

# Report from the Burrow

## Forecast of the Prairie Dog 2012

WILDEARTH GUARDIANS | Taylor Jones



A Report from



February 2, 2012



#### MISSION STATEMENT

WILDEARTH GUARDIANS protects and restores the wildlife, wild places and wild rivers of the American West.

Inquiries about this report and WILDEARTH GUARDIANS' work can be made directly to:

Taylor Jones, WILDEARTH GUARDIANS  
1536 Wynkoop Street, Suite 301  
Denver, Colorado 80202  
303-573-4898  
tjones@wildearthguardians.org

Cartography: Kurt Menke, Bird's Eye View GIS

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## Report from the Burrow: Forecast of the Prairie Dog 2012

The story of the prairie dog is the story of the range of our compassion. If we can extend our idea of community to include the lowliest of creatures... then we will indeed be closer to a path of peace and tolerance.

-Terry Tempest Williams

Prairie dogs and humans have much in common – both species communicate, both live in communities, and both work cooperatively to ensure the safety of their communities. We sometimes even share the same taste in real estate. Unfortunately, human occupation and use of the landscape often conflicts with prairie dogs and their colonies. But in that same zone of conflict, there are opportunities to learn to live together.

In the midst of much grave news about our grassland ecosystems, there are some conservation success stories that deserve to be shared. This year's *Report from the Burrow* highlights conservation of and coexistence with prairie dogs. As we search for ways to build a better future, we are relearning how to share space and resources with other species. One way of thinking about this is through the lens of *reconciliation ecology*, which attempts to reconcile "human and non-human use of habitats by inventing, establishing, and maintaining new habitats where people live and work and play. The goal? To conserve species diversity by allowing wild species to use our spaces" (Rosenzweig 2006). Reconciliation ecology can also include helping species reclaim their space from human development and encroachment.

People and prairie dogs are coexisting in some places in the West. In other places, people are helping to reestablish prairie dogs in their historic range, or reserving land for prairie dog conservation. In recognition of the small, incremental, but important progress being made, this report highlights coexistence in action, presents examples of successful prairie dog conservation projects, and provides information about ways to coexist with prairie dogs in your community. Projects like those featured here are more important than ever to restore healthy grasslands and rebuild the dwindling prairie dog empire.

Featured projects include a range of current efforts involving private landowners, non-profit organizations, government agencies, and municipalities that serve as an overview of diverse and creative efforts to support prairie dog coexistence. But there are more examples out there, and we hope there will be many more in the future. WildEarth Guardians intends to profile one "Success Story of the Year" in future editions of *Report from the Burrow*. If you wish to nominate a project for consideration, please send information to [tjones@wildearthguardians.org](mailto:tjones@wildearthguardians.org).

## Executive Summary

WildEarth Guardians annually releases our *Report from the Burrow: Forecast of the Prairie Dog* on “Prairie Dog Day” – also Groundhog Day – on February 2. We linked these two holidays because both burrowing rodents provide us predictions of the future. Famous groundhog Punxsutawney Phil entertains us, foretelling the length of winter. But the status of our prairie dog populations has more serious implications for the future of western grassland ecosystems.

There are four species of prairie dog 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 93-99 percent of their historic range in the last 150 years, and with their loss we lose the unique biome that prairie dogs create and sustain.

As a “keystone species,” prairie dogs have unique, significant effects on their ecosystem that are disproportionately large relative to their abundance. These energetic creatures fertilize and aerate the soil, reduce noxious weeds, and clip the top parts of forage, creating a shorter but more nutrient-rich blade of grass. Large herbivores including elk and bison often prefer to graze on prairie dog towns. Prairie dog burrows provide habitat for numerous reptiles, amphibians, and invertebrates. Prairie dogs are an important food source for a wide variety of species including hawks, eagles, coyotes, foxes, and badgers. Approximately 150 species benefit from prairie dogs and the habitat they create.

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

How did they do this year? The answer: fairly well to horribly. No federal or state agency has yet earned an “A” in *Report from the Burrow*. Arizona continues to lead western states with a “B.” The U.S. Forest Service continues to edge their grade upwards with ongoing conservation efforts, particularly in Wyoming’s Thunder Basin National Grassland (see Box 6). Some grades dropped: South Dakota was graded down for cancelling a seasonal prairie dog shooting closure on public lands, and Kansas counties continue to display hostility towards prairie dog conservation.

There are a variety of actions government agencies can and should take to protect and recover prairie dogs, including:

- Granting prompt, range-wide protection of all unlisted species of prairie dogs—the black-tailed, white-tailed, and Gunnison’s—under the Endangered Species Act;
- Banning poisoning and shooting of any prairie dogs, especially on public lands;

- Immediately banning Rozol and Kaput-D prairie dog toxicants;
- Supporting efforts to prevent and mitigate plague outbreaks;
- Prohibiting destruction of prairie dog habitat on public lands from oil and gas drilling, coal-mining, off-road vehicles, and other harmful land uses;
- Eliminating subsidies that contribute to habitat destruction and prairie dog killing;
- Preventing the loss of Mexican prairie dog habitat to farming; and
- Implementing other steps necessary to protect and recover prairie dog populations.

We need our state and federal agencies to promulgate, implement, and enforce policies to safeguard prairie dogs, but prairie dogs equally need the help of individual citizens and communities. Working together, we can raise awareness of the prairie dog's plight. Contact your members of Congress and your state and federal wildlife officials and ask them to develop stronger policies to protect these animals and their habitats.

## 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 standard 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 used to determine a species' eligibility for federal protection.

- 1. Prairie dog conservation, restoration, and management (Conserve):** The extent to which federal or state agencies are progressing toward final conservation plans and actively working to recover and protect prairie dogs.
- 2. Habitat conservation, restoration, and management (Habitat):** The degree to which states or federal agencies are working toward restoring prairie dog habitat or allowing habitat destruction – from oil and gas drilling and coal mining; livestock grazing that promotes weed incursion and woody shrub encroachment; or off-road vehicle use, for example.
- 3. Shooting regulations (Shooting):** 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):** 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.

Adding to the complexity of these evaluations, sometimes more than one agency within a state develops and implements prairie dog policies. For example, Colorado Parks and Wildlife designates prairie dogs “small game” and species of “greatest conservation need,” regulates prairie dog shooting, and co-regulates toxicant use with the Department of Agriculture, which designates prairie dogs as “destructive rodent pests.” Differing designations across agencies in the same state can cause management conflicts, mixed messages, and even downright contradictory actions. In these cases the 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.

Government agencies have committed to monitor and conserve prairie dogs (see Box 1). The Western Association of Fish and Wildlife Agencies (WAFWA) established the *Memorandum of Understanding for Conservation of Species of Conservation Concern Associated with Prairie Ecosystems* that commits signatories to certain obligations to manage black-tailed, Gunnison’s, and white-tailed prairie dogs (WAFWA 2006). Every western state with prairie dogs endorsed the memorandum. Several states have *Comprehensive Wildlife Conservation Strategies* (CWCS) that establish conservation guidelines for prairie dogs. States within black-tailed prairie dog range also produce an annual report on progress towards the objectives outlined in the *Multi-State Conservation Plan for the Black-tailed Prairie Dog* (Luce 2003).

In 2004, the Western Association of Fish and Wildlife Agencies 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 5 years. In July 2011, WGI released their Western Grassland Initiative Strategic Plan, outlining their mission and strategies (WGI 2011).

One important issue in prairie dog conservation has been the lack of standardized monitoring methods across states. In an effort to solve this problem, WAFWA convened a panel of experts to review survey methods and make methodology recommendations for all four species found in the United States. The result, released in 2011 as *Recommended Methods for Range-wide Monitoring of Prairie Dogs in the United States*, will hopefully help standardize survey methods across states, prevent biased estimates, and inspire better conservation planning. Several important action items remain to be completed, such as agreeing upon a formal, biologically meaningful definition of “occupied acre” (the usual measurement of prairie dog populations), and preparation of written guidelines for identifying prairie dog colonies from aerial imagery (from the National Agriculture Imagery Program, or NAIP) (McDonald et al. 2011).

### **Box 1. 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 U.S. Fish and Wildlife Service to list the black-tailed prairie dog under the Endangered Species Act. In 2000, the Fish and Wildlife Service made the species a candidate for listing. In response, all 11 states within black-tailed prairie dog range formed the Interstate Black-tailed Prairie Dog Conservation Team to prevent federal listing. With the exception of Colorado and Nebraska, each state pledged to develop targets for prairie dog occupied 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. The Conservation Team remained intact even subsequent to Fish and Wildlife Service's removal of the species from the candidate list in 2004.

**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 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 selected species.

**The Western Association of Fish and Wildlife Agencies Memorandum of Understanding (MOU).** In 2006, all 12 states within the range of the four U.S. prairie dog species and several federal agencies signed the WAFWA *Memorandum of Understanding for the Conservation and Management of Species of Conservation Concern Associated with Prairie Ecosystems*. The MOU directed that the agencies 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. A Prairie Dog Conservation Team formed among the agencies that manage prairie dogs. Each agency signatory designated representative staff members to participate in annual meetings to provide prairie dog management progress reports.

## The Report Card

ENTITY	CONSERVE	HABITAT	SHOOTING	PLAGUE	POLICIES	POISON	MONITOR	2011	2012
FEDERAL GOVERNMENT AGENCIES									
BLM	F	F	F	F	F	C	C	D-	D-
EPA	N/A	N/A	N/A	N/A	F	F	N/A	F	F
NPS	B	B	B	C	B	C	A	B	B
USFS	B	D	D	C	C	D	A	C-	C
USFWS	F	D	D	C	D	C	C	D	D+
WS	F	N/A	F	N/A	F	F	N/A	F	F
STATE GOVERNMENTS									
AZ	A	B	B	B	B	C	B	B	B
CO	B	D	B	B	C	D	C	C-	C
KS	F	F	F	C	F	F	B	D	D-
MT	C	C	F	F	F	D	C	D	D
NE	F	F	F	F	F	F	F	F	F
NM	F	F	C	F	F	D	C	D-	D-
ND	F	F	F	F	F	F	C	F	F
OK	C	B	F	D	B	B	B	C+	C
SD	F	F	F	D	D	F	D	D-	F
TX	C	C	F	F	C	F	B	D+	D+
UT	C	C	C	D	D	D	B	C-	C-
WY	C	D	F	F	D	F	D	D	D-



## Grade Explanations

D-

### U.S. Bureau of Land Management (BLM)

The BLM manages vast expanses of public land across the West that includes Gunnison's, Utah, and white-tailed prairie dog habitat, though very little (proportionately) with black-tailed prairie dog range. The BLM routinely exempts oil and gas companies from complying with rules that would protect prairie dog colonies and habitat on lands leased drilling. Few BLM lands have shooting restrictions, and the agency usually defers to state shooting regulations. The BLM conducts prairie dog surveys on some of its lands. The agency has approved and assisted with black-tailed prairie dog relocation onto BLM land in Arizona and relocation of Gunnison's prairie dogs onto BLM land in New Mexico. Conservationists have proposed the BLM designate multiple Areas of Critical Environmental Concern (ACEC)<sup>1</sup> to conserve white-tailed prairie dogs, but the agency approved none of them, concluding that they do not believe they meet the "relevance and importance" criteria for ACECs. BLM also dismissed protests over oil and gas leasing in white-tailed and black-tailed prairie dog habitat, and potential black-footed ferret reintroduction sites (the black-footed ferret is a rare predator that feeds almost entirely on prairie dogs) (BLM 2011). Recent Resource Management Plans (RMPs), such as the recently finalized Little Snake Proposed RMP, do not adequately protect large, biologically important white-tailed prairie dog colonies from oil and gas drilling.

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). The EPA has long approved zinc phosphide and aluminum phosphide for use on prairie dogs. In May 2009, the EPA approved the use of the poison Rozol (chlorophacinone) to exterminate black-tailed prairie dogs in all 11 states in the species' range. The EPA also considered approving the toxicant Kaput-D (diphacinone imidacloprid) for the entire black-tailed prairie dog range. The EPA had been issuing Special Local Needs registrations for both toxicants on a state-by-state basis. Defenders of Wildlife and Audubon of Kansas sued the EPA in September 2009 to repeal Rozol registration and halt Special Local Needs registrations of Kaput-D.

In July 2011, the Washington, D.C. District Court ruled that EPA had violated the Endangered Species Act (ESA) by not consulting with the Fish and Wildlife Service (USFWS) over the potential impacts of Rozol on "threatened" and "endangered" species before registering it. The final order in the case bars the use of Rozol in Montana, New Mexico, North Dakota, and

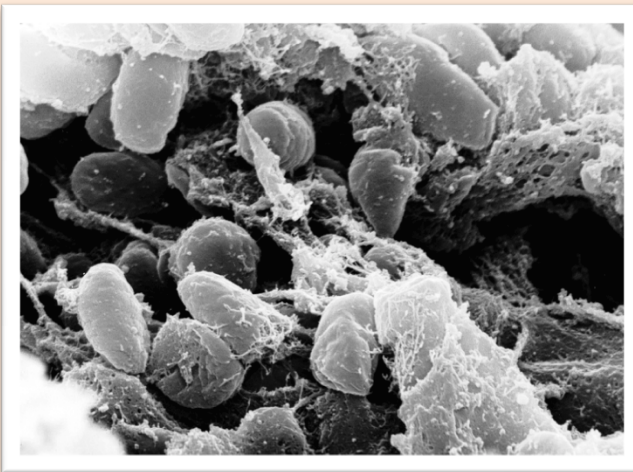
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<sup>1</sup> "ACEC" is a designation for areas where special management attention is needed to protect important historic, cultural and scenic values; fish, wildlife resources or other natural systems or processes; or to protect human life and safety from natural hazards.

## Box 2. Fighting the Scourge: the Sylvatic Plague Vaccine

Sometimes it is the smallest things that do the greatest harm. *Yersinia pestis*, the plague bacterium, is one of the most serious threats to prairie dogs. The disease is transmitted through the bites of infected fleas. It was inadvertently introduced to North America in the early 1900's, and has been causing major problems for the mammal community ever since. Prairie dogs have no natural immunity to plague, and an outbreak can rapidly cause 90 percent mortality or more in a colony.

Currently, the only way to protect prairie dog colonies from plague is to dust burrows with deltamethrin (Delta Dust), an insecticide that kills the plague-carrying fleas and prevents plague's spread. Dusting is labor intensive, expensive, and difficult to sustain long-term. But another option may be available soon thanks to work conducted by scientists at the U.S. Geological Survey National Wildlife Health Center, in collaboration with colleagues at other federal agencies and the University of Wisconsin.



Scanning electron micrograph depicting a mass of *Yersinia pestis* bacteria in the foregut of a flea.  
Photo: Rocky Mountain Laboratories, NIAID, NIH.

Scientists have been developing a plague vaccine that can be delivered orally via a delicious (to prairie dogs) peanut-butter-flavored bait. The vaccine has proven effective in laboratory tests, and now the research focus has shifted to the best method of delivery, confirmation that the baits aren't harmful to other wildlife species, and the duration of immunity (USGS 2011). Safety trials are scheduled for 2012.

A working group under the direction of the Black-footed Ferret Recovery Implementation Team and the Western Association of Fish and Wildlife Agencies is laboring to complete development of the vaccine, and to coordinate its use for the conservation of black-footed ferrets and prairie dogs in targeted locations (USGS 2011). If the safety trials are satisfactory, field trials will begin in 2013. A number of states, federal agencies, and tribes have applied to participate in the field trials. If the vaccine is successful, it will mitigate one of the biggest threats to prairie dogs, safeguarding this keystone species of the grassland ecosystem.

South Dakota (which did not have Special Local Needs registration) pending consultation to reduce the threat to listed species. The court opinion stated that “[t]he Agency essentially admits that it utterly failed to satisfy the procedural requirements of § 7(a)(2) of the ESA before registering Rozol. Moreover, plaintiffs allege that the current use of Rozol is harming endangered species. Thus, the Court may enjoin the Agency’s registration of Rozol until it finishes its formal consultation with the FWS” (*Defenders of Wildlife et al. v. Jackson* 2011). This unfortunately limits consideration of harm to listed species without addressing the harms of secondary poisoning to non-listed prairie dog-dependent species such as ferruginous hawks, golden eagles, swift foxes, and badgers, not to mention the prairie dogs themselves (AOK 2011). The EPA is seeking comments until Feb. 17, 2012, on the USFWS’s draft Biological Opinion addressing the potential effects of Rozol on animals listed as “threatened” or “endangered” and proposed measures to protect those animals.<sup>2</sup>

The EPA is also reviewing additional permits to use chemicals as prairie dog poisons. Scimetrics, a pest control company, has applied to EPA to use Kaput-D for prairie dog control – this application is currently posted for public review, meaning the public can comment on the risk assessments and the agency’s proposed registration decision. Scimetrics has also applied to register imidacloprid warfarin for prairie dog control, and a decision is expected in the first quarter of 2012.<sup>3</sup> The results of these reviews will be considered in next year’s grade.

**B**

**U.S. National Park Service (NPS)**

The NPS continues to manage mostly small prairie dog colonies at 21 national parks, monuments, and other NPS lands. The 2008 estimate of NPS acreage occupied by prairie dogs was 14,576 acres (Licht et al. 2009); a more recent agency-wide estimate is not available. However, since 2008, lower acreages at Wind Cave National Park and Theodore Roosevelt National Park have been reported. Four NPS units have completed management plans (Badlands National Park, Bent’s Old Fort National Historic Site, Wind Cave National Park, and Curecanti National Recreation Area) and five units have plans in some stage of preparation (Sand Creek Massacre National Historic Site, Theodore Roosevelt National Park, Bryce Canyon National Park, Hubbell Trading Post National Historic Site, and Devil’s Tower National Monument).

Across the 21 NPS units, prairie dog management straddles the line between NPS’s policy of conserving native wildlife versus the need to appear as a “good neighbor” and to protect other park resources (e.g., cultural resources) and visitor health and safety. When a conflict does

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<sup>2</sup> The draft Biological Opinion is included as document number EPA-HQ-OPP-2011-0909 at [www.regulations.gov](http://www.regulations.gov). You can submit comments at [www.regulations.gov/#!documentDetail;D=EPA-HQ-OPP-2011-0909-0037](http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPP-2011-0909-0037) or by mail to: Office of Pesticide Programs (OPP) Regulatory Public Docket (7502P), Environmental Protection Agency, 1200 Pennsylvania Ave., NW, Washington, DC 20460-0001 (include the document number).

<sup>3</sup> See [www.epa.gov/opprd001/workplan/newuse.htm](http://www.epa.gov/opprd001/workplan/newuse.htm).

occur, parks in the Midwest Region (the Dakotas, Nebraska, and Kansas) are authorized to use lethal control (e.g., zinc phosphide poison, shooting) if they have an approved prairie dog management plan. Such a plan is not required in the NPS Intermountain Region. The agency bans pesticides with chlorophacinone as the active ingredient (e.g., Rozol) on NPS lands, due to the potential for inadvertently poisoning other animals.

Plague has recently been documented in parks in the Dakotas and Nebraska. Epizootics (outbreaks of plague) have been observed at Badlands National Park and plague has been detected at low, background levels in Wind Cave and other units (using a PCR test for plague DNA). The presence of plague is especially noteworthy at Badlands and Wind Cave national parks, locations of black-footed ferret reintroduction sites. In an effort to conserve the ferrets and the prairie dog ecosystem, these parks use Delta Dust to kill fleas that host the plague bacterium. Wind Cave has collaborated with Black Hills State University to assess the impacts of such dusting on tiger salamanders that reside in prairie dog burrows. Bryce Canyon National Park performs routine dusting of burrows to protect their Utah prairie dogs. To protect human health and safety, some parks place signs at select colonies warning people of plague in the area. At the time of this report, some parks had been nominated as study sites for the application and testing of the sylvatic plague vaccine for prairie dogs (see Box 2).

Most parks also have information and programs highlighting the ecological benefits and importance of prairie dogs. Bryce Canyon National Park continues their annual celebration of Utah Prairie Dog Day.

## **C** U.S. Forest Service (USFS)

All four U.S. prairie dog species reside on USFS units in the West. National grasslands managed by the Forest Service in several Great Plains states offer the best hope for protecting black-tailed prairie dogs due to sparse public lands in the region. The USFS allows oil and gas drilling within prairie dog habitat. The agency also generally defers to state regulations on prairie dog shooting, although there are exceptions. It has imposed shooting and poisoning bans for black-tailed prairie dog colonies on the Buffalo Gap National Grassland where black-footed ferrets also occur. Shooting is prohibited in Special Management Areas such as the ferret special management area in the Conata Basin in the Buffalo Gap National Grassland in South Dakota<sup>4</sup> and the ferret special management area in Thunder Basin National Grassland in Wyoming, where poisoning is also prohibited. Unfortunately, USFS has amended management plans to allow prairie dog poisoning in some areas of the Buffalo Gap, Fort Pierre, Grand River (where some poisoning took place in 2011), Little Missouri (where some poisoning took place in 2011), Oglala, Pawnee (where 200 acres were poisoned in 2011), and Thunder Basin national

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<sup>4</sup> See the Land and Resource Management Plan for the Buffalo Gap National Grassland: [www.fs.usda.gov/detail/nebraska/landmanagement/?cid=FSM9\\_028050](http://www.fs.usda.gov/detail/nebraska/landmanagement/?cid=FSM9_028050) (Chapter 3, Management Area Direction).

grasslands (where 500 acres were poisoned in 2011). The agency conducts regular population surveys.

Plague has taken a severe toll on prairie dogs in many areas despite efforts by USFS to halt its spread: the black-footed ferret management area in the Conata Basin has lost ~22,260 acres of prairie dogs since 2007, and colonies are still shrinking and becoming patchy. In the Wall Ranger District and Badlands National Park, a total of 4,206 acres of prairie dogs were identified as impacted by plague in 2011. USFS hired a private contractor to kill plague-vectoring fleas by applying insecticidal dust to 497,887 burrows on 12,711 acres of prairie dog habitat in Conata Basin and Badlands National Park (Griebel 2011).

USFS is actively restoring habitat on the Thunder Basin National Grassland in partnership with other agencies and non-profit organizations, including using controlled burns to encourage prairie dog expansion, dusting colonies to prevent plague, and relocating prairie dogs away from private lands instead of poisoning them (see Box 6). All active prairie dog colonies on the Thunder Basin are mapped annually. In 2011 prairie dogs occupied 5,600 acres of the 18,000 acre black-footed ferret management area. An additional 3,048 acres exist outside of the black-footed ferret management area.

Colonies of black-tailed prairie dogs in the Kiowa and Rita Blanca national grasslands, though struggling with plague outbreaks, have almost recovered enough to support black-footed ferret reintroduction in parts of the grasslands (recovery criteria call for 1,000 acres among colonies separated by < 7 km (the dispersal range of black-footed ferrets)). There are now slightly more than 2,730 acres of active colonies. Unfortunately plague could easily undermine ferret reintroduction; when plague hit 5 colonies between 2006 and 2009, the cumulative area of those colonies was reduced from 951 to 24 acres. In the spring of 2011, 618 acres in Rita Blanca were dusted to prevent plague.

Gunnison's prairie dogs were reintroduced from a school in Williams, Arizona, to abandoned colonies in the Kaibab National Forest in Utah last year, and plans are in place to continue reintroductions in 2012. The Kaibab mapped its abandoned and active colonies in 2011. The Utah Prairie Dog Recovery Team identified six future translocation sites located on lands managed by the Dixie National Forest. Translocation tubes and nest boxes have been installed at one of these sites in preparation for translocations in the coming seasons. The Dixie National Forest has completed habitat enhancements on 20,746 acres of habitat, and released prairie dogs on six translocation sites (1992-2010) – Upper Berry, Middle Berry, Lower Berry, Pat Willis Draw, Coyote Hollow, and Mud Springs. The USFS is also continuing with substantial plague dusting efforts in Dixie National Forest. Their work has resulted in new and expanded Utah prairie dog colonies, which will assist with recovery efforts for this threatened species.



## U.S. Fish and Wildlife Service (USFWS)

The USFWS administers the Endangered Species Act (ESA). It 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 only the Utah prairie dog is listed as “threatened,” and the Mexican prairie dog is listed as “endangered.” However, foreign endangered species are primarily managed by the USFWS International Affairs Program, not the Endangered Species Program.

A legal settlement in May 2011 between the USFWS and WildEarth Guardians resolved several court cases concerning prairie dog conservation. The settlement requires the agency to make final listing decisions or “not warranted” findings for 251 candidate species, including the Gunnison’s prairie dog. It also required a new 90-day finding on a petition to uplist the Utah prairie dog from “threatened” to “endangered.”<sup>5</sup> The USFWS withdrew its appeal of a court decision that struck down its 2007 denial of upgraded protections for the Utah prairie dog. However, even after withdrawing its appeal, the agency again found that the species did not warrant “endangered” status.

The USFWS is working on finalizing the revised recovery plan for the Utah prairie dog. The USFWS at last proposed to revise a special 4(d) rule that allowed trapping or shooting of up to 6,000 Utah prairie dogs annually – nearly half the existing adult population. The proposed amendments would limit take of Utah prairie dogs to 10 percent of the current annual population count, with 7 percent allocated to agricultural lands and 3 percent to private lands within 0.5 miles of Utah prairie dog conservation lands. The USFWS would cap the allowable take at 6,000 prairie dogs per year in the event that 10 percent of the current population count exceeded 6,000. The draft rule is an improvement in that it clarifies and strengthens limits on the number of prairie dogs that can be killed annually. However, wildlife advocates are disappointed that USFWS continues to allow shooting of a “threatened” species.

USFWS also withdrew its appeal of a court decision that USFWS violated the law when it found that only Gunnison’s prairie dogs in montane habitat warranted ESA listing, while those in lower-elevation prairie habitat did not. USFWS’s withdrawal of the appeal comports with the rescission of a Bush era solicitor’s memo that attempted to rewrite the guidelines for what could or couldn’t be listed under the ESA. Contrary to that memo, the ESA gives the Service only three choices for listing species: 1) list the entire species across its range; 2) list a subspecies across its range; or 3) list a Distinct Population Segment of a vertebrate species. Under its settlement agreement with WildEarth Guardians, the USFWS must make a final listing decision or “not warranted” determination on whether to list the Gunnison’s prairie dog throughout its range before the end of 2016.

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<sup>5</sup> For more information on the settlement agreement, see [www.wildearthguardians.org/site/PageServer?pagename=priorities\\_wildlife\\_ESA\\_listing\\_milestone](http://www.wildearthguardians.org/site/PageServer?pagename=priorities_wildlife_ESA_listing_milestone).

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

Wildlife Services is a branch of the U.S. Department of Agriculture, Animal Plant Health and Inspection Service, charged with “wildlife damage management.” The agency killed more than 5,008,900 animals, including prairie dogs, in 2010.<sup>6</sup> WS fumigated 59 white-tailed prairie dog burrows; shot 394 Gunnison’s prairie dogs and fumigated 5,918 burrows with Fumitoxin tablets (an aluminum phosphide fumigant); shot or poisoned 20,486 black-tailed prairie dogs, killed 29 with Weevilcide, a fumigant, and fumigated 24,204 black-tailed prairie dog burrows with Fumitoxin tablets. WS did not relocate any prairie dogs and did not undertake any non-lethal management or otherwise mitigate its destruction of prairie dogs (WS 2011).

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

Black-tailed and Gunnison’s prairie dogs are both designated “species of greatest conservation need” by the Arizona Game and Fish Department (AZGFD). Arizona once had approximately 650,000 acres of black-tailed prairie dogs (USFWS 2000), but they were extirpated by poisoning campaigns in the early 1900s. Since 2008, the state has been working to reintroduce black-tailed prairie dogs. On the reintroduction sites, the state, in cooperation with the BLM, has made habitat improvements, taken measures to prevent plague, and prohibited shooting. The state’s goal is to have 7,100 acres of black-tailed prairie dogs, and their work towards that goal continued in 2011 (see Box 3).

For Gunnison’s prairie dogs, the state’s goal is to recover 75 percent of the area occupied in the early 1900s before major poisoning campaigns began. Arizona once had approximately 6,635,280 acres of Gunnison’s prairie dogs. Habitat Harmony (a non-profit organization), AZGFD, and the U.S. Forest Service relocated Gunnison’s prairie dogs from a school in Williams to the Kaibab National Forest this year, and the Forest Service intends to continue relocation work with the school district next year (see “U.S. Forest Service”). AZGFD mapped 108,353 acres of Gunnison’s prairie dogs in Arizona in 2007 (excluding tribal land – this number is a minimum count) (Underwood 2007). The state resurveyed Gunnison’s prairie dog colonies in 2011 and the Geographic Information System data is currently being analyzed. Shooting Gunnison’s prairie dogs is allowed with the exception of a spring closure during the breeding season from April 1 – June 15. The state does not limit poisoning of Gunnison’s prairie dogs. The four states within the range of the Gunnison’s prairie dog are monitoring the status of range-wide populations using occupancy modeling – all the states completed surveys in 2010. A report on these efforts will be available in spring 2012. AZGFD monitors both prairie dog species for plague and is applying to use a Gunnison’s

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<sup>6</sup> Wildlife Services annually releases information on its operations one year behind publication of *Report from the Burrow*, so its grade lags by one year as well.

prairie dog colony where black-footed ferrets were released in 2007 as a test site for a new sylvatic plague vaccine (see Box 2). The colony suffered a plague outbreak and numbers have not recovered though the state has dusted for the disease. The state hopes that the vaccine will facilitate recovery of this colony and the continued release of black-footed ferrets.

### **Box 3. Bringing Black-tails Back: Arizona's Reintroduction of Black-tailed Prairie Dogs**

Arizona once had approximately 650,000 acres of black-tailed prairie dogs, but they were extirpated by poisoning campaigns in the early 1900s. Arizona has decided they want their black-tails back. In 2008, the Arizona Game and Fish Department (AZGFD), in partnership with the Bureau of Land Management and the Phoenix Zoo, reintroduced the species to areas in Las Cienegas National Conservation Area. AZGFD released 181 prairie dogs during 2008 and 2009. In 2010, they released 119 more black-tailed prairie dogs into a new area in Las Cienegas (AZGFD 2010). And in 2011 the work continued, with the release of 80 more prairie dogs into the three existing colonies at Las Cienegas: Road Canyon, Mud Springs, and Cieneguita. Twenty of those prairie dogs were from New Mexico, relocated from southwest of



Black-tailed prairie dogs are released during a mark/recapture study in the Arizona colony. *Photo: Arizona Game and Fish Department.*

Carrizozo, New Mexico, from BLM land slated for development of a pipeline. The remaining sixty were from a colony in Sonora, Mexico, to provide genetic variability to the Las Cienegas colonies.

The state and partners made habitat improvements at the reintroduction sites, began supplemental feeding to enhance survivorship after the dry winter of 2010-11, took measures to prevent infection by plague, and prohibited shooting. Signs are displayed at all release sites to inform the public that shooting is punishable by law. AZGFD is analyzing the vegetation changes

that occur at release sites when prairie dogs are reintroduced to the landscape. The University of Arizona is conducting a survivorship study to help inform future prairie dog reintroduction and re-establishment. Monitoring reveals that survivorship since the 2011 release is 62.5, 86.4 and 80.9 percent for Road Canyon, Mud Springs, and Cieneguita, respectively. Overall survivorship is 77 percent. Monitoring will continue weekly through January 2012 and then monthly after that. AZGFD is investigating future options for additional release sites in southeastern Arizona; the state's goal is to have 7,100 acres of black-tailed prairie dogs.





## Colorado

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

Colorado once had between 3,000,000 – 7,000,000 acres of black-tailed prairie dogs (USFWS 2000). Colorado Parks and Wildlife (CPW) reported that the state had approximately 800,000 active acres (plus or minus ~80,000 acres) of black-tailed prairie dogs in 2006. A comparable survey indicates this may represent a 29 percent increase from 2002 (Odell et al. 2008). Colorado's three prairie dog species are all designated as "small game." 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 as "destructive rodent pests."

CPW conducts occupancy surveys for Gunnison's and white-tailed prairie dogs every three years to monitor populations (*for more information see Andelt et al. 2009*). Surveys were completed in 2005, 2007, and 2010 for Gunnison's prairie dogs. Data indicates that the statewide population is stable. The four states within the range of the Gunnison's prairie dog are also monitoring the status of range-wide populations using occupancy modeling – all the states completed surveys in 2010. A report on these efforts will be available in spring 2012.

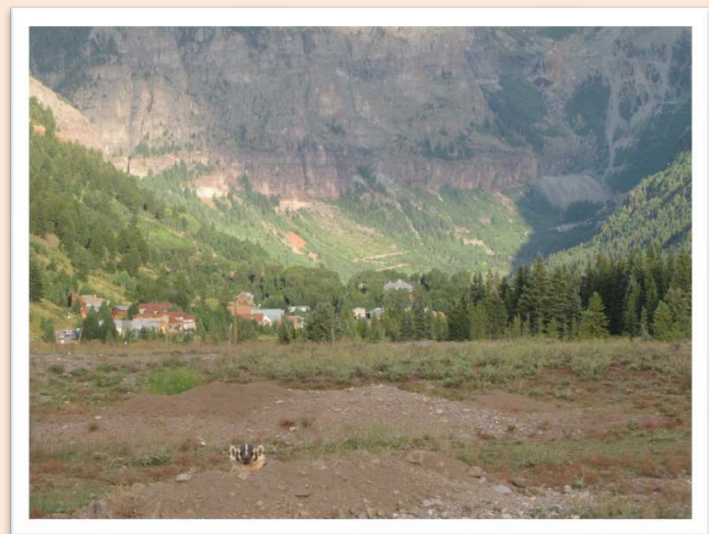
The CPW is taking action to manage and minimize plague events. Plague is the biggest threat to Gunnison's prairie dogs in Colorado. To proactively manage plague, in 2011 CPW applied Delta Dust within burrows on approximately 651 acres of Gunnison's prairie dog habitat in 19 colonies (536 acres in the Gunnison Basin, 97 acres in South Park, and 18 acres in the South East). CPW hired a plague researcher to help research and manage the disease in the state. CPW is collaborating with the U. S. Geological Survey and the National Wildlife Health Center on research and development of a sylvatic plague vaccine (see Box 2). Additional research evaluating sylvatic plague vaccine efficacy and duration of immunity will continue in 2012. In collaboration with University of Colorado at Boulder, CPW is using genetic testing to determine whether or not there are two subspecies of Gunnison's prairie dog in Colorado and throughout the range of the species. Relocation of Gunnison's prairie dogs in Colorado has been suspended until the genetic analysis is complete and more information on plague has been collected.

CPW conducted surveys for white-tailed prairie dogs in 2004, 2008, and 2011. The 2011 analysis has not yet been completed. The results from the 2004 and 2008 surveys showed that populations were stable across the state. CPW estimated occupied acreage of black-tailed prairie dogs in the state in both 2002 (see White et al. 2005a) and 2006, as mentioned above. CPW's implementation of the aerial survey method in 2002 was criticized by scientists concerned that it may have overestimated occupied acreage (Miller et al. 2005, *but see White et al. 2005b*). Changes may be made depending on the outcome of action items recommended in the U.S. Geological Survey's report, *Recommended Methods for Range-wide Monitoring of Prairie Dogs in the United States*.

#### **Box 4. Sharing Open Space: the Town of Telluride, Colorado**

WildEarth Guardians and local activists in Telluride, Colorado, achieved a remarkable conservation success for Gunnison's prairie dogs in June 2011. At great expense, Telluride recently purchased a parcel of land for town open space, now known as the Valley Floor. In response to concerns about possible poisoning of the colony of Gunnison's prairie dogs on the Valley Floor, WildEarth Guardians worked with Telluride and the San Miguel Conservation Foundation to craft a "natural dispersal" management plan that prohibits lethal control and allows the prairie dogs to expand beyond the current boundaries of their colonies. Under this plan, Telluride will not take any steps to contain the prairie dogs within the conservation focus area, east of Boomerang Road, but also will not take measures to protect them outside of the colonies aside from prohibiting intentional killing. Telluride is the first town to adapt a "natural dispersal" management plan; this is a major advancement in human/prairie dog coexistence and could serve as a model for prairie dog conservation across the West.

The Telluride Town Council unanimously adopted the management plan on June 21, 2011, and town employees are currently implementing the plan on the Valley Floor, including translocating prairie dogs from areas of conflict, planting willows to create a natural barrier along a road, installing raptor perches to encourage natural predation and raptor diversity, and posting educational signs near the prairie dog conservation focus area. Working with nature and with the prairie dogs will prevent these animals from suffering lethal control, save resources, preserve biodiversity, and enhance the natural character of the Valley Floor.



The Telluride Valley Floor, with prairie dog and badger burrows and a resident badger in the foreground. *Photo: © Kent and Ramona Gaylord.*

WildEarth Guardians is serving a continuing role by assisting with monitoring the natural expansion and contraction of the colonies. We are also engaging in public education to increase tolerance of and appreciation for prairie dogs.

One of the objectives of CPW's Gunnison's and white-tailed prairie dog conservation strategy is to reestablish Gunnison's and/or white-tailed prairie dogs in suitable, formerly occupied habitat through relocation efforts, as well as potentially relocating Gunnison's and/or white-tailed prairie dogs from urban areas where they are at risk from development (Seglund and Schnurr 2010). However, Colorado's unique relocation law, SB-99111, requires anyone wishing to relocate prairie dogs across county lines to obtain a permit from CPW and the approval of the receiving county commission. Because county commissions can and do deny permission, this law complicates and inhibits relocation of prairie dogs from areas slated for development into other areas including public lands and land trusts with the potential to become large-scale reserves. Colorado prohibits prairie dog shooting on public lands from the end of February until June 15 for all three species of prairie dogs in the state. The CPW conducts a variety of prairie dog education programs targeted to landowners and K-12 students.

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

Kansas historically had 2,000,000 – 2,500,000 acres of black-tailed prairie dogs (USFWS 2000). Kansas' most recent prairie dog survey from 2008 found 148,000 acres of prairie dogs. The next survey is planned for 2013. The black-tailed prairie dog is listed as a species of "greatest conservation need" in Kansas' Comprehensive Wildlife Conservation Strategy, which provides some management guidance but no regulated protection. The Kansas Department of Wildlife, Parks, and Tourism (KDWPT) classifies black-tailed prairie dogs as a "wildlife" species and has produced a prairie dog conservation plan. KDWPT's goal is to maintain 130,000 occupied acres of prairie dogs and increase the number to 150,000 acres by 2012 if incentive programs are developed (KSPDWG 2002). 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 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.<sup>7</sup> Logan County, Kansas, has been trying to use this statute to force the extermination of prairie dogs on the Haverfield/Barnhardt/Blank Complex, a ranch property where landowners have been working with Audubon of Kansas to conserve the largest complex of black-tailed prairie dogs in the state and reintroduce black-footed ferrets. In September 2010, a judge denied the county's suit to poison prairie dogs on the properties (Stumpe 2010). The Logan County Commission is now appealing the ruling (Klataske 2011). Kansas enforces no limit or seasonal closure on prairie dog shooting. Non-residents need a license to shoot prairie dogs – residents are not required to have a license to hunt prairie dogs, moles, or gophers.<sup>8</sup> The KDWP monitors about 2,000 acres to detect plague in prairie dogs but does not take actions to prevent or mitigate disease outbreaks. Kansas offers Landowner Incentive Program (LIP) grants paying up to 75 percent of the cost for projects that benefit species of greatest conservation need. No landowners have

<sup>7</sup>Audubon of Kansas is encouraging people to post a recommendation that the 1901 prairie dog eradication statutes (K.S.A. 80-1201 through 80-1208) be repealed at the "Office of the Repealer," online at [repealer.ks.gov](http://repealer.ks.gov).

<sup>8</sup> See [kansasstatutes.lesterama.org/Chapter\\_32/Article\\_9/32-919.html](http://kansasstatutes.lesterama.org/Chapter_32/Article_9/32-919.html).

taken advantage of the LIP program specifically for black-tailed prairie dogs, though some projects may benefit them.

USFWS and partners scheduled an open house in September 2011 at the 4-H building in Oakley, Kansas, to celebrate the 30<sup>th</sup> anniversary of the rediscovery of the black-footed ferret, which was feared extinct before rediscovery in 1981. County commissioners withdrew permission for use of the building. When the event was moved to the meeting room of a nearby truckstop, the owner was threatened with a boycott and also withdrew permission to use his property. The event was eventually held at the private home of Logan county residents (Klataske 2011).

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

Montana once had 1,471,000 – 6,000,000 acres of black-tailed prairie dogs (USFWS 2000). A 2008 survey found 193,239 acres of occupied colonies and 30,199 acres of inactive colonies in the state (Rauscher et al. 2012). Montana is at the northern edge of white-tailed prairie dog distribution. Current known estimates of occupied white-tailed prairie dog habitat in Montana range from 118 acres (Knowles 2004) to 366 acres (Atkinson and Atkinson 2005) in 11 colonies. White-tailed prairie dog colonies in Montana are not mapped annually and the current acreage is uncertain. One of these colonies was re-established through translocation efforts. Montana Department of Fish, Wildlife, and Parks (MFWP) has no further plans to translocate additional white-tailed prairie dogs, as both the permits and the funding have expired. MFWP has cosponsored a statewide survey effort to estimate occupied acreage for white-tailed and black-tailed prairie dogs. Final results are pending. Survey and monitoring data are being incorporated into modeling efforts and conservation planning such as the Crucial Areas Planning System.<sup>9</sup>

Montana’s Comprehensive Wildlife Conservation Strategy lists both resident prairie dog species as high priority “species of concern,” but this provides no conservation mandate. MFWP has a prairie dog conservation plan and classifies both species as “species of concern.” However, Montana’s Department of Agriculture has more authority over prairie dog management than MFWP. The Department of Agriculture designates both black- and white-tailed prairie dogs “vertebrate pests.” There is no prohibition on shooting either species and a license is not required (FWS 2010). Shooting is prohibited, however, within some national wildlife refuges (e.g., Charles M. Russell National Wildlife Refuge). Prairie dog poisoning is unregulated, except in the black-footed ferret recovery area in the Charles M. Russell National Wildlife Refuge or if the area to be treated exceeds 80 acres in size (Nistler 2009). The state does not monitor or mitigate for plague in prairie dogs. The state holds some conservation easements on private property to protect a variety of wildlife species but does not quantify the program’s results or prairie dog acres protected.

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<sup>9</sup> More information at <http://fwp.mt.gov/wildthings/conservationInAction/crucialAreas.html>.

The state conservation plan applies in situations outside of Department of Agriculture authority. MFWP and non-governmental organizations are trying to identify ways to conserve prairie dogs and to increase public acceptance, and MFWP supports WAFWA efforts to solidify landowner incentive programs for prairie dog and black-footed ferret conservation.

**F****Nebraska*****(Black-tailed prairie dogs)***

Nebraska once had an estimated 6,000,000 acres of black-tailed prairie dogs (USFWS 2000). 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). The ban on research was later rescinded but the state so far has done little to conserve prairie dogs. Nebraska has no limits on shooting prairie dogs, except that non-residents need a license. The state's wildlife agency initially rejected a proposal to reintroduce prairie dogs to 40 acres on a private nature sanctuary (Duggan 2010). After further negotiations the agency decided to allow the reintroduction (Duggan 2011), and it will hopefully take place in spring 2012. State Senator LeRoy Loudon introduced a bill (LB 473) which would give counties the power and the duty to control prairie dogs on private or (non-federal) public land. Counties would have the power to notify landowners that a colony is not being sufficiently managed, and could require landowners to take action to remove prairie dogs.<sup>10</sup> The bill won first-round approval in the legislature in Jan. 2012, passing 30-0. The bill requires two more votes before it goes to the Governor (AP 2012). This bill would effectively hand over control of prairie dogs on private land to the counties, whether the landowner is interested in conserving them or not. In addition, state and local agencies are included in the definition of "landowner," so a county could require Nebraska Game & Parks to poison prairie dogs on parks or wildlife management areas, or could bill them for the cost.

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

Historically, more than 6,640,000 acres were occupied by black-tailed prairie dogs in New Mexico (USFWS 2000). The New Mexico Natural Heritage program (NMNH) used digital orthophoto quarter quadrangle (DOQQ) color air photos from 2005 to estimate area of prairie dog disturbance over the historical range of the black-tailed prairie dog. NMNH estimated ~40,000 acres of active black-tailed prairie dog towns in the study area, an apparent increase from an estimate based on 1996-97 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). Using a similar method – DOQQ photographs and a model – NMNH estimated the

<sup>10</sup> See [www.kmcx.com/pages/localnews.html?feed=353692&article=9628551#ixzz1kj2naplK](http://www.kmcx.com/pages/localnews.html?feed=353692&article=9628551#ixzz1kj2naplK).

### Box 5. For the Wild Ones: the Southern Plains Land Trust

What is one of the most direct ways to save prairie dogs? If you asked the folks at the Southern Plains Land Trust, they'd say their mission is clear: purchase shortgrass prairie and preserve its native wildlife and plant community, of which the black-tailed prairie dog is a key member.



Swift foxes are among the members of the prairie dog community that thrive on SPLT's nature preserves. Photo © Lauren McCain and Richard Reading.

Southern Plains Land Trust (SPLT) is working to acquire land and conservation easements in order to establish a network of shortgrass prairie reserves in the Southern Plains. Safe havens such as these are especially important to shortgrass prairie, one of the most imperiled ecosystems in the United States. SPLT's approach is to acquire lands near national grasslands in southeast Colorado, southwest Kansas, northeast New Mexico, and the Oklahoma panhandle while simultaneously promoting grasslands policy reform. The end goal is to reestablish the natural mosaic of prairie dog colonies that underpin

the shortgrass prairie and to promote respect for this embattled animal and its ecosystem. SPLT advocates for improved management on public lands and undertakes education and outreach.

Currently, there are ~3,300 acres of protected land within SPLT's Prairie Reserve Network, including three preserves in Baca County, CO, and one in Powers County, CO. Human intervention on SPLT preserves is kept to a minimum, mainly consisting of restoration activities such as fence removal to ensure preserves are accessible to wildlife. SPLT aims to help the prairie heal itself and to present a model for peaceful human coexistence with native wildlife.

area of active Gunnison's prairie dog towns on the Navajo Nation and Reservation of the Hopi Tribe at ~253,567 acres (only a portion of this acreage is in New Mexico – the remaining area of the Navajo Nation falls with Utah and Arizona, and the Reservation of the Hopi Tribe is entirely within Arizona) (Johnson et al. 2010b).

Both black-tailed and Gunnison’s prairie dogs are listed as “species of greatest conservation need” in New Mexico’s Comprehensive Wildlife Conservation Strategy. The four states within the range of the Gunnison’s prairie dog are monitoring the status of range-wide populations using occupancy modeling – all the states completed surveys in 2010. A report on these efforts will be available in spring 2012. New Mexico released a draft conservation plan for the Gunnison’s prairie dog in 2008, and the state is still working off of the draft plan. New Mexico is also working on developing a Memorandum of Understanding that would cover conservation of both species in the state. Shooting is banned on state trust lands but is otherwise unrestricted. The state does not monitor or mitigate for plague in prairie dogs. The state has an incentive program for landowners to protect prairie dogs, but no landowners had enrolled as of February 2011. New Mexico has no permitting process for relocation of prairie dogs, which can lead to difficulty in tracking relocation projects that are occurring.

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

Black-tailed prairie dogs once inhabited an area of about 2,000,000 acres in North Dakota (USFWS 2000). Based on the state’s last survey in 2006, occupied acreage has decreased to 22,597 acres, and may have decreased further as sylvatic plague is believed present in the state as of 2011. The North Dakota Game and Fish Department (NDGF) is in the process of surveying black-tailed prairie dog range throughout the state. 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 has a goal of maintaining a viable population of prairie dogs in the state, but the target population may fall below the amount needed to sustain prairie dog-dependent specie (Williams 2002). 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). North Dakota has no limits on prairie dog shooting, except for requiring non-residents to obtain a license. NDGF provides a map of the general locations of prairie dog towns in the Hunting/Trapping section of their website.

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

Oklahoma once had ~950,000 acres of black-tailed prairie dog habitat (USFWS 2000). The most current estimate of occupied acreage is 42,000, suggesting continued range contraction since 2006. This is due to plague outbreaks in the panhandle. Oklahoma surveyed their prairie dog range in 2011 using state-wide aerial photos and ground-truthing. Analysis of the results is underway. The Oklahoma Department of Wildlife Conservation (ODWC) classifies prairie dogs as “wildlife-nongame” and they are listed as “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 less than 100 occupied acres. Landowners with 10 or more occupied acres can enroll in a Landowner Incentive Program (LIP) and receive an annual incentive payment for the occupied acres. They can also receive incentive payments for preserving native rangeland adjacent to the prairie dog colony for expansion. These conservation agreements have a 10-year term. The LIP program currently has 38 enrolled landowners protecting 16,811 acres. However not all enrolled acres are occupied, and 4 landowners are expected to cancel their enrollment due to losing their occupied acreage of prairie dogs. Shooting is unlimited on most land ownerships (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.



## South Dakota

## *(Black-tailed prairie dogs)*

Around 1,757,000 acres of black-tailed prairie dogs once existed in South Dakota (USFWS 2000). The South Dakota Game, Fish and Parks Department (SDGFP) estimated that it had 630,849 acres in its 2008 survey. There are tentative plans to conduct another survey in 2012. South Dakota classifies the black-tailed prairie dog as a “pest” species. The SDGFP underwrites poisoning costs on private and state lands. Until recently, landowners could receive monetary compensation for protecting prairie dogs on private land in the 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 largest remaining concentration of black-tailed prairie dog colonies in the United States. However, the grant that provided money for that incentive program has expired and the program has been canceled. South Dakota’s Agriculture Department sells prairie dog poison to landowners.

The South Dakota Supreme Court recently ruled that the state was obligated to control prairie dogs that migrated from public to private land, and landowners may be eligible for monetary recovery of damages. However when the case was sent back to the circuit court to determine financial damages, it was dismissed. The circuit court judge determined that the ruling had not given enough attention to the states’ claim that it cannot be held responsible for wildlife damages (Cook 2010, AP 2011).

The South Dakota Legislature passed House Bill 1047 on February 28, 2011, which ended the spring shooting closure on public lands (with the exception of the black-footed ferret management area in Conata Basin, which is closed year round).<sup>11</sup> There are no daily or possession limits for prairie dogs. The National Park Service, U.S. Forest Service, U.S. Fish and Wildlife Service, and World Wildlife Fund mitigate for plague in parts of the Conata Basin.

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<sup>11</sup> See [legis.state.sd.us/sessions/2011/Bill.aspx?Bill=1047](http://legis.state.sd.us/sessions/2011/Bill.aspx?Bill=1047).



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

At one time, Texas had an astounding ~58,000,000 acres of black-tailed prairie dogs (USFWS 2000). The Texas Parks and Wildlife Department estimated 115,000 acres occupied by prairie dogs in its 2006 survey. 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. Texas completed a resurvey of priority areas identified in the Texas Black-tailed Prairie Dog Management Plan. Preliminary results indicate that while some areas have grown and others have shrunk, overall acreage in priority areas decreased between 2005 and 2010. The Texas Parks and Wildlife Department designated black-tailed prairie dogs as nongame and a “species of concern.” Texas’ management plan set a goal of 293,129 acres of occupied habitat by 2011 (TXPDWG 2004); this objective has not been met. In February 2011, two landowners were enrolled in an incentive program that protected almost 3,600 acres of prairie dogs and their habitat. An updated enrollment number is not yet available. Texas allows unlimited prairie dog shooting with a license. The state allows live-collecting of less 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 maintains a voluntary prairie dog colony monitoring program intended to promote conservation. The state agriculture department distributes poison to control prairie dogs, but requests made for the poison are decreasing. The state has formed a Texas Black-footed Ferret Working Group to assess the feasibility of reintroducing black-footed ferrets. Drought and plague have been a problem for Texas prairie dogs – drought has been ongoing in parts of the state for over a year, and plague may have reduced colony acreage by 50 percent in some areas of the Southern Plains.

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

In 2011, the Utah Division of Wildlife Resources (UDWR) reported a spring count of 6,661 adult Utah prairie dogs during its annual trend count.<sup>12</sup> The USFWS has authority over Utah prairie dog recovery efforts, as the species is federally listed as “threatened.” The USFWS delegates most field work to the state. The UDWR has relocated Utah prairie dogs from private lands and the Cedar Ridge Municipal Golf Course to federal public lands. Relocation has had only mixed success in the past, resulting in survival rates of 10 percent or less. However, the state has made improvements in its relocation methods in the last few years. Approximately 1,250 Utah prairie dogs were translocated to six sites on protected land in 2011. The Utah Prairie Dog Recovery Team also identified six future translocation sites located on public land managed by the Dixie National Forest. Translocation tubes and nest boxes have been installed at one of these sites in preparation for translocations in coming years. The Dixie National Forest has also completed habitat enhancements on 20,746 acres of habitat, and released prairie dogs

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<sup>12</sup> The Utah Division of Wildlife Resources doubles this count to provide an adult population estimate; the count is designed for estimating population trends.

to six other translocation sites (1992-2010) – Upper Berry, Middle Berry, Lower Berry, Pat Willis Draw, Coyote Hollow, and Mud Springs.

Utah is launching a pilot program to test the efficacy of a habitat credit exchange program aimed at preserving Utah prairie dog habitat on private lands. The program is administered by Panoramaland and Color Country Resource Conservation and Development Councils (RC&D) and other partners. The habitat credit exchange program is designed to be self-sustaining through free market purchases and sales of credits. The first two conservation easements under this program were recently signed and recorded. Because it is still in the development stages this program does not change Utah's grade, but we will be assessing its effectiveness in the coming years. For more information, see "Utah prairie dog" below.

Utah Senators Orrin Hatch and Mike Lee introduced a bill (S. 1580) that would exempt Utah prairie dogs within the boundaries of the Parowan City Airport and the Paragonah cemetery from the protection of the ESA. The bill was referred to the Senate Committee on Environment and Public Works. There is also a proposal before the Natural Resources, Agriculture and Environmental Quality Appropriations Subcommittee to build a barrier around the Parowan Airport. The committee is scheduled to vote on Feb. 13 (Mortensen 2012).

Gunnison's and white-tailed prairie dogs are identified as "species of concern" in the Utah Wildlife Action Plan. Utah bans shooting of Gunnison's and white-tailed prairie dogs on public lands during the breeding season, April 1 – 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 a *Gunnison's Prairie Dog and White-tailed Prairie Dog Conservation Plan* in 2007. 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. The state estimates that it has 375,342 acres of potential Gunnison's prairie dog habitat, but this is a rough estimate with no confidence limits. Because it includes acreage that may be geographically inaccessible to prairie dogs, it is likely an overestimate of potential habitat. The state estimates that 14 percent of that area is occupied. The four states within the range of the Gunnison's prairie dog are also monitoring the status of range-wide populations using occupancy modeling – all the states completed surveys in 2010. A report on these efforts will be available in spring 2012.

Utah surveyed for white-tailed prairie dogs in 2008 and resurveyed in 2011. They estimate 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. Since 2008, white-tailed prairie dog occurrence has increased. Occupancy surveys for both the white-tailed and Gunnison's prairie dog will be repeated every third year.

## D-

## Wyoming

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

Wyoming once had around 16,000,000 acres occupied by black-tailed prairie dogs (USFWS 2000). The Wyoming Game and Fish Department (WGFD) surveyed black-tailed prairie dog populations in 2006 and estimated 229,607 occupied acres (Grenier et al. 2007). The department 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 recommendations are unlikely to happen, as the Wyoming Game and Fish Department removed both species from the list of “species of greatest conservation need” in the state’s latest revision of the state wildlife action plan. This effectively eliminates state funding for prairie dog surveys and conservation, as the state focuses efforts on species of greatest conservation need. The condition of black-tailed prairie dog colonies appeared to have decreased in 2009, with over half impacted by disease (most likely sylvatic plague and/or poisoning) (Grenier 2010).

WGFD estimated that Wyoming had 27,822,847 acres of potential white-tailed prairie dog habitat. The department conducted a statewide white-tailed prairie dog aerial survey in 2008 and estimated 2,893,487 colony acres (plus or minus 520,890 acres) (Grenier and Filipi 2009). Both white- and black-tailed prairie dogs are designated as a “non-game species of special concern” by WGFD and a “pest” by the state’s agriculture department.

In 2011, the state approved the request to translocation prairie dogs within Thunder Basin. 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. Wyoming has no limits on shooting. Wyoming state law delegates prairie dog poisoning to counties.

## Box 6. Partnering for Prairie Dogs: Thunder Basin National Grassland

The list of participants was impressive: the U.S. Forest Service, Wyoming Game and Fish Department, U.S. Fish and Wildlife Service, Defenders of Wildlife, The Humane Society of the United States, World Wildlife Fund, and Biodiversity Conservation Alliance. These diverse government agencies and non-profit organizations came together to make Forest Service history; the first relocation of black-tailed prairie dogs onto a national grassland (USFS 2010).

The first relocation occurred in 2010, when over 550 prairie dogs got a new home (USFS 2010). A second relocation in 2011 moved 349 more prairie dogs out of danger. The prairie dogs were moved from the periphery of Thunder Basin, where they are frequently poisoned for



Jonathan Proctor (Defenders of Wildlife) sets a trap during a prairie dog relocation effort at Thunder Basin. *Photo © Lindsey Sterling-Krank.*

the benefit of ranchers on adjoining private lands, to a protected 56,000-acre interior section of the grassland. This area once accommodated roughly 18,000 acres of prairie dog colonies and about 180,000 prairie dogs (Defenders 2010). The complex was designated as an area for black-footed ferret reintroduction, but sylvatic plague nearly wiped out the prairie dogs in 2001, halting those plans (Defenders 2010, USFS 2010).

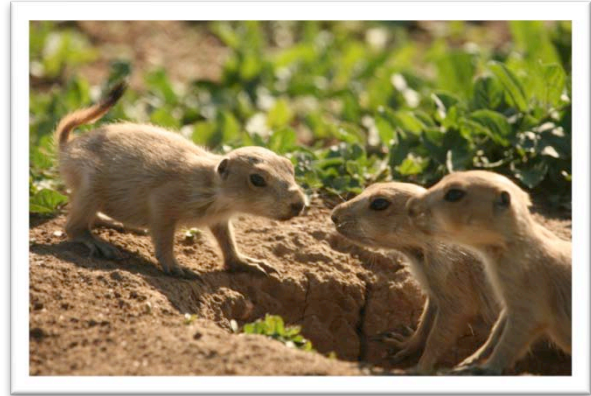
This relocation success story marks the first time that prairie dogs have been moved on federal grasslands rather than poisoned. The Forest Service's new prairie dog management plan for Thunder Basin, adopted at the end of 2009, made the landmark project possible.

The plan prioritizes nonlethal methods of mitigating wildlife conflicts (Defenders 2010). Collaboration between government agencies and non-profit organizations made the new management plan possible. Now the Forest Service, working with other agencies and organizations, is undertaking active restoration in Thunder Basin National Grassland. In 2011, the agency used prescribed fire on 4,000 acres to improve habitat and encourage prairie dog expansion, dusted 2,000 acres of habitat with insecticide to prevent plague, and mapped 5,600 acres of active colonies. The collaboration made possible by this landmark restoration project, which saved the lives of hundreds of prairie dogs, is bringing life back to a prairie community devastated by plague and decades of mismanagement.

## Status of the Five Prairie Dog Species

### Black-tailed Prairie Dog

Unfortunately, not much changed for black-tailed prairie dogs in the last year. Plague continues to decimate colonies – prairie dogs have little or no immunity to this disease, which was introduced to North America in the late 1800s (see Box 2). Poisoning and shooting continue unabated since the species was last denied listing in 2009. The black-tailed prairie dog population once numbered in the billions and ranged across 11 U.S. states and parts of Mexico and Canada, covering an estimated 100,000,000 acres (USFWS 2000). Conversion of native grasslands to agriculture, particularly in the eastern extent of the species’ range, has resulted in the permanent loss of approximately 40 percent of their original habitat. Black-tailed prairie dogs have been eliminated from up to 99 percent of their historic range in the last 150 years.



Black-tailed prairie dog pups. Photo © Richard Reading.

### Gunnison’s Prairie Dog

The Gunnison’s prairie dog population has declined by 98-99 percent across its historic range; the occupied area declined from ~24,000,000 acres in 1916 to between 340,000 and 500,000 acres in 2008 (USFWS 2008). Land development and oil and gas drilling are



A Gunnison’s prairie dog peeks from its burrow. Photo © Ramona Gaylord.

particular threats; USFWS predicts that urban and suburban sprawl and commercial development will impact 49 percent of Colorado’s Gunnison’s prairie dog habitat in Colorado by 2020 (USFWS 2008). The greatest threat to the Gunnison’s prairie dog is plague, which can cause 100 percent mortality in a colony. The impact of plague, combined with the effects of continued shooting, poisoning, and habitat loss, has contributed to the continued decline of Gunnison’s prairie dogs; though they are a candidate species for listing on under the ESA, that designation provides no legal protection. A legal settlement reached in 2011 between WildEarth Guardians and

USFWS requires the agency to make final listing decisions or “not warranted” findings for 251 candidate species, including the Gunnison’s prairie dog, by 2016. Instead of languishing on the candidate list for decades, like other candidate species, the Gunnison’s prairie dog now has a

firm deadline for a listing decision.

In the meantime, the four states within the range of the Gunnison's prairie dog are monitoring the status of range-wide populations using occupancy modeling – all the states completed surveys in 2010. A report on these efforts will be available in spring 2012. USFWS withdrew its appeal of a court decision that USFWS violated the law when it found that only Gunnison's prairie dogs in montane habitat warranted ESA listing, while those in lower-elevation prairie habitat did not (*for details see "USFWS" above*).

## Mexican Prairie Dog

The Mexican prairie dog is 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). The biggest threat to Mexican prairie dogs throughout their range is loss of habitat to agriculture, including plantations of maguay (an agave), nopal (a cactus), and potato farms supplying the junk food industry. The primary buyer of the potatoes is U.S.-based Frito Lay, Inc., a subsidiary of PepsiCo, Inc. Concerned Mexicans are urging U.S. citizens to contact PepsiCo and ask the company to stop buying potatoes from farms within Mexican prairie dog habitat.<sup>13</sup> In 2010 over 300 acres of the largest prairie dog colony in Coahuila, Mexico, were plowed. Though the activity was stopped and the land is no longer open to agriculture, the Mexican federal government agency, Procuraduría Federal de Protección al Ambiente, declined to prosecute the extensive damage that had already occurred.

The Mexican government outlawed killing Mexican prairie dogs in 2004. The species is protected under the U.S. Endangered Species Act as "endangered." Conservation organizations, including Pronatura Noreste and Profauna, and Mexican and U.S. scientists are working to



Mexican prairie dog. Photo © Elaine Miller Bond.

protect the animals and their habitat. Scientists in San Luis Potosí have been studying the effects of cattle exclusion on Mexican prairie dogs, but the study has been complicated by severe drought that may have caused colony abandonment.

An updated population count, using direct counts and compared with a distance sampling method, is underway but is not yet

completed. Stricter regulation of agriculture in Nuevo León may have helped the stability of colonies. Mexican prairie dogs in San Luis Potosí have been experiencing some population

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<sup>13</sup> Visit [perritomexicano.blogspot.com/](http://perritomexicano.blogspot.com/) to read more and take action.

stability as well and some new colonies have emerged, but the severe drought this year may be causing colony abandonment and renders the future uncertain.

## Utah Prairie Dog

The news was mixed for Utah prairie dogs in 2011. The species is listed as “threatened” under the Endangered Species Act. Despite this federal status, Utah prairie dogs still face considerable threats including habitat loss, plague, and livestock grazing. The Utah prairie dog population declined from historical numbers of ~95,000<sup>14</sup> to a low of 3,300 individuals in the early 1970s (USFWS 2009). The 2011 spring count estimated 13,332 adults. USFWS is finalizing its revised recovery plan for the Utah prairie dog. In the interim the agency is working from the draft plan, released in 2009. The recovery plan endorses relocating the species whenever possible, but relocation has had only mixed success in the past. The new draft revised recovery plan recognizes the need to continue habitat improvements and translocations of prairie dogs on federal lands and facilitating conservation on non-federal lands—e.g., using tools such as safe harbor agreements, conservation banks, conservation easements, and fee simple acquisitions of key habitat from willing landowners (USFWS 2009).

In 2009, USFWS finalized a Programmatic Safe Harbor Agreement covering all Utah prairie dogs on private lands. Private landowners can choose to enter into a Safe Harbor Agreement (SHA) with a non-governmental entity, Panoramaland and Color Country Resource Conservation and Development Councils (RC&D). 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. As of 2010, five individual Utah prairie dog Safe Harbor Agreements are in place, covering approximately 1,230 acres (USFWS 2009). In 2011 two potential new SHA sites were identified. A treatment plan was developed for several other enrolled properties and the state of Utah and partners are pursuing funding to improve habitat on these properties.



Utah prairie dogs. Photo © Jess Alford.

Utah is beginning a pilot program to test the efficacy of a habitat credits exchange program (HCEP) aimed at preserving Utah prairie dog habitat on private lands. The program is

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<sup>14</sup> It should be noted that these estimates were derived from informal interviews rather than survey data and as such may be unreliable.

administered by the RC&D and other partners. Landowners with at least 20 Utah prairie dogs on 40 acres may sell a perpetual conservation easement on those acres to the RC&D. The landowner will then work with the RC&D to develop a customized management plan and coordinate stewardship of the land that “protects habitat values for [Utah prairie dogs] and allows continued agricultural activities.”<sup>15</sup> This translates into habitat credits. A landowner wishing to develop property with Utah prairie dogs may then purchase these credits to offset loss of Utah prairie dogs and habitat. The purchaser of conservation credits can proceed with their development projects without delay or restriction. Proceeds will be used to support the program and related management requirements. Utah prairie dogs and their habitat on private land are subject to the ESA’s “take” prohibitions, meaning that aside from the control allowed under the special 4(d) rule or through requirements developed in Habitat Conservation Plans, disturbance or harm to Utah prairie dogs and their habitat is not allowed without a permit from USFWS. Utah prairie dogs on private land are vulnerable to development if the landowner decides to develop the land and the USFWS issues a “take” permit under the ESA. Due to the controversy that often surrounds prairie dog conservation in parts of Utah, an array of tools are needed to preserve Utah prairie dogs on private land. In conjunction with other activities including habitat creation and restoration, the HCEP could be an important way to involve private landowners in Utah prairie dog conservation and build their support. It remains to be seen whether this program will result in a net increase in occupied prairie dog acreage.

In 2003, WildEarth Guardians and other conservation groups and individuals submitted a petition to reclassify Utah prairie dogs from “threatened” to “endangered.” This year, Interior Secretary of the Interior Ken Salazar withdrew his appeal of a court ruling that ordered USFWS to revisit their 2007 negative finding on the petition. Unfortunately, the agency’s new court-ordered petition finding, made in June of 2011, was also negative. Although it declined to upgrade protections for the Utah prairie dog under the ESA, the USFWS at last proposed to revise a special 4(d) rule that allowed trapping or shooting of up to 6,000 Utah prairie dogs annually – nearly half the existing adult population. The proposed amendments would limit take of Utah prairie dogs to 10 percent of the current annual population count, with 7 percent allocated to agricultural lands and 3 percent to private lands within 0.5 miles of Utah prairie dog conservation lands. The USFWS would cap the allowable take at 6,000 prairie dogs per year in the event that 10 percent of the current population count exceeded 6,000. This draft rule is an improvement in that it clarifies and strengthens limits on the number of prairie dogs that can be killed annually. However, animal advocates maintain that allowing shooting of a “threatened” species sends the wrong message about the value of these animals, and recommend that other methods of mitigating conflict be implemented.

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<sup>15</sup> See [panoramalandrcd.org/?page\\_id=199](http://panoramalandrcd.org/?page_id=199).



## White-tailed Prairie Dog

White-tailed prairie dogs are found in Utah, Colorado, Wyoming, and a small area of southern Montana. The species' range has declined an estimated 92-98 percent since the late 1800s (CNE et al. 2002). The majority (56 percent) of remaining white-tailed prairie dog habitat is on



White-tailed prairie dog. Photo © Richard Reading.

BLM land. A high percentage of the species' range is leased by BLM for oil and gas drilling: about 50 percent of occupied areas that have been mapped in Utah, 30 percent of estimated range in Colorado, and 27 percent of the gross range in Wyoming (gross range indicates the boundaries of the species range, not the area of occupied or suitable habitat) (USFWS 2010). Conservationists

proposed multiple Areas of Critical Environmental Concern to conserve white-tailed prairie dogs, but the BLM refused to designate even one of them. The USFWS denied listing the white-tailed prairie dog in 2010. Conservation organizations have submitted a legal "notice of intent" to challenge this negative finding.

## Box 7. Prairie Dogs and You: Strategies for Coexistence

An increasing number of Western landowners are recognizing the importance of prairie dogs to the ecosystem and are taking steps to coexist with prairie dogs on private lands. There are many ways to coexist with and/or non-lethally control prairie dogs on your property. Of course, the first question should always be: does this population *need* to be controlled? Understanding the valuable role prairie dogs play in ecosystem health is the first step towards coexistence. Options for managing prairie dogs include:

- **ENJOYMENT.** Prairie dogs have a complex and interesting social life and provide habitat for many other species. If you enjoy having wildlife on your property, prairie dogs will provide endless opportunities for wildlife watching.
- **BARRIERS,** including visual barriers and vegetative barriers, can minimize prairie dog dispersal into areas where they are not wanted.
- **RAPTOR PERCHES** encourage predation by native raptors – a natural limiting factor that constrains the size of a colony.
- **PREDATOR SITES** work for foxes, coyotes, and other ground predators the way raptor perches work for birds of prey. Strategically placed straw bales, woodpiles, or other habitat can allow predators to increase their success and in some cases aid in slowing or stopping colony expansion.
- **GRAZING MANAGEMENT.** Overgrazed pastures are actually favorable for prairie dog colonization – the prairie dogs can see for long distances and spot predators without tall grass in the way, and they will still dig for seeds to eat instead of grass forage. Rotational grazing to increase grass height can influence prairie dog colonization in mixed and tallgrass prairie habitat.
- **GARDENING** or any disturbed soil is a big prairie dog attractor. Locate areas of disturbed soil out of view of the prairie dogs.
- **PASSIVE RELOCATION** is a carefully planned method of closing burrows so that prairie dogs move into an adjacent colony.
- **RELOCATION** removes prairie dogs and re-establishes them in a safe location.



Gunnison's prairie dog. Photo © Nicole Rosmarino.

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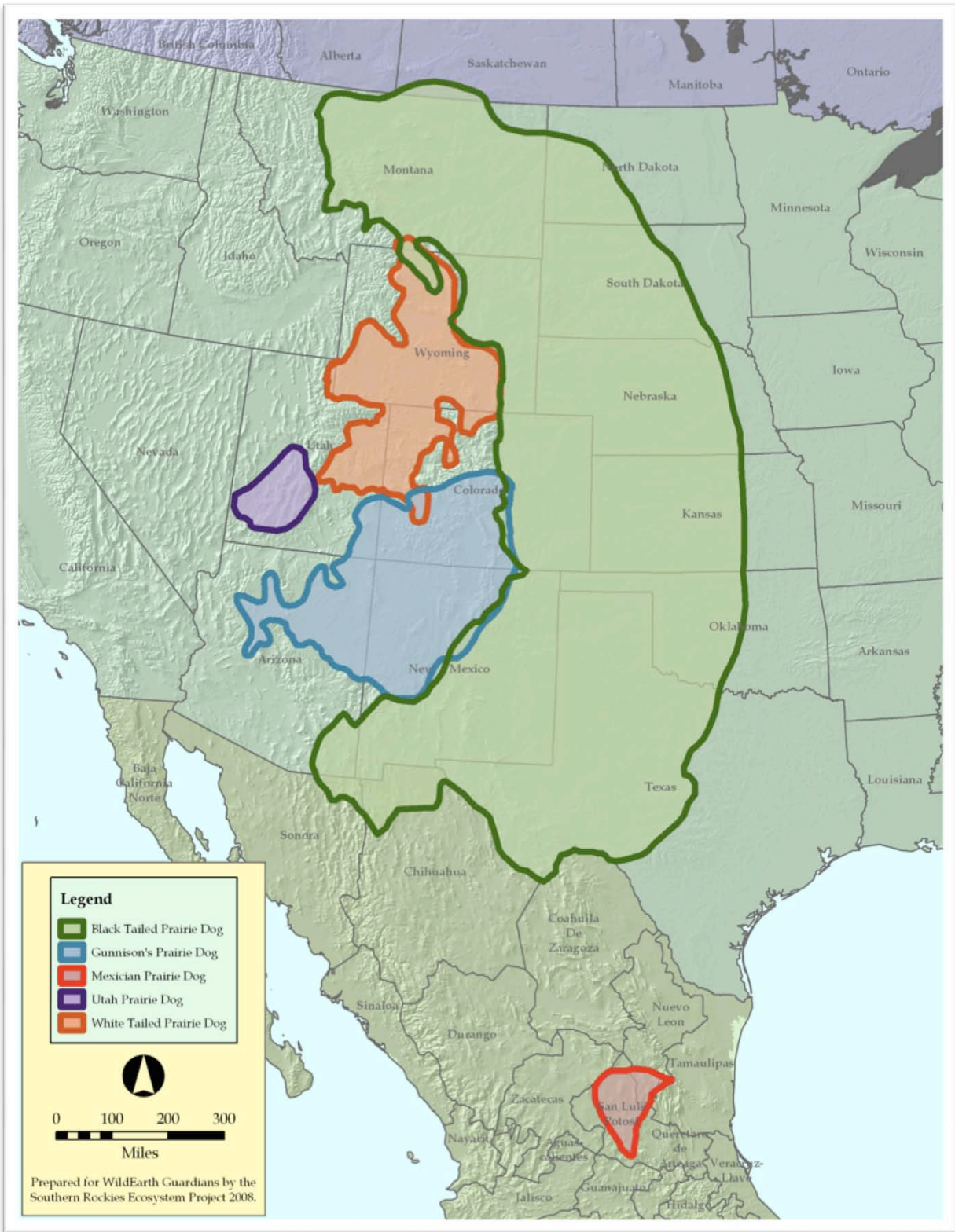
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[WS] Wildlife Services. 2011. Table G. Animals Taken by Component/Method Type and Fate by Wildlife Services - FY 2010.

# Prairie Dog Range Map





WILDEARTH  
GUARDIANS  
A FORCE FOR NATURE