mexico BLM has not done any plague management (State Game and Fish agencies are generally in charge of plague management activities such as dusting). A black-tailed prairie dog colony in the Roswell Field Office area has served as a source population for reintroductions to Arizona and to Ted Turner's Armendaris Ranch. The Farmington Field Office is working to mitigate impacts of oil and gas drilling on Gunnison's prairie dog towns. In the Las Cruces district, the BLM tries to annually monitor the prairie dog towns on Otero Mesa, but was unable to complete a formal survey in 2014, though anecdotal observations show healthy numbers. The draft Tri-County RMP was released in summer 2013 and includes a proposed Area of Critical Environmental Concern (ACEC) adding protections for most of the prairie dog towns on Otero Mesa east of McGregor Range. The Roswell Field Office maintains a geodatabase identifying known prairie dog colonies locations in order to assess potential conflicts with other resources uses of public lands. The Field Office reviews proposed projects on public lands to make sure that prairie dog habitat is considered and protects known habitat by "avoidance" of developments in and near colonies. The 1997 Approved Roswell Resource Area RMP states that poisoning prairie dogs is prohibited on public lands except in cases of health emergencies.

The BLM, through the Restore New Mexico program, continues to improve habitat for a variety of grassland species, including prairie dog. Restore New Mexico projects include brush control and prescribed fire, which reduces the amount of invasive brush species encroaching on grassland habitats. ACECs established for other purposes provide some protections to prairie dogs; the Lesser Prairie Chicken ACEC includes two prairie dog colonies that will be protected from activities such as oil and gas development and rights-of-way. The Overflow Wetlands ACEC includes a large prairie dog colony along the Pecos River, which will be protected in the long-term from any surface-disturbing activities.

Kansas and Oklahoma. The BLM does not manage any surface lands in Oklahoma or Kansas. Projects taking place on split estate lands[3] have prairie dog conservation measures implemented during the application and pre-construction phase of the project as Conditions of Approval. During the application process, the BLM requests that the operator move the pad, access road, or pipeline to avoid traversing a prairie dog town. To date, no projects are near prairie dog towns.

Texas. The Cross Bar, a 12,000-acre tract of land near Amarillo, is the only BLM-administered surface public land in Texas. The Amarillo Field Office of the BLM had to abandon plans to reintroduce prairie dogs to the Cross Bar in 2012 after discovering the soil profiles were unsuitable for supporting a sufficient number of prairie dogs to in turn allow black-footed ferret reintroduction. However the BLM is moving forward with a habitat restoration initiative with the end goals of reducing mesquite and cholla by 80 percent and reintroducing bison. With the conversion of the Cross Bar back to shortgrass prairie, the BLM hopes to see natural recolonization of prairie dogs.

Utah. The BLM in Utah works cooperatively with other agencies on habitat restoration for the Utah prairie dog. The BLM completed National Environmental Policy Act (NEPA, 42 U.S.C. §§ 4321-4370) documents for a programmatic preventative plague-dusting project on BLM lands across Utah prairie dog range, and with Utah Prairie Dog Recovery Implementation Program (UPDRIP) partners (Utah

[3] "Split estate" refers to a situation in which the surface rights and the subsurface rights—such as mineral development rights—are owned or administered by different parties, often one public and one private.

Division of Wildlife Resources, Cedar City, and the U.S. Forest Service) live-trapped 2,062 animals from private lands and relocated them to release sites in all three Recovery Units (*see* "Utah"). The BLM has also conducted habitat improvement projects on several sites. Cedar City, Vernal, and Richfield Office BLM-administered lands host sylvatic plague vaccine trial sites.

The Utah BLM manages Gunnison's and white-tailed prairie dogs as "sensitive species." Protective and proactive measures to enhance prairie dog conservation are included in several RMPs and include controlled surface use requirements, seasonal restrictions to surface disturbing activities, and requirements to coordinate with Utah Division of Wildlife Resources on population and habitat inventories, monitoring, and translocations. For oil and gas well proposals within mapped colonies, if there is no way to relocate the project, the BLM applies mitigation measures to keep wells at least 660 feet from critical prairie dog areas. The Utah BLM also utilizes management recommendations and population monitoring strategies from the multi-agency Gunnison's and White-tailed Prairie Dog Management Plan (Lupis et. al, 2007). The BLM discourages prairie dog shooting on public lands. BLM-administered public lands in northeastern Utah primarily host white-tailed prairie dogs. The BLM undertakes yearly density surveys on 50,000 acres on those lands to identify areas that could support black-footed ferrets. In addition to the State's seasonal shooting closure (April 1 to June 15), approximately 47,500 acres in northeastern Utah is closed to shooting year-round within the black-footed ferret reintroduction area in Coyote Basin, 90 percent of which is on BLM-administered public lands. The BLM conducts regular burrowing owl surveys.

Wyoming. The Wyoming BLM designates prairie dogs a "sensitive" species, and all RMPs in the state include prairie dog conservation guidelines. Development projects must be located and designed to minimize impacts to prairie dogs. The Wyoming BLM generally does not allow poisoning of prairie dogs on public lands, but exceptions are made on properties adjacent to private land. The BLM discourages prairie dog shooting on public lands. Most prairie dog management is through the Wyoming Game and Fish Department (WGFD). The WGFD is conducting sylvatic plague vaccine trials on BLM-administered public lands and private lands in the Meeteetse, Wyoming, area in the same white-tailed prairie dog towns that were the source of the last known wild black-footed ferrets; the progenitors of all ferrets in the captive breeding program.

F U.S. Environmental Protection Agency (EPA)

The EPA is responsible for approving and governing the use of toxicants under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). 7 U.S.C. §136 et seq.. The EPA has long approved the use of zinc phosphide and aluminum phosphide for exterminating prairie dogs.

In 2012, the EPA approved the use of the anticoagulant rodenticide Rozol (chlorophacinone), manufactured by Liphatech, to exterminate black-tailed prairie dogs across the majority of their range (use of the poison is legal in Colorado, Kansas, Nebraska, New Mexico, North Dakota, Montana, Oklahoma, South Dakota, Texas and Wyoming). The agency approved the poison despite the risks of secondary poisoning to non-target species. Some geographic, timing and label restrictions are in place to avoid harm to listed species, for example, the use of Rozol is prohibited on black-footed ferret reintroduction sites. However, Rozol can still be used on any private or state inholdings within or adjacent to reintroduction sites. Impacts to unlisted species such as raptors and migratory birds are not addressed. Additionally, there is little to no enforcement of label restrictions. In August 2013, the EPA

approved the anticoagulant Kaput-D (diphacinone), manufactured by Scimetrics, for exterminating black-tailed prairie dogs in the same ten states where Rozol use is permitted.

D+ U.S. Fish and Wildlife Service (USFWS)

The USFWS administers the Endangered Species Act (*see* Box 1). The agency is responsible for preventing wildlife extinctions and takes the lead in recovering and conserving imperiled species, including federally listed "threatened" and "endangered" species. Of the prairie dog species, currently the Utah prairie dog is listed as "threatened" and the Mexican prairie dog is listed as "endangered" (foreign endangered species are primarily managed by the USFWS International Affairs Program, not the Endangered Species Program; *see* Box 5). The USFWS found the Gunnison's prairie dog "not warranted" for listing in November 2013. WildEarth Guardians is currently litigating over the negative finding (*see* Box 4). The USFWS also lost a court case in 2014 challenging the agency's refusal to list the white-tailed prairie dog. The USFWS must now reconsider the finding (*see* Box 7).

The USFWS administers the National Wildlife Refuge System, a network of protected areas established for the conservation and management of fish, wildlife and plant resources. Though mainly established with a focus on conserving migratory birds and/or listed species, some refuges host prairie dog populations and several have notable prairie dog conservation activities. Sevilleta National Wildlife Refuge (NWR) is a reintroduction site for Gunnison's prairie dogs (*see* "New Mexico"). The Wichita Mountains NWR in Oklahoma has a prairie dog viewing area. The Charles M. Russell NWR in Montana is participating in sylvatic plague vaccine field trials on black-tailed prairie dog habitat. The UL Bend NWR, situated within the Charles M. Russell NWR, is a black-footed ferret reintroduction site. Unfortunately the ferret population is struggling; out of 21 ferrets released in November 2013, only six were found alive in fall, 2014 (Matchett, 2015, p. 1).

C+ U.S. Forest Service (USFS)

All four U.S. prairie dog species reside on USFS-administered public lands in the West. Like the BLM, the USFS defers to state regulations on prairie dog shooting except in specific areas where the agency institutes shooting closures. Though generally the USFS does not allow poisoning, the agency has amended management plans to allow prairie dog poisoning in specific areas of the Buffalo Gap, Fort Pierre, Grand River, Little Missouri, Oglala, Pawnee, and Thunder Basin National Grasslands. In these instances, grassland or forest plans generally allow poisoning with zinc phosphide-treated oats in buffer zones adjacent to private lands, in order to prevent prairie dogs moving from federal land onto private land. Some grasslands are using nonlethal control methods in these situations including relocation, barrier fences, and vegetative barriers.

Rocky Mountain Region. The Rocky Mountain region encompasses Forest Service-administered public lands in the majority of South Dakota and Wyoming, and all of Nebraska, Kansas and Colorado. Gunnison's, black-tailed and white-tailed prairie dogs are all listed on the Regional Forester's "sensitive species" list, meaning they receive special emphasis in planning and management activities on National Forest-administered public lands to ensure their conservation. Shooting is prohibited in designated

Black-footed Ferret Recovery Areas in the Conata Basin in Buffalo Gap National Grassland in South Dakota[4] and Thunder Basin National Grassland in Wyoming.

The Nebraska and Samuel R. McKelvie National Forests and the Buffalo Gap, Oglala, and Fort Pierre National Grasslands are managed under one Forest Plan. On the Wall Ranger District of Buffalo Gap National Grassland (containing Conata Basin, which includes parts of Badlands National Park, Pine Ridge Indian Reservation, private lands and Buffalo Gap National Grassland, and is the location of one of the largest remaining concentrations of black-tailed prairie dog colonies in the U. S.), a sylvatic plague outbreak in May 2008 caused the loss of over 20,000 acres of prairie dog colonies. There were 35,350 active prairie dog colony acres in 2007, compared with only 10,041 acres in 2013. The next acreage survey will take place in 2015. The mean burrow density per colony has increased since 2013, from 42.1 burrows/acre in 2013 to 46.9 burrows/acre in 2013 (Griebel, 2014, p. 7). The Grassland has ongoing plague management and in 2014 dusted 10,987 acres on the Grassland and the adjacent Badlands National Park (*see* "NPS"). Management Area 3.63, a designated Black-footed Ferret Recovery Area, is closed to shooting. Four prairie dog colonies totaling 197 acres outside Management Area 3.63 are part of the field trials for the sylvatic plague vaccine, and are closed to shooting throughout the trial period. The Grassland is conducting research on burrowing owls, swift fox, black-footed ferrets, small mammals, and plague. The Land and Resource Management Plan for the Forests allows the use of zinc phosphide for prairie dog control in response to prairie dogs moving onto adjacent private lands. Poisoning is only allowed within one-half mile of Forest Service-administered public land-private land boundaries on Oglala and Buffalo Gap National Grasslands, and with one-fourth of a mile of the boundaries on Fort Pierre National Grassland. Prairie dogs were poisoned on 75 acres on the Buffalo Gap National Grassland adjacent to private land in 2014.

Oglala National Grassland surveyed 537 acres of active prairie dog colonies during the summer of 2014. The Grassland has been losing occupied acreage to suspected plague; the Grassland lost 722 acres in 2012, 93 acres in 2013, and 1,380 acres in 2014. Grassland personnel have collected flea samples and sent them to the University of South Dakota to be tested for the presence of plague, and are monitoring closely for changes in population or any positive confirmation of plague. Shooting regulations are governed by the state of Nebraska. To date, no prairie dogs have been lethally controlled on the Oglala, but the Grassland did approve poisoning on 257 acres.

Fort Pierre National Grassland surveyed colonies between July and August of 2014, and recorded 1,362 occupied acres distributed among 37 colonies. This is a decrease of about 670 acres from 2012. In 2011 the Grassland lost two small colonies (~50 acres) to suspected plague. In 2012 the Grassland sampled and tested fleas and found plague present. Since 2012, colonies have become spotty, but complete die-offs have not occurred and it is undetermined whether plague is the main cause of the decline. No prairie dog control occurred on the Grassland in 2014. Shooting is regulated by the state of South Dakota; shooters must obtain a license from the South Dakota Department of Game, Fish and Parks, and limit motorized travel to designated Forest Service roads.

Thunder Basin National Grassland in Wyoming currently has 24,824 acres of black-tailed prairie dogs. In partnership with Defenders of Wildlife, Prairie Dog Coalition of the Humane Society of the United States, Montana Conservation Corps, and World Wildlife Fund, the Grassland dusted 2,400 acres of colonies to prevent plague in 2014. The Grassland Management Plan allows prairie dog control with zinc phosphide between October 1 and December 31 in 1-mile buffers around residences. The

[4] See the Land and Resource Management Plan for the Buffalo Gap National Grassland: www.fs.usda.gov/detail/nebraska/landmanagement/?cid=FSM9_028050 (Chapter 3, Management Area Direction).

Box 3. Black-tailed Prairie Dog: In Limbo

Black-tailed prairie dog pups. Photo: Rich Reading.

Black-tailed prairie dog (*Cynomys ludovicianus)* populations once ranged across eleven U.S. states and parts of Mexico and Canada, covering 80 to 104 million acres (USFWS, 2009, p. 63,348). Conversion of native grasslands to agricultural use, particularly in the eastern portion of black-tailed prairie dog range, resulted in permanent loss of approximately 40 percent of their original habitat (USFWS, 2004, p. 51,221). Starting in the early 1900s, black-tailed prairie dogs were eliminated from up to 98 percent of their historic range, mainly due to widespread poisoning campaigns and sylvatic plague (Hoogland, 2006, pp. 90, 92). It is a testament to the resiliency of these animals that they survived a half-century of concerted poisoning efforts by state and federal governments and private landowners. The goal of many state policies was complete eradication and the federal government considered them a "'scourge' to be destroyed" (Hoogland, 2006, pp. 116-118).

The species has been petitioned for ESA listing four times since 1994 (USFWS, 2009, p. 63,344). Following two petitions to list black-tailed prairie dogs in 1998, the eleven states within black-tailed prairie dog range formed the Black-tailed Prairie Dog Conservation Team (*see* Box 2). The Team initiated development of a multi-state conservation plan. The black-tailed prairie dog was added to the list of candidate species under the Endangered Species Act (ESA) in 2000, but was removed by the USFWS in 2004. The repercussions were immediate. Poisoning on both public and private land immediately resumed, including in some of the largest prairie dog complexes on public lands with reintroduced black-footed ferrets. States passed bills funding poisoning and reclassifying black-tailed prairie dogs as "pests." South Dakota and Colorado removed bans on recreational shooting (Hoogland, 2006, p. 262). Three states began rejecting recommendations from the multi-state conservation plan, and Nebraska halted serious conservation efforts (Hoogland, 2006, pp. 262-263). "[W]ithout the prospect of federal listing, state agencies have less incentive to apply conservation strategies to the prairie dogs within their states" (Slobodchikoff et al., 2009, p. 198).

The species was re-petitioned for listing in 2007, but after an initial positive 90-day finding on the petition, the USFWS deemed the species "not warranted" for federal protection. This was mainly due to an increase in occupied acreage from the lows of the 1960s, when black-tailed prairie dog populations were at their nadir. Despite their modest rebound since the sixties, when they were reduced to 0.3 to 0.4 percent of their historic numbers, black-tailed prairie dogs today still inhabit only two to three percent of their historic range in the United States (USFWS, 2009, p. 63,347).

This small increase in occupied acreage does not justify the USFWS's declaration that black-tailed prairie dogs are "recovered" and abdication of its responsibilities to protect the species and the ecosystem that depends on it. Large black-tailed prairie dog colonies of more than 49,000 acres were common two centuries ago, and some exceptionally large colonies occupied nearly 5 million acres.

(Box 2, continued)
Today, there are only a few colonies larger than ~5,000 acres (Hoogland, 2006, p. 246). This means there are very few sites where prairie dog colonies fulfill their former ecological role and support the full complement of wildlife that once graced the prairie dog empire (Hoogland, 2006, pp. 233-234). Unfortunately, it is not possible to list an ecosystem under the ESA. Groups including Defenders of Wildlife, the Prairie Dog Coalition of the Humane Society of the United States, the Southern Plains Land Trust and WildEarth Guardians employ avenues beyond ESA listing such as outreach and education, land acquisition and restoration, relocation, and plague prevention to assist in black-tailed prairie dog conservation. Without strong legal protections like those of the ESA, however, it will be difficult to restore black-tailed prairie dogs to their rightful place in grassland ecosystems (Hoogland, 2006, p. 264).

Grassland poisoned 1,200 acres in 2014. Grassland personnel have installed two exclosure fences to create vegetative barriers preventing prairie dogs from entering private property, but one was removed a year after installation due to complaints from the adjacent private landowner. The remaining exclosure appears to have been successful at preventing recolonization of the area. Thunder Basin is working on vegetation monitoring in order to research the question of whether and to what extent cattle and prairie dogs compete for forage. The Grassland surveys for some prairie dog-associated species—swift fox, burrowing owl, and mountain plover—every year. The Grassland installed and maintains signs in the areas closed to shooting, totaling 85,000 acres. Under pressure from the Wyoming Governor's office, the USFS proposed an amendment to the current Prairie Dog Management Plan that would potentially allow poisoning or shooting in a one-fourth-mile buffer around all state and private land adjacent to Thunder Basin, which would result in an additional 1,687 acres open to lethal control. The amendment, if finalized, would also open the door for the use of anti-coagulants such as Rozol. The Forest Service is working on methods to address landowner concerns via the existing plan, which was developed cooperatively with stakeholders, rather than through the proposed amendment. There is a designated Black-footed Ferret Recovery Area on Thunder Basin. The Grassland has not yet obtained approval to reintroduce ferrets, but the USFWS is working on a statewide ESA section 10(j) designation for ferrets (which would authorize reintroduction as "non-essential, experimental" populations) in the state of Wyoming. The designation could provide more opportunities for reintroductions at appropriate sites.

The Pike and San Isabel National Forests and the Comanche and Cimarron National Grasslands are managed under one Forest Plan. Prairie dogs on the Comanche National Grassland in Colorado are recovering from a plague outbreak in 2005-2007, which caused a drastic decline. The Grassland is approaching pre-plague acreage levels, with approximately 19,000 acres of prairie dog colonies. Recreational shooting is the only form of prairie dog control currently allowed, and the Grassland office distributes maps for prairie dog shooters. Per Colorado state law, prairie dog shooting on public lands is prohibited from the end of February through June 15. In one area, the Grassland is working with the Southern Plains Land Trust (SPLT) to construct a prairie dog barrier fence along property boundaries following the successful relocation of prairie dogs onto to lands managed by SPLT from adjacent private lands. The project will likely move forward in late spring or early summer of 2015. The Cimarron, which is a separate block of land in neighboring Kansas, had approximately 1,600 acres of prairie dogs in 2013. The Grassland surveys acreage nearly every year. Populations have fluctuated—mainly because of plague outbreaks—between ~1,300 and ~5,800 acres since 2001. The Cimarron is a popular destination for recreational shooting, which is not restricted under Kansas state law, and the

Grassland office distributes maps for prairie dog shooters.[5] The Grassland does not use any other form of prairie dog control.

Black Hills National Forest in South Dakota has pockets of black-tailed prairie dog habitat interspersed amongst ponderosa pine. Occupied acreage has remained stable at between 200 and 300 acres for the last decade. The most recent acreage survey estimated 225 acres in 13 towns. Surveys are generally done every three to five years. Plague may have impacted some of the colonies, particularly one formerly-robust colony that shrank from 100 acres to 20 acres over a seven-year span, but the Forest has not done testing to confirm the presence of plague. The natural establishment of some new towns and the expansion of others have offset losses. There have been some requests for prairie dog control from adjacent private landowners, but the Forest has refrained from poisoning and asks that the affected party undertake control through shooting, which is regulated by the state of South Dakota. The Forest Plan has a goal of maintaining 200 to 300 acres of prairie dogs in at lest three towns. Burrowing owls are present in small numbers on the Forest.

The Rio Grande National Forest, which surrounds the San Luis Valley in Colorado, is home to a small population of the montane subspecies of Gunnison's prairie dog. Current estimates using GPS data suggest that the Forest supports eight active colonies that occupy approximately 350 acres, with at least six other colonies inactive as of 2014. The Forest boundary begins at about 7,800 feet above sea level, meaning the elevation in the majority of the Forest is high even for the montane subspecies of Gunnison's prairie dog. There is more available habitat and thus more prairie dogs present on BLM-administered public lands and private lands at lower elevations. Plague was first detected in fleas at Gunnison's prairie dog colonies in the San Luis Valley in 2011. The arrival of plague to the Valley is suspected to be the primary cause of a population decline beginning in the late 2000s. Since then the Forest has worked in concert with Colorado Parks and Wildlife (CPW) to dust and map known colonies each year, and will continue to do so annually in concert with the objectives, and with the support of, CPW (*see* "Colorado"). No poisoning or prairie dog control has occurred on Forest lands. Associated species such as burrowing owls and mountain plovers occur sporadically within Gunnison's prairie dog colonies in the San Luis Valley. However, none of these species have ever been detected on Forest lands, likely because of the high elevation.

The Pawnee National Grassland surveys prairie dog towns annually in the summer. In 2013 there were approximately 3,003 acres of active towns, and in 2014 that number grew to 3,582 acres. There are several inactive towns that Grassland staff believe were impacted by plague; 660 acres of inactive towns were surveyed in 2013, and 449 acres in 2014. The Pawnee National Grassland Black-tailed Prairie Dog Management Plan allows for zinc phosphide poisoning when prairie dogs are moving from the Grassland onto adjacent private land or when prairie dogs exceed the allowed acreage by allotment. About 225 acres of prairie dogs were poisoned in 2013, and 154 acres in 2014. The Grassland also installed a 0.38-mile barrier fence next to a 30-acre prairie dog town, with support from the Arapaho Roosevelt Pawnee Foundation. Wildlands Restoration volunteers began the installation in 2013 and completed it in 2014. Recreational shooting is managed under Colorado state law and is common on the Grassland.

Northern Region. The Northern Region encompasses Forest Service-administered public lands in Montana, North Dakota, and the northwest corner of South Dakota. The Region lists black-tailed and white-tailed prairie dogs as "sensitive species." Few national forests in the region have populations of prairie dogs, as they are outside the species' ranges.

[5] See www.fs.usda.gov/detail/psicc/about-forest/districts/?cid=stelprdb5261096

The Dakota Prairie Grasslands (which are spread out in discontinuous blocks in North and South Dakota and include the Cedar River, Grand River, Little Missouri, and Sheyenne National Grasslands) have prairie dog colonies on the Little Missouri (Medora and McKenzie Ranger Districts) and Grand River National Grasslands. The last survey, in 2012, found 7,740 occupied acres. Grasslands staff plan to map these colonies within the next two years as resources and weather conditions allow. There are no shooting restrictions, as per North and South Dakota state laws. The presence or extent of plague on the Grasslands is unknown, but it is present on nearby lands in South Dakota and across the western border of the Grasslands in Montana. Per the Dakota Prairie Grasslands Management Plan (Bosworth, 2001), use of zinc phosphide poison is limited to situations where prairie dogs may cause public health or safety risks, damage to infrastructure or facilities, or move from the Grassland onto adjoining lands where they are not wanted. An estimated 315 acres of prairie dogs were controlled on the Grasslands in 2014.[6] Grasslands staff are using two types of vegetative barriers to prevent unwanted prairie dog expansion onto adjoining lands, and have also experimented with other methods including raptor perches and visual barriers, with limited success. The Grassland Management Plan includes guidelines for increasing prairie dog numbers to support black-footed ferret recovery, and designates an area of the Little Missouri as a Black-footed Ferret Recovery Area. Prairie dog acreage is still too low for ferret reintroduction, either on the Recovery Area or outside of it, but if the size of any complex on the Grasslands exceeds 1,500 acres, the Grasslands will consult with the USFWS to determine if reintroduction is appropriate. Swift fox have been sighted near one of the four Districts of the Grasslands, and the Management Plan includes guidelines for protections of swift fox dens and habitat. The Grasslands conduct surveys of other prairie dog associates including burrowing owls, ferruginous hawks, golden eagles, bald eagles and bobcats.

There is one colony of white-tailed prairie dogs in the Beartooth Ranger District of the Custer-Gallatin National Forest in Montana, and populations of black-tailed prairie dogs on the Ashland Ranger District, which appear stable at approximately 1,000 acres among roughly 70 towns. The towns' expansion capabilities on the Ashland Ranger District are often limited because they are on islands of prairie habitat within a forest matrix. The District has surveyed roughly every 10 years. Plague has impacted about half of the towns but rarely if ever causes extirpation. Poisoning is not allowed on the National Forest.

Southwestern Region. The Southwestern Region encompasses Forest Service-administered public lands in Arizona, New Mexico, the Oklahoma panhandle, and the Texas portion of the Rita Blanca National Grassland. In the Southwestern Region both the prairie and montane subspecies of Gunnison's prairie dog are listed as "sensitive species," as is the black-tailed prairie dog.

The Kiowa and Rita Blanca National Grasslands (in Texas, Oklahoma, and New Mexico) have some of the largest acreages of prairie dogs in the region. Between the late 1990s and 2004, a plague outbreak diminished the black-tailed prairie dog population from ~7,000 to ~1,000 acres. The population began to rebound in 2004. Since 2004, plague outbreaks may have occurred, but none that were verified by testing. The Grasslands conduct surveys annually in November. The total acreage for both Grasslands in 2014 was 9,363 acres, with 1,682 on the Kiowa and the rest on the Rita Blanca, about half of which is in the area of Texas known as the High Lonesome. There is a general trend of expansion in colony size but density appears to have remained the same; this is probably due to drought.

The High Lonesome was identified as a potential black-footed ferret reintroduction site. It has the largest contiguous land base with populations of prairie dogs on the National Grasslands and is close to

[6] Note: methods of recording controlled acreage may vary between grasslands.

the minimum required for black-footed ferret reintroduction, but both acreage and density are still too low. The Forest Service and United States Department of Agriculture's (USDA) Texas Wildlife Services dusted approximately 600 acres of core populations for plague in 2012 and 2013. No dusting was carried out in 2014. The state wildlife agency put plans for reintroduction on hold indefinitely while focusing resources on conserving species currently present in Texas. The Forest Service is still managing the habitat to prepare for potential reintroduction. Cibola National Forest, of which the National Grasslands are a part, is developing a prairie dog conservation plan and will manage for prairie dogs regardless of whether or not black-footed ferrets are reintroduced in the near future. The plan is expected to address plague, education, and grazing practices.

Prairie dog shooting is allowed on the Kiowa National Grassland in New Mexico under New Mexico Department of Game and Fish regulations and on the Rita Blanca National Grassland in Texas under Texas Parks and Wildlife Department regulations. Three areas on the Rita Blanca in Texas, 515 acres altogether, are test sites for sylvatic plague vaccine trials, and the Forest Service has closed the areas to shooting for the duration of the trials. The Oklahoma Department of Wildlife Conservation does not allow prairie dog shooting on the Rita Blanca Grassland in Oklahoma. Poisoning is not authorized on the Kiowa and Rita Blanca Grasslands. The National Grasslands have undertaken conservation projects for prairie dog-associated species, including research on PVC escape pipes[7] to help swift foxes escape coyote predation. In 2013 the Grasslands managed two small prescribed burns to encourage mountain plover nesting. Burrowing owls are thought to be prolific on the Grasslands, though there have not been any recent population surveys.

The Kaibab National Forest in Arizona mapped approximately 5,700 acres of prairie dog colonies within the Forest (or adjacent if the colony bordered the Forest) on the Williams and Tusayan Ranger Districts. Approximately 2,000 of those acres occur on private in-holdings and 3,700 acres are on Forest land. This is nearly double the amount of prairie dogs mapped in 2011. Mapping will take place every three years, coinciding with mapping efforts by the Arizona Game and Fish Department. The Forest conducts burrowing owl surveys while mapping prairie dog colonies. Colonies are periodically impacted by plague but appear to recover in a few years. Dusting for plague is part of the Forest's translocation methodology. As part of a cooperative effort between the Williams Ranger District, Arizona Game and Fish Department, and Habitat Harmony (a non-profit focused on habitat preservation and prairie dog relocation), the Kaibab National Forest conducted translocations in 2011 and 2012 and will likely do so again in 2015. In 2011, 123 prairie dogs were translocated from a schoolyard in Williams, Arizona, to an abandoned colony on the Williams Ranger District and in 2012, 260 prairie dogs were translocated to an abandoned colony on the Tusayan Ranger District. Both colonies have expanded since the translocation. The Forest has an active grassland restoration program, restoring approximately 2,000 acres per year, and participates in local prairie dog and black-footed ferret working group meetings.

The Carson National Forest in New Mexico does not have a Forest-wide population or acreage estimate for Gunnison's prairie dogs, but estimates that there are 50,000 acres of potential habitat based on vegetation cover type and elevation models. Forest personnel survey specific sites when possible. The Forest contains a mosaic of valley bottoms and poderosa or mixed-conifer forest, meaning that habitat conditions are good but bounded in valley bottoms. There are few colonies larger than 10 acres. Burrowing owls are present on the Forest. The Forest is managing woody species encroachment in prairie grasslands and valley bottoms, and hopes that this restoration work will improve conditions for many species including prairie dogs. Shooting is regulated by the state of New Mexico and does not

[7] Plastic tubes large enough for a fox to escape through, but too small for a coyote to enter.

appear to be at a high level on the Forest.

Intermountain Region. The Intermountain Region encompasses Forest Service-administered public lands in Utah, Idaho, and western Wyoming. The Intermountain Region does not list any prairie dog species as "sensitive."

Most National Forests in this region are outside of prairie dog range. Some important exceptions are the Dixie and Fishlake National Forests in Utah, which manage two Utah prairie dog recovery units (*see* "Utah"): Awapa Plateau and Paunsaugunt. The Forests have been translocating Utah prairie dogs from private lands onto protected colonies in the Forests, and aggressively dusting for plague. In 2014 the Forest dusted over 3,000 acres of occupied Utah prairie dog habitat. The Forest translocated 741 Utah prairie dogs from private land in Garfield County onto eight prepared sites in the Powell Ranger District of Dixie National Forest under the Habitat Conservation Plan and ESA section 4(d) permitting process (*see* Box 6). A new site was prepared in late fall 2014 and is ready to receive prairie dogs in 2015.

The Ashley National Forest has four to six colonies of white-tailed prairie dogs in the Flaming Gorge area (northeastern Utah and southwestern Wyoming). The Forest does not currently conduct poisoning, population surveys or plague research or management.

Southern Region. The Southern Region administers all Forest Service lands in Texas and east to the Atlantic Ocean, with the exception of the Rita Blanca National Grassland. The Southern Region does not list any prairie dog species as "sensitive." The Caddo-Lyndon B. Johnson National Grasslands, in northeast Texas are the only Forest Service units in the Southern Region within historic prairie dog range. However, if prairie dogs existed on the Grasslands in the past they have been extirpated for at least 100 years, and there are no known wild populations within approximately 100 miles.

B U.S. National Park Service (NPS)

National Parks have stricter limits on activities than do BLM- and Forest Service-administered public lands. For example, there is no recreational shooting allowed, and poisoning or other lethal control of prairie dogs is not authorized unless otherwise specified in the Park's prairie dog management plan.

Prairie dog colonies have been recorded at 21 National Parks, National Monuments, and other NPS lands in the Midwest and Intermountain Regions (Licht et al., 2009, p. 87). Prairie dogs were extirpated from at least two of these units because of plague. Park Service prairie dog management straddles the line between the NPS's policy of conserving native wildlife and the need to appear as "good neighbors" and protect other park resources (e.g., cultural resources). The Park Service does not use or approve rodenticides with chlorophacinone as the active ingredient (e.g., Rozol) on NPS lands, due to the potential for inadvertently poisoning other animals.

Midwest Region. The Midwest Region manages NPS-administered lands within prairie dog range in North and South Dakota, Nebraska and Kansas. Wind Cave National Park maps half its occupied acreage every year. Results from 2014 indicate that the Park has approximately 1,500 acres of prairie dogs. Colonies on Wind Cave have shrunk by 700 to 800 acres over a three- to four-year period, but it is uncertain if this is due to plague, above-average precipitation,[8] black-footed ferret predation, lower

[8] Above-average precipitation and the resulting taller and denser vegetation may cause prairie dog colonies to contract, as individuals need less territory to provide them with food.

Box 4. Gunnison's Prairie Dog: In Litigation

Gunnison's prairie dog. Photo: Ramona Gaylord.

Gunnison's prairie dogs (*Cynomys gunnisoni*) have declined by 98 to 99 percent across their historic range in New Mexico, Colorado, Arizona, and Utah. Their occupied range declined from approximately 24 million acres in 1916 to between 340,000 and 500,000 acres in 2008 (USFWS, 2008, p. 6,666). According to the USFWS, the two subspecies of Gunnison's prairie dog (*Cynomys gunnisoni gunnisoni* and *C. g. zuniensis*) occupy approximately 20 percent of current available habitat (USFWS, 2013a, p. 68,670). A wide-ranging array of conservation groups and concerned citizens petitioned to have the Gunnison's prairie dog listed under the ESA in 2004. The USFWS placed the "montane" portion of the population on the candidate list in 2008, but the courts overturned this decision and required the USFWS to reevaluate the species' listing status, as the agency had improperly divided the species into two populations. In 2013, after genetic studies confirmed the existence of two subspecies of Gunnison's prairie dog, the USFWS found both subspecies "not warranted" on the basis of population surveys from the last three to six years and the ability to locally control plague outbreaks in highly managed situations (*see* USFWS, 2013a). Recent research suggests, however, that in addition to known dangers, drought is a serious threat to the "prairie" population (*see* Davidson et al., 2014).

WildEarth Guardians, represented by in-house attorneys and the Earthrise Law Center at Lewis and Clark Law School, is currently challenging the "not warranted" determination in federal court. The case is now in the briefing stage. In this case, the decision to protect prairie dogs hinges not on their level of imperilment or their importance to the ecosystem, but in large part on the USFWS's interpretation of the term "significant portion of range." If "range" is understood to include historic range, then Gunnison's prairie dogs have vanished from a significant portion; the overwhelming majority of it. The USFWS, however, defines "range" to mean only the areas *currently* occupied by the species. We argue that this is an egregious example of "ecological amnesia," wherein current conditions are compared to recent, degraded conditions rather than more appropriate baseline conditions.

numbers of bison grazing on the colonies, or non-native plant expansion. Prairie dogs had to abandon 300 to 400 acres of colonies that were overrun by white horehound (*Marrubium vulgare*), a non-native plant that the prairie dogs could not clip fast enough to prevent it from overrunning the colonies. The Park has conducted flea collections and some fleas have tested positive for sylvatic plague, but so far the Park has not had a known outbreak of the disease. Wind Cave dusted approximately 300 acres of prairie dogs in 2014, and hosts a plague vaccine trial site. The Park also has a black-footed ferret reintroduction site. The prairie dog management plan, signed in 2006, allows lethal control of prairie dogs via shooting by qualified Park staff. This method is used in preference to poisoning with zinc phosphide, and lethal control is used only in very limited circumstances, for example when prairie dogs move onto the boundary of private lands and create conflict with the landowner. The Park conducts educational programs on the ecological importance of prairie dogs and ferrets, and has reached over 2,000 visitors through campfire programs, discussions with college groups, prairie night hikes, and

environmental education for school groups and pre-schoolers. The Park also recently completed an exhibit on prairie dogs and ferrets for the visitor center. Every summer, the Park tracks burrowing owl presence. The Park, with Auburn University, is undertaking a study of the impacts of dusting activities on small mammal and insect communities within prairie dog burrows.

Badlands National Park has been hit hard by sylvatic plague; there are an estimated 2,000 occupied acres currently, down from about 10,000 acres in 2007. Plague claimed a number of colonies in 2007 and 2008; by 2012 the only colonies remaining were in areas where the Park regularly applies DeltaDust. Unfortunately, little sign of recolonization exists in the colonies that disappeared. The Park dusts in cooperation with the adjacent Buffalo Gap National Grassland. In 2014 the agencies dusted 465,034 burrows on 10,987 acres, of which 98,979 burrows and 1,887 acres were on the Park and the remainder on the Grassland. The Park conducts surveys annually. The Park addresses occasional requests for prairie dog control on a case-by-case basis based on the guidelines in the Park's prairie dog management plan. Poison is potentially allowed in a quarter-mile buffer between Park-administered public land and private land, however the Park prefers to trap and relocate whenever possible. In 2014 the only prairie dog control in the Park was a small amount of live-trapping around the Pinnacles headquarters. Some prairie dogs were relocated and some were killed and used as bait for an ongoing swift fox study. Swift foxes were reintroduced to the area in 2006, but their numbers are currently down. The study is attempting to determine possible causes for the population decline through trapping and collaring. Graduate students have collected data on burrowing owl populations for the last two years and intend to continue for the next two.

Theodore Roosevelt National Park had approximately 1,241 acres of prairie dog colonies in 2014, a 5.4 percent decrease from 2013. The Park surveys for prairie dogs annually. The current total area of colonies is 18.6 percent lower than the average from 2005 to 2013. The Park is preparing a prairie dog management plan. Park personnel believe it unlikely that the Park will need to use poisoning or shooting for prairie dog management, but the plan will probably include all options. On rare occasions, the Park has used relocation, barriers, and lethal trapping to control prairie dogs near campgrounds or other developed areas, but generally speaking the Park does not intervene in prairie dog colony growth or movement and allows them to expand and contract in response to natural conditions. Plague does not appear to be present in the Park. The Park completed a burrowing owl survey in 2014 and found several present.

Scott's Bluff National Monument monitors acreage, which in 2013 appeared stable at around 78 acres in two towns. The latest survey data is not yet available. The Monument is restoring approximately 30 acres of prairie on an old home site on the east side, and is preparing to reseed the area with native grasses after removing invasive plants (mainly downy and smooth brome) with herbicide in May, 2014. Prairie dogs have begun to move into the area and in the fall of 2014 there were approximately twelve burrows. If all goes well for these prairie dogs, the Monument may soon have a third prairie dog town.

Intermountain Region. The Intermountain Region manages NPS-administered lands in Montana, Wyoming, Utah, Colorado, Arizona, Texas, New Mexico, and Oklahoma. Petrified Forest National Park intends to begin work on a prairie dog management plan in the near future. There are between four and six colonies of Gunnison's prairie dogs on the Park. The Arizona Game and Fish Department mapped two colonies in 2014, but the results are not yet available. Plague first occurred in the Park in the late 1990s and has returned occasionally since. Park staff check on the prairie dog colonies every summer but have not been able to thoroughly measure acreage because the Park does not yet have a full-time biologist on staff. The Park is interested in actively increasing prairie dog acreage and is discussing strategies, including becoming a relocation site. An exciting development that could support

this goal is the recent purchase of a 26,000-acre private inholding (checkerboarded with state land) that could be restored to prime grassland habitat. There is one confirmed colony on the property already and there may be more.

Devils Tower National Monument has a 40-acre colony of black-tailed prairie dogs, which is so far plague-free. Weekly counts are conducted throughout the summer, and in 2014 the population size was estimated at 428 individuals. Devils Tower finalized its black-tailed prairie dog management plan in 2014. The plan provides for an adaptive management approach. Objectives include monitoring and maintaining a healthy prairie dog population, educating the public about prairie dogs, reducing the probability and impact of a plague outbreak, and protecting human health and safety and infrastructure. The plan allows for the prairie dog colony to expand and contract naturally, largely unimpeded. In high visitor-use areas such as the campground and picnic area, control methods including passive relocation, live trapping and relocation, barriers, or lethal control could be used to mitigate conflicts. Lethal control will be used only as a last resort. No control methods were implemented at Devils Tower in 2014. The Monument may install barrier fencing near the campground amphitheater in 2015. Devils Tower is increasing law enforcement patrols to reduce speed on the highway through the prairie dog town, and installed two temporary speed bumps in 2014 to protect prairie dogs. Devils Tower posted interpretive signs near the colony and rangers give guided talks about prairie dogs.

El Malpais National Monument has seven prairie dog colonies, ranging in size from 7 to 1,957 acres. The Monument does not undertake any prairie dog control. Small populations of burrowing owls and mountain plovers exist on the Monument, and burrowing owls have used one or two nests in the Monument since regular avian surveys began in 2012.

In 2011, there were about 1,600 black-tailed prairie dogs on 68 acres in Bent's Old Fort National Historic Site (NHS). They succumbed to plague in the winter of 2012-2013, along with larger colonies outside the NHS for at least 20 miles in every direction. There are no plans for reintroduction, but the Park is working to restore native grasses to the former prairie dog town, which was a plowed field in the 1970s and thus overtaken by invasive plants. The Park hopes this restoration will create a hospitable environment for prairie dogs if they return to the area. Sand Creek Massacre National Historic Site had 100 acres of black-tailed prairie dog colonies until plague outbreaks eliminated them in 2009. The NHS put a hold on developing a management plan until the population returns, but has no plans to actively reintroduce prairie dogs into the NHS.

The Hubbell Trading Post National Historic Site's prairie dog management plan is currently under revision. As of the last survey in 2011, 25 acres in the Historic Site were occupied. Prairie dog control is only allowed if prairie dogs become abundant in agricultural fields or if they present a health and safety risk to employees or the public. There has been no recent evidence of plague on the Historic Site.

Curecanti National Recreation Area (NRA) has recorded plague outbreaks approximately every 10 years since records were first kept in the 1970s. Seven colonies of Gunnison's prairie dogs once occupied the NRA, but plague outbreaks reduced that number to three colonies. The NRA dusts the remaining colonies to protect them from plague.

Dinosaur National Monument reports significant expansion of the prairie dog population in the last year. Recent acreage estimates are not available, but the Monument plans to survey within the next three years. The Monument is developing a prairie dog management plan. Nine prairie dogs were trapped and translocated away from Monument infrastructure into vacant burrows in an existing colony, and the Monument installed a barrier to prevent recolonization of the trapped area.

Box 5. Mexican Prairie Dog: Endangered

Mexican prairie dogs (*Cynomys mexicanus*) were listed as "endangered" in 1970 under the provisions of the Endangered Species Preservation Act, a precursor to the ESA. They are currently found in a range of approximately 124,000 acres in northwestern Mexico, in the states of Coahuila, Nuevo León, and San Luis Potosí. Historically, they were also found in the state of Zacatecas (Hardy, 2011, unpaginated). ESA protections for this species are limited, as Mexican prairie dogs occur entirely outside the borders of the U.S.. The U.S. is not authorized to develop recovery plans or designate critical habitat for species on foreign soil or in foreign waters, nor is Section 7 consultation required for federal actions carried out in foreign countries. The benefits of ESA listing to foreign species such as the Mexican prairie dog are fewer, but include increased awareness of the plight of the species, enforcement and implementation of international treaties aimed at protecting wildlife, and prohibitions on the import and export of listed species either to or from the U.S.. The ESA also creates avenues for the U.S. to provide assistance for conservation efforts in foreign countries. Section 8 of the ESA authorizes the Secretary to make USFWS employees available to foreign countries and international organizations to develop personnel resources and programs promoting conservation and to provide training in management, research, and law enforcement. It also authorizes the U.S. to provide financial assistance to countries developing local programs to conserve listed species.

Mexican prairie dogs. Photo: Sandy Nervig.

Bryce Canyon National Park continues its annual celebration of Utah Prairie Dog Day and conducts educational programs in schools in Garfield County (*see* "Utah"). The Park surveyed colonies in April and May of 2014. The total count within the Park was 99 adults, with an additional 63 adults on adjacent Forest Service-administered public land. This is an increase of 40 adults from last year's count. The Park estimates it has 600 acres of occupied and suitable/potential Utah prairie dog habitat within its borders. The Sunset Colony, which was last active in June 2010, was re-occupied in 2014 by a lone adult. To protect its Utah prairie dogs from plague, Bryce Canyon performs annual dusting of burrows. All active colonies in the Park (about 44 acres) were dusted in 2014.

D U.S.D.A. Wildlife Services (WS)

Wildlife Services (WS) is a program of the USDA's Animal Plant Health and Inspection Service (APHIS), charged with conducting "wildlife damage management." WS frequently partners with other federal agencies to provide wildlife damage management services. In the case of prairie dogs, WS has two main roles: lethally controlling prairie dogs in "boundary management" areas or conflict areas, and, conversely, protecting prairie dogs in current or potential black-footed ferret reintroduction sites through applications of DeltaDust for plague prevention. These two roles are sometimes at odds.

WS provided support for black-footed ferret reintroduction projects through plague management in three states in 2014. In Colorado, WS received cooperative funding from the USFWS to conduct plague management on nearly 7,000 acres of black-tailed prairie dog colonies, and participated in transport and release of black-footed ferrets on Soapstone Prairie Natural Area. In Arizona, in partnership with the Arizona Game and Fish Department, WS treated 1,021 acres of prairie dog colonies on the Espee Ranch in June and July in advance of an October 2014 black-footed ferret release (*see* "Arizona"). WS conducts ongoing disease monitoring in this reintroduction site. In Montana, WS dusted 1,100 acres to mitigate plague outbreaks on potential black-footed ferret release sites at the Fort Belknap Reservation in summer 2014. This project was a collaborative effort between WS, USFWS, Montana Fish, Wildlife and Parks, Fort Belknap Fish and Wildlife Department, and the World Wildlife Fund (*see* "Montana"). WS also dusted 653 acres in 2013 on the Rita Blanca National Grassland in Texas, however the project is currently on hold (*see* "USFS").

Wildlife Services' National Wildlife Research Center is a member of the Black-footed Ferret Executive Recovery Committee and provides assistance on technology transfer (sharing information about manufacturing and distribution) and registration issues for the sylvatic plague vaccine. WS representatives chair the prairie dog management subcommittee and co-chair the Sylvatic Plague Vaccine subcommittee of the Black-Footed Ferret Recovery Implementation Team.

WS utilizes shooting, burrow fumigation, and toxicant application to reduce or eliminate prairie dogs where requested and allowed based on state law and WS management priorities. Requests for control can come from a number of entities including state entities and private landowners. In the area of lethal control, data from 2013 (the most recent data available for public dissemination) indicates that WS shot 12,185 black-tailed prairie dogs and hand-caught one, fumigated 23,097 burrows, and treated 7,000 burrows with zinc phosphide poison; shot 848 Gunnison's prairie dogs and fumigated 9,125 burrows; and shot 11 white-tailed prairie dogs, trapped 3, and fumigated 6,293 burrows. In 2014 WS did not use Rozol due to potential risks to non-target species.

Some states require landowners (including federal land management agencies) with prairie dog colonies to prevent expansion of those colonies onto adjacent properties. Boundary management is also conducted via lethal control adjacent to properties enrolled in the Natural Resources Conservation Service's black-footed ferret safe harbors program, which incentivizes establishment and preservation of prairie dog colonies on private lands. WS was contracted for boundary management on approximately 3,600 acres of conservation areas in Kansas and Texas; areas on this acreage were controlled as needed. The remainder of acreage controlled in 2014 was due to conflicts with agriculture or other land uses, or human health and safety concerns.

B Arizona *(Black-tailed and Gunnison's prairie dogs)*

Black-tailed and Gunnison's prairie dogs are both designated "non-game" and "species of greatest conservation need" by the Arizona Game and Fish Department (AZGFD). Arizona once had between 650,000 and ~1.4 million acres of black-tailed prairie dogs, but they were extirpated by poisoning campaigns by 1940 (USFWS, 2009, p. 63,346). Since 2008, the state has worked to reintroduce black-tailed prairie dogs on BLM administered public lands and state trust lands within the Las Cienegas National Conservation Area. The AZGFD, in cooperation with the BLM, has made habitat improvements, dusted annually to prevent plague, and prohibited shooting on the reintroduction site. The AZGFD's goal is to restore 7,100 acres of black-tailed prairie dogs (1,000 of those acres on BLM-

administered public lands) by 2011 (Underwood & Van Pelt, 2008, p. 30). This goal is far from being met. All black-tailed prairie dog colonies are mapped yearly, and are monitored monthly and more intensely after releases of new prairie dogs. The last comprehensive counts and acreage surveys in 2014 yielded approximately 140 individuals in three colonies on 17.4 acres of occupied habitat. Monitoring documented the highest reproductive success (192 pups) since the reintroduction. The AZGFD is currently surveying a potential new reintroduction site in Pima County, and the County will be holding public meetings on reintroduction in 2015. All three black-tailed prairie dog colonies are restricted in size by invasive mesquite. The AZGFD and the BLM are continuing work to restore nearly 700 acres of grassland surrounding the colonies by removing mesquite, rehabilitating the soil, and managing prescribed burns. The BLM completed restoration on 329 acres and will complete restoration of the remaining acreage by June 2016.

The AZGFD funded the University of Arizona (UA) to conduct survivorship and genetics research on black-tailed prairie dogs. Survivorship research will provide the AZGFD with information to guide future management decisions for successful re-establishment. The AZGFD and the UA have been collecting genetic samples from black-tailed prairie dogs across their range to create a comprehensive genetic analysis. In 2014 the researchers obtained samples from Chihuahua, Mexico, and are collecting samples from Arizona museums to document historic genetic variability. This information will inform decisions about which donor sites would provide the closest genetic match to historic populations in Arizona for future reintroductions.

For Gunnison's prairie dogs, the AZGFD's goal is to recover 75 percent of the area occupied in the early 1900s before major poisoning campaigns began. Arizona once had approximately 6.6 million acres of Gunnison's prairie dogs (USFWS, 2008, p. 6,664). The AZGFD mapped 108,353 acres of Gunnison's prairie dogs in Arizona in 2007 (excluding tribal land: this number was a minimum count) (Underwood, 2007, p. 21). The state resurveyed Gunnison's prairie dog colonies in 2011 and mapped 109,402 occupied acres. The AZGFD, the Williams Ranger District of the U.S. Forest Service and Camp Navajo conducted statewide surveys in summer 2014. The surveys mapped the perimeters of active Gunnison's prairie dog colonies. Poor weather condition prevented the AZGFD from completing the surveys; work will resume in summer 2015. In some areas of northern Arizona, colonies declined between the summer of 2014 and October 2014. The AZGFD believes the decline was caused by a combination of tularemia[9] and plague, and dusted 455 acres of burrows to prevent further declines. The Arizona Gunnison's Prairie Dog Working Group is developing a translocation protocol to provide guidance for translocations in the future. This protocol should be completed by summer 2015. Translocations will serve as a mechanism to reduce or remove populations in urban areas where they could be considered pests, to move populations away from areas of pending development, and to increase prairie dog populations on black-footed ferret release sites. Shooting Gunnison's prairie dogs in Arizona is allowed with the exception of a spring closure during the breeding season from April 1 to June 15. The state does not limit poisoning of Gunnison's prairie dogs. However the state does not participate in poisoning and prohibits the use of Rozol.

The Espee Ranch is home to the only field trial site for the sylvatic plague vaccine in Arizona. 2014 was the second year of a three-year trial of the vaccine at a pair of 50-acre sites on the Ranch. This year the AZGFD trapped Gunnison's prairie dogs and other small mammals to provide data to the United States Geological Survey on the effectiveness of the vaccine.

[9] An infectious disease present in North American rodents caused by the bacterium *Francisella tularensis*.

The AZGFD is creating a management plan for black-footed ferrets which, when completed, will outline the historical and current status of the species in Arizona and the potential for new release areas in the future. Currently two black-footed ferret release sites exist on Gunnison's prairie dog colonies in the state—Aubrey Valley and Espee Ranch[10]—which are monitored annually. Acreage occupied by prairie dogs in the Aubrey Valley declined from 54,195 acres in 2013 to 48,029 acres, likely due to drought conditions across the region. In 2014, the Espee Ranch had 13,763 occupied acres. The Espee Ranch reintroduction site is the first property in Arizona enrolled in the Black-footed Ferret Programmatic Safe Harbor Agreement, and ferrets were released there in May and October 2014 after 1,000 acres of prairie dog colonies were dusted for plague. The AZGFD conducted spotlighting surveys for black-footed ferrets in spring and fall 2014 at Aubrey Valley, recording 50 individuals.

B- Colorado *(Black-tailed, Gunnison's, and white-tailed prairie dogs)*

The three prairie dog species calling Colorado home are designated as "small game" by the state. Under the state's Comprehensive Wildlife Conservation Strategy, all prairie dog species are listed as "species of greatest conservation need." In contrast, the Colorado Department of Agriculture designates prairie dogs "destructive rodent pests." Colorado Parks and Wildlife (CPW) does not have regulatory authority over the poisoning of prairie dogs.

Colorado once had between three million and seven million acres of black-tailed prairie dogs (USFWS, 2009, p. 63,346). CPW reported the state had approximately 800,000 active acres (plus or minus ~80,000 acres) of black-tailed prairie dogs in 2006 using aerial surveys. The next survey will likely take place in 2015 or 2016. CPW is not currently dusting black-tailed prairie dogs for plague except for limited research purposes.

Surveys were completed in 2005, 2007, and 2010 for Gunnison's prairie dogs, showing a stable statewide occupancy rate. The next occupancy survey for Gunnison's prairie dogs is planned for 2016. CPW continues to proactively manage plague on Gunnison's prairie dog colonies. In 2014, CPW dusted over 1,850 acres in South Park, Gunnison, San Luis Valley, and the southeast portions of the Gunnison's prairie dog range. In collaboration with the University of Colorado at Boulder, CPW determined that there is strong scientific support for the conclusion that two subspecies of Gunnison's prairie dog exist: *Cynomys gunnisoni gunnisoni* and *C. g. zuniensis* (*see* Sackett et al., 2014).

CPW conducted surveys for white-tailed prairie dogs in 2004, 2008 and 2011. The results from the 2004 and 2008 surveys showed that populations were stable across the state, and the analysis for 2011 data suggest stability except in the northwestern portion of the study area, where the population appears to have decreased due to plague (Seglund, 2012, p. 8). The next survey is planned for 2016.

In 2014, CPW continued sylvatic plague vaccine trials on three pairs of study areas (six sites) on black-tailed prairie dog colonies. Trials were also conducted on three pairs of study sites on Gunnison's prairie dog colonies. This second year of the study appears successful, and trials will continue into 2015 at minimum, with continued vaccination and data collection to determine the efficacy of the vaccine on prairie dog survival. In coordination with the vaccine trials, CPW's Avian Research Group initiated a study on the impacts of plague management on avian species associated with prairie dog colonies. The Group's goals are to study the short-term responses of avian species to plague events and any long-

[10] Several miles separate the black-footed ferret reintroduction site and the plague vaccine trial site.

term potential changes in avian communities that may be caused by plague management. The study areas include all the vaccine trial areas as well as dusted and untreated prairie dog colonies nearby.

One of the potential strategies outlined in CPW's Gunnison's and White-tailed Prairie Dog Conservation Strategy (Seglund & Schnurr, 2010) is to reestablish Gunnison's and/or white-tailed prairie dogs in high-priority suitable, formerly occupied habitat. CPW implements Action Plans for these two species within nine Individual Population Areas: populations of prairie dogs that are physically separated from each other or face unique management issues. Action Plans were developed collaboratively with stakeholders and address the issues pertinent to white-tailed or Gunnison's prairie dogs in each Individual Population Area including plague, population monitoring, population reestablishment, poisoning, urban development, and associated species. CPW conducts prairie dog education programs based on local needs.

Colorado's unique relocation law, SB99-111, requires anyone wishing to relocate prairie dogs across county lines to obtain the approval of the receiving county commission as well as a permit from CPW. Because county commissions can and do deny permission, this law complicates and inhibits relocation of (mainly black-tailed) prairie dogs from areas slated for development. Colorado prohibits prairie dog shooting on public lands from the end of February through June 15 for all three species of prairie dogs in the state to protect pregnant females and newborns.

Until 2013, state legislative approval was required for the reintroduction of black-footed ferrets in Colorado. With the passage of SB13-169 and HB14-1267, ferrets can be reintroduced on private lands and properties owned by political subdivisions of the state (for example county and city lands) as long as the lands are enrolled under the programmatic Safe Harbor Agreement. As a result, in 2013 black-footed ferrets were released onto the Walker Ranch, west of Pueblo, Colorado. In 2014, the Natural Resources Conservation Service introduced a Black-footed Ferret Incentive Program in Colorado, which pays private landowners a per-acre fee to manage their rangeland for black-footed ferrets and conserve prairie dog towns. Over 15,000 acres were enrolled. More ferrets were released on the Walker Ranch in 2014 to support the established population, and ferrets were released on three new sites in Larimer, Prowers, and Baca counties.

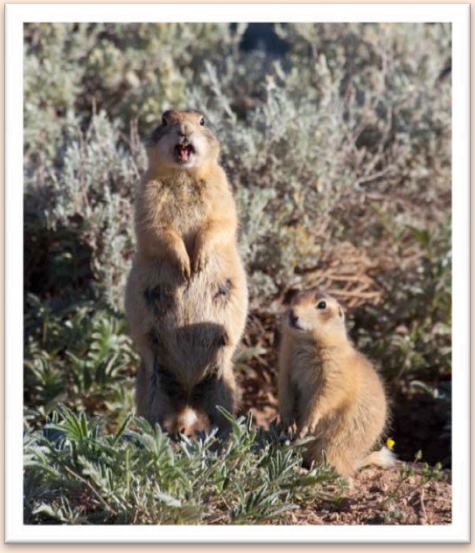
D- Kansas *(Black-tailed prairie dogs)*

Kansas historically had 2 million to 7.5 million acres of black-tailed prairie dogs (USFWS, 2009, p. 63,347). Kansas' most recent prairie dog survey, conducted in 2008, found 148,000 acres of prairie dogs. The next survey will be conducted once National Agriculture Imagery Program (NAIP) aerial images for Kansas becomes available in spring 2015. The black-tailed prairie dog is listed as a species of "greatest conservation need" in the Kansas Comprehensive Wildlife Conservation Strategy, which provides some management guidance but no regulatory protection. The Kansas Department of Wildlife, Parks and Tourism (KDWPT) classifies black-tailed prairie dogs as a "nongame wildlife" species and produced a prairie dog conservation plan in 2002 (KSPDWG, 2002). The state's goal was to maintain 130,000 occupied acres of prairie dogs and increase the number to 150,000 acres by 2012 if incentive programs were developed at the federal level (KSPDWG, 2002, p. 10); however no federal programs have been developed and the goal has not been met or revised.

It is unlikely that acreage has increased since 2008, as the KDWPT does not have authority over the use of toxicants and poisons are widely used in the state to exterminate prairie dogs. State laws give

Box 6. Utah Prairie Dog: Threatened

Utah prairie dogs (*Cynomys parvidens*) declined from an historical estimate of ~95,000[11] to a low of 3,300 individuals in the early 1970s (USFWS, 2012b, p. 1.3-1). The Utah prairie dog was placed on the federal government's list of "species at risk of extinction" in 1973, the same year the ESA was passed into law. Utah prairie dog populations have increased since they were listed; the USFWS reported in 2011 that counts had been steady or rising for the past decade (Manno, 2014, p. 129). 2014 spring counts found 11,349 adults above ground, which likely represents 40 to 60 percent of the population. The USFWS downlisted the species from "endangered" to "threatened" in 1984.



Utah prairie dogs. Photo: Sandy Nervig.

Despite its federal status and a population increase from historic lows, the species still faces considerable threats including habitat loss, development, sylvatic plague, and illegal shooting and poisoning. Approximately 75 percent of the remaining population lives on private or non-federal lands, creating conflicts between development and species conservation (Manno, 2014, p. 129). Conservation efforts must often contend with state and county government hostility to prairie dog conservation and hostility to the ESA itself. Utah is attempting several cooperative solutions to resolve these conflicts and conserve prairie dogs on private lands, including Habitat Credit Exchange Programs and Safe Harbor Agreements (*see* "Utah"). If given a chance to work, these approaches may provide a positive path forward.

poisoning control to counties. Kansas Statute 80-1202, passed in 1901, allows counties to poison prairie dogs on private land without the owner's permission and at their expense. Kansas enforces no limit or seasonal closure on prairie dog shooting. Non-residents need a license to shoot prairie dogs while residents are not required to have a license to shoot prairie dogs, moles or gophers. Plague has impacted a few thousand acres in southwestern Kansas but so far the impacts are minimal. The KDWPT does not take actions to prevent or mitigate disease outbreaks. The KDWPT developed a new survey technique for swift fox and will begin survey efforts in late winter of 2015.

D+ Montana *(Black-tailed and white-tailed prairie dogs)*

Montana Fish, Wildlife and Parks (MFWP) classifies prairie dogs as a "nongame species" and Montana's Comprehensive Wildlife Conservation Strategy lists both resident prairie dog species as high priority "species of concern." The Montana Department of Agriculture designates both black-tailed and white-tailed prairie dogs as "vertebrate pests." The state conservation plan applies in situations outside of Department of Agriculture authority. No prohibition on shooting either species exists and a license is not required (USFWS, 2010, p. 30,358). Prairie dog poisoning is unregulated. If the area to be treated

[11] These estimates were derived from informal interviews rather than survey data.

exceeds 80 acres in size, the Montana Department of Agriculture recommends consultation with the U.S. Fish and Wildlife Service (Montana Department of Agriculture, 2006, p. 3). In the Black-footed Ferret Recovery Area in the UL Bend National Wildlife Refuge, recreational shooting of prairie dogs and poisoning are prohibited.

Montana once had ~1.5 million to ~10.7 million acres of black-tailed prairie dogs (USFWS, 2009, p. 63,347). A 2008 survey found approximately 191,000 acres of occupied colonies and approximately 32,000 acres of inactive colonies in the state (Rauscher et al., 2013, pp. 4-5). In 2010 and 2011, four black-tailed prairie dog complexes located in southeastern and central Montana were identified as potentially having at least 5,000 acres of occupied habitat from mapping efforts using NAIP aerial images. During May and June of 2012, MFWP mapped 175 colonies within these complexes, covering 7,329 acres. Results are complex-specific and permission for ground-truthing[12] was denied in many areas on private land. However the results are useful in guiding ongoing discussions about where to focus conservation efforts and citing of potential black-footed ferret relocation sites. The date of the next survey is uncertain; the state is working with WAFWA to coordinate the planned large-scale survey of black-tailed prairie dogs (*see* Box 2).

Montana is at the northern edge of white-tailed prairie dog distribution. There is no historic estimate of occupied acreage, but white-tailed prairie dogs were likely restricted to a triangular area on the central southern border of the state (Seglund, 2004, p. 38). As of 2009 there was an estimated 227 acres of white-tailed prairie dogs (USFWS, 2010, p. 30,342). White-tailed prairie dog colonies in Montana are not mapped annually and the current acreage is uncertain, though a small population is believed to persist in Carbon County.

Though MFWP does not specifically monitor plague, the recent survey efforts revealed active plague throughout the state. In 2014 MFWP contracted Wildlife Services to dust 1,100 acres on tribal land at Fort Belknap in preparation for a black-footed ferret release (*see* "Wildlife Services"). There is one sylvatic plague vaccine trial site in Montana, on the Charles M. Russell NWR.

MFWP is exploring the use of incentive programs for landowners to maintain prairie dog habitat, and is working with U.S. Fish and Wildlife Service and Natural Resources Conservation Service to enroll interested landowners in Safe Harbor Agreements that could lead to more black-footed ferret releases. MFWP is conducting a swift fox survey in northeastern Montana in cooperation with Canadian counterparts across the border.

F Nebraska *(Black-tailed prairie dogs)*

Nebraska once had an estimated six million to nine million acres of black-tailed prairie dogs (USFWS, 2009, p. 63,347). The state estimated it had ~137,000 occupied acres in 2003. In 2002, the Nebraska Game and Parks Board of Commissioners ordered the state's Game and Parks department to stop all prairie dog conservation activities, including development of a conservation plan and monitoring (Johnsgard, 2005, p. xi). The ban on research was later rescinded. Nebraska recently rejoined the Grassland Initiative and hopes to resurvey prairie dog range in the near future. Nebraska has no limits on shooting prairie dogs, except that non-residents must obtain a license. The Black-tailed Prairie Dog Management Act (LB473), passed in March 2012, gives counties the power and the duty to control

[12] Conducting on-the-ground visits to a percentage of areas surveyed via overflights or aerial photos in order to verify that those surveys correctly distinguished occupied from unoccupied acreage.

prairie dogs on private and non-federal public land. In February of 2014, Sheridan County instituted a Black-tailed Prairie Dog Management Plan under the Act. State Senator Ernie Chambers submitted a measure (LB673) in January 2014 that would repeal the Black-tailed Prairie Dog Management Act; the bill has been referred to committee and a hearing date will be scheduled in early 2015.

D New Mexico *(Black-tailed and Gunnison's prairie dogs)*

Historically, black-tailed prairie dogs occupied approximately 6.6 million to nine million acres in New Mexico (USFWS, 2009, p. 63,347). The New Mexico Natural Heritage program (NMNH) used NAIP aerial images from 2005 to estimate the area of prairie dog disturbance over the historical range of the black-tailed prairie dog. The NMNH estimated ~40,000 acres of active black-tailed prairie dog towns in the study area, an apparent increase from an estimate based on 1996-1997 imagery (these area estimates should be considered approximate only). It also appears that prairie dog disturbance increased in the northern part of the study area and decreased in the southern part (Johnson et al., 2010a, p. 24). Using a similar method—aerial imagery and a model—the NMNH estimated the area of active Gunnison's prairie dog towns on the Navajo Nation and Reservation of the Hopi Tribe at ~254,000 acres (only a portion of this acreage is in New Mexico; the remaining area of the Navajo Nation falls within Utah and Arizona, and the Reservation of the Hopi Tribe is entirely within Arizona) (Johnson et al., 2010b, p. 18). The New Mexico Department of Game and Fish (NMDGF) is currently reviewing NAIP imagery to select black-tailed prairie dog survey sites in New Mexico as part of the large-scale survey planned through WAFWA, and ground-truthing of these sites will begin in 2015. The NMDGF has conducted some limited population surveys for Gunnison's prairie dogs on BLM-administered public land in the Cebolla Wilderness and on the newly-designated Rio Grande del Norte National Monument, which hosts a large colony. These specific surveys will continue in 2015. The next statewide occupancy survey for Gunnison's prairie dogs is planned for 2016.

Both black-tailed and Gunnison's prairie dogs are listed as "species of greatest conservation need" in New Mexico's Comprehensive Wildlife Conservation Strategy, and are expected to remain so in the upcoming 2016 revision. However as neither species is considered "small game," the NMDGF does not have the authority to issue regulations on prairie dog shooting such as bag limits or seasonal limitations. Shooting is banned on state trust lands but is otherwise unrestricted. The NMDGF does not regulate use of rodenticides. Rozol is legal for use on black-tailed prairie dogs in eastern counties of New Mexico. Black-tailed prairie dog translocation is prohibited in Chavez and Curry counties by county ordinance.

New Mexico released a draft conservation plan for the Gunnison's prairie dog in 2008, but has yet to finalize the plan. The state does not monitor or mitigate for plague in prairie dogs. New Mexico has no permitting process for relocation of prairie dogs, which can lead to difficulty in tracking relocation projects. Currently there are no specific incentive programs for prairie dog conservation. The Santa Fe Field Office of the Natural Resources Conservation Service currently has one Environmental Quality Incentives Program application in which a landowner is working with WildEarth Guardians and Great Plains Restoration Council to improve habitat and reintroduce Gunnison's prairie dogs into the Galisteo Basin. One of three planned prairie dog towns was established in the Southern Crescent portion of the Basin, and restoration and reintroduction work continues.

Sevilleta National Wildlife Refuge has been reintroducing and monitoring Gunnison's prairie dogs on three sites of about 40 acres each since 2005. The colony has struggled, with drought leading to low survival (*see* Davidson et al., 2014). The BLM translocated Gunnison's prairie dogs from the

City of Santa Fe into an existing colony on the El Malpais National Conservation Area and is currently monitoring the project's success (*see* "BLM").

F North Dakota *(Black-tailed prairie dogs)*

Black-tailed prairie dogs once inhabited an area of about two million acres in North Dakota (USFWS, 2009, p. 63,347). North Dakota is at the northeastern edge of black-tailed prairie dog distribution, and prairie dogs are found only in the southwest corner of the state. Based on the latest survey from the North Dakota Game and Fish Department (NDGFD) using aerial photos from 2012 and ground-truthing, occupied acreage has decreased to ~18,000 acres from ~22,600 acres in 2006. It is unclear whether this decline is due to differing survey methodology, a smaller survey area, or an actual decline in population. North Dakota's Comprehensive Wildlife Conservation Strategy lists the black-tailed prairie dog as a "species of conservation priority." The state's prairie dog management plan calls for a statewide survey every three to five years. The North Dakota Department of Agriculture designates prairie dogs as a "pest species." Poisoning is legal on private lands and illegal on public lands, although it does occur there (Hagen et al., 2005, p. 305). There have been no reported plague outbreaks, and the state does not manage for plague. North Dakota has no limits on prairie dog shooting, except for requiring non-residents to obtain a license. Rozol is legal for use on prairie dogs in North Dakota. The NDGFD provides a map of the general locations of prairie dog towns in the hunting/trapping section of its website.[13] The NDGFD is planning swift fox surveys in the southwest corner of the state for summer 2015.

C+ Oklahoma *(Black-tailed prairie dogs)*

Oklahoma once had 950,000 to ~4.6 million acres of black-tailed prairie dogs (USFWS, 2009, p. 63,347). Ten years ago, occupied acreage was between 38,000 and 42,000 acres. Occupied acreage has contracted due to plague outbreaks in the panhandle, followed by ongoing drought that slowed recovery. The most recent surveys of prairie dog range, using statewide aerial photos and ground-truthing in 2013, estimated 18,000 to 22,000 occupied acres remaining. The state has plans to survey on a continuing basis using improved aerial survey technology, with overflights every other year on odd years. The Oklahoma Department of Wildlife Conservation (ODWC) classifies prairie dogs as "wildlife-nongame" and they are listed as a "species of concern" in the state's Comprehensive Wildlife Conservation Strategy. Oklahoma is the only state that requires a permit for any prairie dog poisoning on private lands and prohibits killing of prairie dogs with explosives. Moreover, the state will not issue permits to private landowners to poison prairie dogs in counties that have fewer than 1,000 prairie dogs or fewer than 100 occupied acres. Poisoning in the state is relatively rare and usually occurs when colonies shift into agricultural areas due to drought. Over the last year fewer than 100 acres were poisoned. Until recently, landowners with 10 or more occupied acres could enroll in a Landowner Incentive Program and receive an annual incentive payment for conserving prairie dogs on their land. Unfortunately, funding for the program expired at the end of September 2014. The state is focusing most incentive program funding on lesser prairie-chicken conservation. Prairie dog shooting is unlimited on most land (a license is required), but is prohibited on wildlife management areas owned or managed by the ODWC. However, most of the prairie dog acreage in Oklahoma is on private lands. The state monitors, but does not mitigate for plague. In 2014 the ODWC relocated prairie dogs from a campground at Canton Lake Park to the Washita National Wildlife Refuge and the Canton Wildlife

[13] See gf.nd.gov/hunting

Management Area. The ODWC also relocated 248 prairie dogs from the suburbs of Oklahoma City. Fifty prairie dogs went to private land in Woodward County, in an attempt to reestablish two abandoned colonies. One colony was successfully reestablished. The rest of the relocated prairie dogs went to reestablish a colony on the Cimarron Hills Wildlife Management Area. That colony was successfully reestablished despite predation by ferruginous hawks.

D South Dakota *(Black-tailed prairie dogs)*

Approximately 1.8 million to 6.4 million acres of black-tailed prairie dogs once existed in South Dakota (USFWS, 2009, p. 63,347). South Dakota Game, Fish and Parks (SDGFP) estimated there were 630,849 colony acres in 2008. The latest survey used NAIP imagery from 2012, which was mapped and analyzed in 2013 and 2014. The report is not yet available to the public, but is in the final stages of editing. NAIP imagery from 2014 will be used to map a 20-percent sample of black-tailed prairie dog range in 2015. South Dakota classifies the black-tailed prairie dog as a "game species," "varmint/predator species," and as a "species of management concern," meaning the state believes it may require either control or protection depending on variables including climate, disease, and population viability. SDGFP may control prairie dogs as "pests" if: 1) sylvatic plague is reported in any prairie dog colony east of the Rocky Mountains; 2) SDGFP determines that the population of prairie dogs within the state, including tribal lands, exceeds the 145,000 acre level; 3) prairie dogs are colonizing lands where they are unwanted by the landowner; 4) lands adjacent to the impacted owner's land do not have a maintained one-mile buffer zone, or other mutually agreed border, in which prairie dog control is applied; and 5) the owner of the impacted land has filed a written complaint of encroachment requesting mitigation or abatement with the South Dakota Department of Agriculture and served a copy upon the owner of the lands from which the prairie dogs are encroaching, or filed a written complaint with the county weed and pest board. SDGFP poisoned 1,250 acres of black-tailed prairie dogs in 2014. Counties also poison colonies, but it is difficult to obtain an estimate of acreage controlled. Rozol is legal for use on black-tailed prairie dogs in South Dakota. SDGFP, however, does not use the anticoagulant poison.

A prairie dog shooting season is open statewide year-round, with no limitation on shooting hours and no daily or possession limits (with the exception of the Black-footed Ferret Recovery Area in Conata Basin, which is closed to shooting (*see* "USFS")). Plague is predicted to be present in most if not all counties west of the Missouri River. The National Park Service, U.S. Forest Service, U.S. Fish and Wildlife Service, and World Wildlife Fund are undertaking measures to counteract plague in parts of Conata Basin. Badlands National Park dusts in cooperation with the adjacent Buffalo Gap National Grassland; in 2014 the agencies dusted 465,034 burrows on 10,987 acres (*see* "NPS" *and* "USFS"). There are three field trial sites for the sylvatic plague vaccine in South Dakota; on tribal land in the Lower Brule, on Wind Cave National Park, and on the Wall Ranger District of the Buffalo Gap National Grassland. There are ongoing studies of swift fox at Badlands National Park and Conata Basin, and of burrowing owl distribution in western South Dakota. Six black-footed ferret reintroduction sites exist in South Dakota, several of which have been badly impacted by plague. One additional site is being evaluated for a possible reintroduction.

Two years ago, the National Resources Conservation Service introduced a black-footed ferret initiative as part of the Wildlife Habitat Incentive Program intended to help landowners maintain prairie dog habitat; however there were no enrollments. Currently, there is money set aside under the Environmental Quality Incentives Program for any private landowners in South Dakota who might be interested in maintaining prairie dogs on their property.

D+ Texas *(Black-tailed prairie dogs)*

At one time, Texas had 16.7 million to 57.6 million acres of black-tailed prairie dogs (USFWS, 2009, p. 63,347). The Texas Parks and Wildlife Department (TPWD) estimated 115,000 acres occupied by prairie dogs in its last survey in 2006. The average colony size in Texas is less than one hundred acres, but the state has at least two colonies larger than 5,000 acres. The TPWD designated black-tailed prairie dogs as nongame and a "species of concern." Texas' management plan, introduced in 2004, set a goal of 293,129 acres of occupied habitat by 2011 (TXPDWG, 2004, p. v), which was not met. Most of the state is private land, making the goal more difficult to achieve. The state allows live-collecting of fewer than 25 prairie dogs without a permit; capture and possession of more than 25 with a nongame permit; and capture and sale of prairie dogs with a nongame commercial dealer's permit. The state Agriculture Department distributes poison to control prairie dogs, but requests made for the poison are decreasing. The TPWD itself does not poison prairie dogs, and if appropriate may facilitate relocation. The state put plans for black-footed ferret reintroduction on hold indefinitely while it focuses resources on conserving species currently present in Texas. The Forest Service continues to manage for reintroduction potential on the Rita Blanca National Grassland (*see* "USFS"). Two colonies on the Rita Blanca, 515 acres altogether, are test sites for sylvatic plague vaccine trials, and therefore are closed to shooting.

The TPWD has some incentive and conservation programs that may benefit black-tailed prairie dogs, thought not directed at the species specifically. These include the state's Landowner Incentive Program, the Candidate Conservation Agreement for the lesser prairie-chicken, and the state's work with the USFWS and other partners to draft a Safe Harbor Agreement for the black-footed ferret which would support reintroduction. The TPWD established two black-tailed prairie dog colonies in Caprock Canyons State Park, which are expanding. The State Park is in the process of removing invasive plant species from its prairies as part of a restoration program, and hopes to establish a third prairie dog colony in 2015.

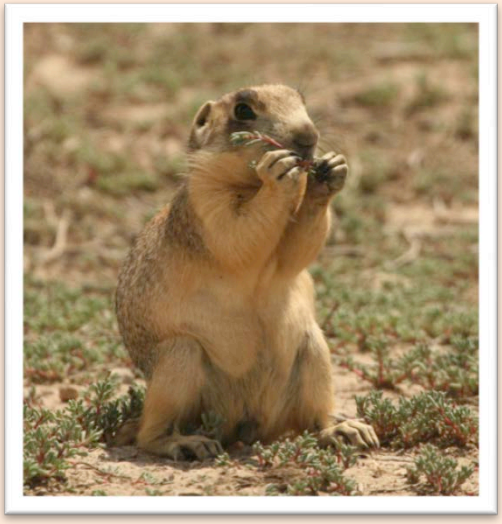
C Utah *(Gunnison's, Utah, and white-tailed prairie dogs)*

The Utah prairie dog is federally listed as a "threatened" species, giving the USFWS authority over Utah prairie dog recovery efforts. USFWS works in cooperation with partners on these efforts and the Utah Division of Wildlife Resources (UDWR) accomplishes the majority of the fieldwork. The UDWR is working toward goals set forth in the 2012 Recovery Plan for the species (USFWS, 2012) which, when achieved, could trigger the delisting process. The Recovery Plan focuses on three "Recovery Units;" areas that are essential to the survival and recovery of the entire species. These Recovery Units are geographically identifiable—the Awapa Plateau Recovery Unit, the Paunsaugunt Recovery Unit, and the West Desert Recovery Unit—and contain high concentration of Utah prairie dogs. The Recovery Implementation Team (RIT), a multi-agency, public-private partnership whose mission is to implement the Utah Prairie Dog Recovery Implementation Program (UPDRIP) met several times in 2014 to produce an action plan for the next five years. The plan specifies locations, costs, and activities needed to achieve the goals identified in the Recovery Plan. The action plan was distributed among congressional delegations for funding consideration.

In November 2014, a District Court judge in Utah ruled that the USFWS does not have the authority to regulate the Utah prairie dog under the Commerce Clause, as the species occurs only in Utah. This ruling is contrary to a long established body of case law regarding the Endangered Species Act, and

Box 7. White-tailed Prairie Dog: In Review

White-tailed prairie dogs (*Cynomys leucurus*) are found in Utah, Colorado, Wyoming and a small area of southern Montana. The species' range has declined an estimated 92 to 98 percent since the late 1800s (Center for Native Ecosystems et al., 2002, p. 80). Conservation groups submitted a petition to list the white-tailed prairie dog under the ESA in 2002. The USFWS denied listing in 2010, claiming that oil and gas development, urbanization, plague, and other hazards were not impacting the species enough to be considered threats to its continued existence (*see* USFWS, 2010). Several conservation groups filed a lawsuit challenging the denial, and in September of 2014 they prevailed in court (Rocky Mountain Wild v. U.S. Fish and Wildlife Service, 2014 WL 7176384 (Sept. 29, 2014 Dist. Mont.). The court held that the USFWS failed to adequately consider all the available information, and relied on an *absence* of data to draw conclusions rather than considering *available* data.



White-tailed prairie dog. Photo: Rich Reading.

This case, similar to the ongoing case on the Gunnison's prairie dog listing decision (*see* Box 4), hinges in large part on the USFWS's definition of "significant portion of range." The court held that the USFWS did not adequately consider white-tailed prairie dog range contraction from historic amounts in analyzing whether or not the species was endangered in a significant portion of its range. The USFWS also stated that existing regulatory mechanisms governing oil and gas development were sufficient to protect white-tailed prairie dogs, inconsistent with the agency's statement that oil and gas development poses the most significant threat to the species. Lastly, the USFWS discounted threats from off-road vehicle use and toxic chemical leakage from oil and gas drilling because they were deemed individually insignificant. The court found that these threats must be analyzed because of the ways they may interact with other dangers such as development or plague. The court remanded the "not warranted" decision to the agency, meaning that the USFWS must reconsider the available information and reevaluate the finding's "not warranted" conclusion.

both the federal government and the non-profit organization Friends of Animals are appealing the decision. In the meantime, the UDWR is writing a new Utah Prairie Dog Management Plan that will include new regulations regarding the taking of Utah prairie dogs on private lands.

In 2014, the UDWR reported a spring count of 11,349 adult Utah prairie dogs during its annual trend count.[14] The most current estimate of occupied habitat is 64,000 acres; new colonies and colony extensions are mapped every year. Two of the three Recovery Units have achieved the Recovery Plan goal of a spring count of 2,000 adults.

[14] The adult population estimate is derived by multiplying this count by two, as only 40 to 60 percent of individual prairie dogs are above ground at any one time. The count is designed for estimating population trends.

UPDRIP partners (Utah Division of Wildlife Resources, Cedar City, the U.S. Forest Service and the Bureau of Land Management) live-trapped 2,062 animals from private lands and relocated them to release sites in all three Recovery Units. Three new translocation sites were established that could each support translocation of 400 animals per year over a three-year period. These sites were located in the West Desert Recovery Unit at the Cedar Wastewater Treatment Facility and on BLM- and USFS-administered public lands. One new site was developed on the Paunsaugunt recovery unit. Habitat analyses were conducted on potential translocation sites on the Awapa recovery unit, and at least one new site should be installed in 2015. Habitat improvement projects were conducted on several BLM- and USFS-administered sites, the Cedar Wastewater Treatment Facility, and Iron County's mitigation sites.

There were only two documented sylvatic plague outbreaks affecting ~200 acres in the West Desert Recovery Unit and the Awapa Plateau Recovery Unit. Rangewide, ~4,500 acres of Utah prairie dog habitat were dusted for plague in 2014, in addition to the 2,062 individual animals dusted during translocation. Three field sites for sylvatic plague vaccine trials are in Utah, in Iron County, the Awapa Plateau (Utah prairie dogs) and Coyote Basin (white-tailed prairie dogs) (BFFRIT, 2014, p. 7). 2014 was the second year of the field trials.

In 2009, the USFWS finalized a Programmatic Safe Harbor Agreement covering all Utah prairie dogs on private lands. Enrolled landowners agree to implement conservation measures for Utah prairie dogs in exchange for protection against prosecution if the landowner unintentionally kills prairie dogs or destroys prairie dog habitat while undertaking land use activities such as farming. There are currently 518 acres enrolled in the Safe Harbor program, which is administered by Panoramaland Resource Conservation and Development Council (RC&D). Utah also developed a habitat credit exchange program (HCEP), a conservation banking mechanism that provides credits to offset impacts of private and federal development activities, designed to be self-sustaining through free market purchases and sales of credits. The program obtains perpetual conservation easements on private lands across Utah prairie dog range. The program is administered by Panoramaland RC&D and other partners. There are currently four participants enrolled, protecting a total of 280 acres. A conservation easement for 40 acres was established in Garfield County.

The USFWS issued a new Incidental Take Permit (ITP) to Iron County based upon the recently completed Low-effect Habitat Conservation Plan (HCP). ITPs are required for non-federal actions that will result in "take" of a listed species (*see* Box 6). HCPs are required under the ESA when applying for an ITP, in order to minimize and mitigate the effects of the permitted take. This permit, which will allow for increased incidental take over the next three years, is intended to bridge the existing HCP and a revised long-term HCP. It authorizes the take of no more than 220 acres of occupied habitat over a maximum of three years following translocation or payment of a mitigation fee. A similar HCP was developed for Garfield County near Panguitch. Under these Low-effect HCPs, USFWS issues ITPs directly to the counties. In 2014, 31 projects were granted permits allowing the permanent take of 43 acres of habitat and an estimated 169 Utah prairie dogs. Another 165 permits were granted with a maximum allowed take of 4,040 animals. The reported take as of Jan. 6, 2015, is 1,785 individuals. The UDWR has authority to issue ITPs for agricultural operation under the ESA section 4(d) rule. Since the court ruling (*see above*), the UDWR has been issuing Certificates of Registration under both the HCPs and the ESA section 4(d) rule.

Bryce Canyon National Park continues to hold a yearly "Utah Prairie Dog Day" celebration recognizing the value of the species to the ecosystem and culture of Utah. The Park supports approximately 120 Utah prairie dogs in seven colonies (*see* "NPS"). UPDRIP and the USU Extension conducted

classroom presentations in several Iron County schools discussing the ecological role of Utah prairie dogs and the threats to achieving sustainable populations, including illegal shooting and poaching. UPDRIP presented a poster and moderated a panel on endangered species management at an international conference for wildland forest managers and research professionals in Salt Lake City.

Cedar Ridge Golf Course and the Cedar City Cemetery are sources of intense conflict between humans and prairie dogs in Cedar City. As part of attempts to minimize these conflicts, UPDRIP partners contributed coordination planning and funding for materials to construct barriers at both locations. After barrier construction, associated ITPs were authorized under the ESA for the Cedar Ridge Golf Course, Cedar City Cemetery, Parowan Airport, and Paragonah Cemetery.

Gunnison's and white-tailed prairie dogs are identified as "species of concern" in the Utah Wildlife Action Plan. The UDWR has assigned both species a NatureServe rank of "vulnerable," meaning that they are at "moderate risk" of elimination within the state. Utah bans shooting of Gunnison's and white-tailed prairie dogs on public lands during the breeding season from April 1 to June 15. This closure does not apply to private lands. Shooting of white-tailed prairie dogs is not permitted in the Coyote Basin Black-footed Ferret Recovery Area. Utah adopted the Gunnison's Prairie Dog and White-tailed Prairie Dog Conservation Plan in 2007, planning for 2008 through 2017 (*see* Lupis et al., 2007). There was no evidence of plague outbreaks in white-tailed or Gunnison's prairie dogs over the last year in any areas studied. Neither species is dusted for plague, nor were there any control efforts on state or federal public land. The state does not use or recommend relocation for white-tailed or Gunnison's prairie dogs because of disease concerns.

The state surveyed for Gunnison's prairie dogs in 2008 on tribal lands and in 2007 on non-tribal lands. Non-tribal lands were resurveyed in 2010 and again in 2013 using occupancy modeling, and occupancy appears stable over that time period. The state estimates that ~268,694 acres are currently suitable Gunnison's prairie dog habitat, and that an additional ~131,904 acres could be suitable with changes in land cover or land use. This is likely an overestimate of potential habitat, but does not include an estimated 52,201 acres of habitat on tribal lands. The state estimated that in 2013, 16 percent of the area in a geographic model of habitat was occupied. The next Gunnison's prairie dog survey is scheduled for 2016 in coordination with the three other states within Gunnison's prairie dog range.

The UDWR conducted occupancy surveys for white-tailed prairie dogs in 2008, 2011, and 2014. The occupancy rate in 2014 was lower than 2011 but higher than 2008. The UDWR intends to continue white-tailed prairie dog occupancy surveys in concert with other states in the species' range. The UDWR also conducted white-tailed prairie dog transect surveys in northeastern Utah in support of black-footed ferret reintroduction efforts. The state estimates that ~1,170,892 acres are currently suitable white-tailed prairie dog habitat, and that an additional ~288, 713 acres could be suitable with changes in land cover or land use.

Spring and fall black-footed ferret surveys found ferrets in three locations; Snake John Reef, Coyote Basin, and Bohemian Basin. Four out of the five ferrets captured during surveys were wild-born, including one wild-born female with a litter of three kits. Seven new ferrets were released into Bohemian Basin. The UDWR conducted statewide monitoring of grassland birds including burrowing owls, ferruginous hawks, and long-billed curlews. The UDWR intends to integrate its burrowing owl data into a regional effort to understand burrowing owl movements and factors limiting burrowing owl populations in the western U.S.. The agency is tracking burrowing owls with a combination of solar-powered satellite transmitters, geolocaters and band marks. The UDWR visited a total of 98 known ferruginous hawk territories. The Raptor Inventory Nest Survey program provided data from an

additional 21 territories. Information on territory occupancy (birds present but no sign of nesting), nesting and nest success were gathered at each site. Ferruginous hawk productivity was higher in 2014 than in recent years, and is higher than the minimum recommended to maintain a population. The UDWR continued research on kit fox limiting factors and survey techniques in collaboration with Dugway Proving Ground, Utah State University, and Brigham Young University.

D Wyoming *(Black-tailed and white-tailed prairie dogs)*

Both white- and black-tailed prairie dogs are designated as "non-game species of special concern" by the Wyoming Game and Fish Department (WGFD) and a "pest" by the state's Agriculture Department. Similar to counties in Nebraska and Kansas, Department of Agriculture Weed and Pest Districts in Wyoming can require landowners to control prairie dogs as pests (Department of Agriculture Statute 11-5-109[15]). Wyoming does not have a statewide prairie dog management plan.

Wyoming once had approximately six million to 16 million acres occupied by black-tailed prairie dogs (USFWS, 2009, p. 63,347). The WGFD surveyed black-tailed prairie dog populations in 2006 and estimated 229,607 occupied acres (Grenier et al., 2007). The WGFD surveyed again in 2009, but the sample size was too small to account for the variance. Therefore the usefulness of this survey for monitoring population trends was questionable. The authors recommended a larger sample size and an increase in resources for the next survey, as the results suggest occupied acreage may have been underrepresented in the past (Grenier, 2010). The condition of black-tailed prairie dog colonies appeared to have deteriorated in 2009, with over half impacted by disease (most likely sylvatic plague and/or poisoning) (Grenier, 2010). As of 2010, prairie dogs are no longer classified as a "species of greatest conservation need" in the state wildlife action plan. The WGFD has contracted with a private company (WEST, Inc.) for a black-tailed prairie dog acreage survey in 2015. The WGFD will be surveying a subset of acreage in Wyoming funded through WAFWA as part of the large-scale mapping effort, and is additionally funding a survey of the rest of the state.

The WGFD conducted a statewide white-tailed prairie dog aerial survey in 2008 and estimated approximately two million occupied acres (USFWS, 2010, p. 30,343). Pending approval from the Wyoming Game and Fish Commission, the state is planning to map white-tailed prairie dog acreage in 2015 using the same occupancy survey protocols as Utah and Colorado. Wyoming is currently conducting plague vaccine trials on 160 acres of white-tailed prairie dog colonies near Meeteetse, Wyoming, and those trials will continue for a third year in 2015.

In early 2012, the Wyoming Game and Fish Commission approved a translocation policy for the entire state. Under this policy, an annual request to translocate must be made, and the commission must approve translocations. Wyoming has no limits on shooting. There is one black-footed ferret reintroduction site in Shirley Basin, but the WGFD was unable to conduct surveys in 2014 due to personnel changes. Grassland bird surveys are slated to begin in 2015, and will likely include prairie dog associates.

[15] See www.nrcs.usda.gov/wps/portal/nrcs/detailfull/wy/technical/ecoscience/pest/?cid=nrcs142p2_026797

Conclusion

Much remains to be done to recover the prairie dog empire to even a fraction of its former glory. The native grassland ecosystem is one of the most endangered in the country (Noss et al., 1995, Fig. 2). Many of the incredible natural phenomena associated with grasslands—prairie dog colonies millions of acres across, massive herds of bison migrating across the plains, lesser prairie-chickens dancing on their leks, the eyes of black-footed ferrets shining in the night—have vanished or are nearly gone. Prairie dogs and their interactions with other species once shaped vast landscapes in the American West. Protections for prairie dogs will be key to recovering America's grasslands. State and federal agencies can contribute to prairie dog conservation by restricting and eliminating recreational shooting, emphasizing non-lethal management techniques, prohibiting use of toxic poisons, preventing habitat destruction and restoring degraded habitat. WildEarth Guardians is working on many fronts to ensure the protection and restoration of these incredible ecosystems, and we will continue to do so until prairie dogs are protected and respected as a key part of the grasslands.

References

Black-footed Ferret Recovery Implementation Team (BFFRIT). (2014). *Black-footed Ferret Recovery Implementation Team 2013 Progress Report.* <www.cmzoo.org/conservation/programs/blackFootedFerret.asp>

Bosworth, D. (Ed.). (2001). *Land and Resource Management Plan for the Dakota Prairie Grasslands.* Bismarck, ND: U.S. Forest Service Region 1, Dakota Prairie Grasslands. <www.fs.usda.gov/detailfull/dpg/landmanagement/?cid=stelprdb5340280&width=full>

Caldwell, M. R. (Ed.). (2001). *The Endangered Species Act*. Stanford, CA: Stanford University Press.

Center for Native Ecosystems, Biodiversity Conservation Alliance, Southern Utah Wilderness Alliance, American Lands Alliance, Forest Guardians, Terry Tempest Williams, Ecology Center, & Sinapu. (2002). *Petition for a Rule to List the White-Tailed Prairie Dog* (Sciuridae: Cynomys leucurus) *as Threatened or Endangered under the Endangered Species Act, 16 U.S.C. § 1531 et seq. (1973 as Amended) and for the designation of Critical Habitat.*

Davidson, A. D., Detling, J. K., & Brown, J. H. (2012). Ecological roles and conservation challenges of social, burrowing, herbivorous mammals in the world's grasslands. *Frontiers in Ecology and the Environment, 9*(10), 477–486.

Davidson, A. D., Friggens, M. T., Shoemaker, K. T., Hayes, C. L., Erz, J., & Duran, R. (2014). Population dynamics of reintroduced Gunnison's prairie dogs in the southern portion of their range. *The Journal of Wildlife Management, 78*(3), 429-439.

Goble, D. D., & Scott, J. M. (Eds.). (2006). *The Endangered Species Act at Thirty: Renewing the Conservation Promise* (Vol. 1). Washington, DC: Island Press.

Gosnell, H. (2001). Section 7 of the Endangered Species Act and the art of compromise: The evolution of a reasonable and prudent alternative for the Animas-La Plata project. *Natural Resources Journal 41*, 562-626.

Grenier, M. (2010). Abundance Estimate of the Black-tailed Prairie Dog in Eastern Wyoming Completion Report. In A. C. Orabona (Ed.), *Threatened, Endangered, and Nongame Bird and Mammal Investigations. Period Covered: 15 April 2009 to 14 April 2010* (pp. 187-190). Cheyenne: Wyoming Game and Fish Department Nongame Program, Biological Services Section, Wildlife Division.

Grenier, M., Schell, R., Whitford, N., & Oakleaf, B. (2007). Black-tailed Prairie Dog Monitoring in Wyoming Completion Report. In A. O. Cerovski (Ed.), *Threatened, Endangered, and Nongame Bird and Mammal Investigations. Period Covered: 15 April 2006 to 14 April 2007* (pp. 123-130). Cheyenne: Wyoming Game and Fish Department Nongame Program, Biological Services Section, Wildlife Division.

Griebel, R. L. (2014). *Conata Basin/Badlands Area 2014 Plague Management Report.* Wall, SD: Nebraska National Forest, Buffalo Gap National Grassland, Wall Ranger District.

Hagen, S., Isakson, P., & Dyke, S. (2005). *North Dakota Comprehensive Wildlife Conservation Strategy*. Bismarck, ND: North Dakota Game and Fish Department.

Hardy, S. 2011. "*Cynomys mexicanus*." Animal Diversity Web. <animaldiversity.ummz.umich.edu/site/accounts/information/Cynomys_mexicanus.html>

Hoogland, J. (Ed.). (2006). *Conservation of the Black-tailed Prairie Dog: Saving North America's Western Grasslands*. Washington, DC: Island Press.

Johnsgard, P. A. (2005). *Prairie Dog Empire: A Saga of the Shortgrass Prairie*. Lincoln and London: University of Nebraska Press.

Johnson, K., Neville, T., Kramer, B., & Flores, B. (2010a). *Monitoring Black-tailed Prairie Dog Towns in Eastern New Mexico Using Remote Sensing: 2010 Final Report. Natural Heritage New Mexico Publication No. 10-GTR-359*. Albuquerque, NM: Natural Heritage New Mexico.

Johnson, K., Neville, T. B., Mikesic, D., & Talayumptewa, D. (2010). *Distributional Analysis of Gunnison's Prairie Dog (Cynomys gunnisoni) on the Navajo Nation and Reservation of the Hopi Tribe. A report submitted to the U.S. Fish and Wildlife Service, Tribal Landowner Incentive Program.* Albuquerque, NM: Natural Heritage New Mexico.

Kansas Black-Tailed Prairie Dog Working Group (KSPDWG). (2002). *Kansas Black-Tailed Prairie Dog Conservation and Management Plan.*

Licht, D. S., Ogden, C., & Chase, M. (2009). The prairie dog: A century of confusion and conflict in park management. *The George Wright Forum, 26*(2), 84-100.

Luce, R. J. (2003). *A Multi-State Conservation Plan for the Black-tailed Prairie Dog,* Cynomys ludovicianus*, in the United States – an addendum to the Black-tailed Prairie Dog Conservation Assessment and Strategy, November 3, 1999.*

Lupis, S. G., Bunnell, K. D., Black, T. A., & Messmer, T. A. (2007). *Utah Gunnison's Prairie Dog and White-tailed Prairie Dog Conservation Plan: Draft #5.* Salt Lake City, Utah: Utah Division of Wildlife Resources.

Manno, T. G. (2014). *The Utah Prairie Dog: Life Among the Red Rocks.* Salt Lake City, UT: The University of Utah Press.

Martínez-Estévez, L., Balvanera, P., Pacheco, J., & Ceballos, G. (2013). Prairie dog decline reduces the supply of ecosystem services and leads to desertification of semiarid grasslands. *PLoS ONE 8*(10), 1-9.

Matchett, R. (2015). *UL Bend Black-footed Ferret Reintroduction Site Summary of Activities.* Annual report for the Black-footed Ferret Recovery Implementation Team – Conservation Subcommittee.

McDonald, L. L., Stanley, T. R., Otis, D. L., Biggins, D. E., Stevens, P. D., & Koprowski, J. L. (2011). *Recommended Methods for Range-wide Monitoring of Prairie Dogs in the United States. U.S. Geological Survey Scientific Investigations Report 2011–5063*. Reston, VA: U.S. Geological Survey.

Miller, B., Ceballos, G., & Reading, R. P. (1994). The prairie dog and biotic diversity. *Conservation Biology, 8*(3), 677-681.

Montana Department of Agriculture. (2006). *The Biology and Control of the Black-tailed Prairie Dog.* Helena, MT: Montana Department of Agriculture Vertebrate Pest Program.

Noss, R. F., LaRoe III, E. T., & Scott, J. M. (1995). *Endangered ecosystems of the United States: a preliminary assessment of loss and degradation.* U.S. Department of the Interior, National Biological Service, Biological Science Report 28.

Rauscher, R. L., Story, S. J., Gude, J. A., & Russell, R. E. (2013). Estimation of Black-Tailed Prairie Dog Colonies in Montana. *Wildlife Society Bulletin, 9999*, 1-8.

Rocky Mountain Wild, Biodiversity Conservation Alliance, Cottonwood Environmental Law Center, & Wildwest Institute vs. U.S. Fish and Wildlife Service, Daniel M. Ashe, and S. M. R. Jewell. U.S. District Court for the District of Montana Missoula Division. CV 13-42-M-DWM. 2014.

Sackett, L. C., Seglund, A. E., Guralnick, R. P., Mazzella, M. N., Wagner, D. M., Busch, J. D., Martin, A. P. (2014). Evidence for two subspecies of Gunnison's prairie dogs (*Cynomys gunnisoni*), and the general importance of the subspecies concept. Biological Conservation 174, 1-11.

Seglund, A. E. (2012). *Occupancy of Random Plots by White-tailed Prairie Dogs in Colorado 2004-2011.* Unpublished report. Colorado Parks and Wildlife.

Seglund, A. E., Ernst, A. E., Grenier, M., Luce, B., Puchniak, A., & Schnurr, P. (2004). *White-tailed Prairie Dog Conservation Assessment.*

Seglund, A. E., & Schnurr, P. M. (2010). *Colorado Gunnison's and White-tailed Prairie Dog Conservation Strategy.* Denver, CO: Colorado Parks and Wildlife.

Slobodchikoff, C. N., Perla, B. S., & Verdolin, J. L. (2009). *Prairie Dogs: Communication and Community in an Animal Society.* Cambridge, MA: Harvard University Press.

Texas Black-tailed Prairie Dog Working Group (TXPDWG). (2004). *Texas Black-tailed Prairie Dog Conservation and Management Plan*. Texas Parks and Wildlife Department Publication PWD RP W7000-1100 (7/05).

Underwood, J. (2007). *Interagency Management Plan for Gunnison's Prairie Dogs in Arizona*. Phoenix, AZ: Nongame and Endangered Wildlife Program, Arizona Game and Fish Department.

Underwood, J. G, & Van Pelt, W. E. (2008). *A proposal to reestablish the black-tailed prairie dog* (Cynomys ludovicianus) *to southern Arizona*. Nongame and Endangered Wildlife Program Draft Technical Report. Phoenix, AZ: Arizona Game and Fish Department.

U.S. Fish and Wildlife Service (USFWS). (2004). Finding for the resubmitted petition to list the black-tailed prairie dog as threatened. *Federal Register, 69*(159), 51,217-51,226.

____. (2008). 12-month finding on a petition to list the Gunnison's prairie dog as threatened or endangered. *Federal Register, 73*(24), 6,660-6,684.

____. (2009). 12-month finding on a petition to list the black-tailed prairie dog as threatened or endangered. *Federal Register, 74*(231), 63,343-63,366.

____. (2010). 12-month finding on a petition to list the white-tailed prairie dog as endangered or threatened. *Federal Register, 75*(104), 30,338-30,363.

____. (2012a). Revising the special rule for the Utah prairie dog. *Federal Register, 77*(149), 46,158-46,183.

____. (2012b). *Utah Prairie Dog* (Cynomys parvidens) *Revised Recovery Plan*. Denver, CO: U.S. Fish and Wildlife Service.

____. (2013). 12-month finding on a petition to list the Gunnison's prairie dog as threatened or endangered. *Federal Register, 78*(220), 68,660-68,685.

WAFWA Grasslands Initiative (WGI). (2011). *Western Grassland Initiative: A Plan for Conserving Grassland Habitat and Wildlife.*

Western Association of Fish and Wildlife Agencies (WAFWA). (2006). *Memorandum of Understanding for Conservation of Species of Conservation Concern Associated with Prairie Ecosystems.*

Ranges of the Five Prairie Dog Species

WILDEARTH GUARDIANS

A FORCE FOR NATURE