# Report from the Burrow

## Forecast of the Prairie Dog 2014

Taylor Jones, WildEarth Guardians

A Report from

WildEarth Guardians
A Force for Nature
25 Years

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

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# Report from the Burrow: Forecast of the Prairie Dog 2014

WildEarth Guardians (hereafter, "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 our prairie dog populations has more serious implications for the future of western grassland ecosystems. In this year's report, we highlight the decline of seven species that depend on or benefit from prairie dogs (see Boxes 3-9). These species are declining because the prairie dog ecosystem is declining. If we lose prairie dogs, we will lose a number of other species as well.

*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 our wildlife and wildlife habitat. This report is a tool for the public to hold our public agencies accountable.

No federal or state agency has yet earned an "A" in *Report from the Burrow*. Arizona continues to lead western states with a "B." Colorado takes second place as the state's grade continues to rise due to a strong record of plague mitigation and research. The Bureau of Land Management's grade went up in recognition of the agency's role in a number of conservation projects, including sylvatic plague vaccine field trials (*see* Box 2), habitat restoration, and relocation. The Environmental Protection Agency (EPA) would be downgraded if possible, for approving the use of Kaput-D; because the agency was already failing, EPA gets DETENTION for the second year in a row. New Mexico also receives a DETENTION due to irresponsible ordinances on the city and county level and a prairie dog killing contest.

## 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 93-99 percent of their historic range in the last 150 years, and with that loss we lose the unique ecosystem that prairie dogs create and maintain. As a "keystone species," prairie dogs have unique, transformative effects on the grassland ecosystem 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 even cattle, often prefer to graze on prairie dog towns. Prairie dog burrows provide homes and shelter for numerous mammals, reptiles, amphibians, and invertebrates. Prairie dogs are also an important food source for a wide variety of species

including endangered black-footed ferrets, hawks, eagles, coyotes, foxes, and badgers (*see, for example,* Martínez-Estévez et al. 2013, Davidson et al. 2012, *and* Miller et al. 1994).

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 their range, resulted in 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 since the early 1900s due to widespread poisoning campaigns and sylvatic plague, a non-native disease lethal to prairie dogs (*Id.*). The species was added to the list of candidate species under the Endangered Species Act (ESA) in 2000, but was removed by the U.S. Fish and Wildlife Service (USFWS) in 2004. The species was re-petitioned for listing in 2007, but after an initial positive finding on the petition, the USFWS deemed the species "not warranted" for federal protection.

Gunnison's prairie dogs have declined by 98-99 percent across their historic range in New Mexico, Colorado, Arizona, and Utah; the occupied area declined from ~24,000,000 acres in 1916 to between 340,000 and 500,000 acres in 2008 (USFWS 2008). 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). 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 as it improperly divided the species into two populations, and required the USFWS to reevaluate the species' listing status. In 2013, after studies confirming the existence of two subspecies of Gunnison's prairie dog, the USFWS found both subspecies "not warranted" because of population surveys from the last 3-6 years and the ability to locally control plague outbreaks in highly managed situations (USFWS 2013a). Recent research suggests, however, that in addition to known dangers, drought is a serious threat to the "prairie" population (Davidson et al. 2014). Guardians is challenging the "not warranted" determination.

Mexican prairie dogs were listed as "endangered" in 1970. 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). An updated population count, using direct counts and compared with a distance sampling method, is underway but results are not yet available.

Utah prairie dogs declined from historical numbers of ~95,000[1] to a low of 3,300 individuals in the early 1970s (USFWS 2012). The Utah prairie dog was listed as "endangered" in 1973 and downlisted to "threatened" in 1984. Despite its federal status, the species still faces considerable threats including habitat loss, sylvatic plague, and livestock grazing.

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

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 (Center for Native Ecosystems et al. 2002). 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 the species' continued existence (USFWS 2010). A legal challenge to the negative finding is underway.

One important issue in prairie dog conservation is the lack of standardized population monitoring methods across states. In an effort to solve this problem, the Western Association of Fish and Wildlife Agencies (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 improve conservation planning. Several important action items are still in progress, and will hopefully be completed in 2014, including 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 (NAIP) (McDonald et al. 2011)).

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

1. **Prairie dog conservation, restoration, and management (Conserve):** The extent to which federal and 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, e.g.
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, 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. 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.

## 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 USFWS to list the black-tailed prairie dog under the Endangered Species Act. In 2000, the USFWS 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 (*see* Luce 2003). The Conservation Team remained intact even subsequent to USFWS' 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 (WAFWA 2006).

**WAFWA Grassland Initiative.** 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).

# The Report Card

| ENTITY | CONSERVE | HABITAT | SHOOTING | PLAGUE | POLICIES | POISON | MONITOR | 2013 | 2014 |
|---|---|---|---|---|---|---|---|---|---|
| FEDERAL GOVERNMENT AGENCIES | | | | | | | | | |
| BLM | B | C | F | C | C | C | C | D- | **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 | F | F | F | C | D | C | C | D+ | **D+** |
| WS | F | N/A | F | D | F | F | N/A | F | **F** |
| STATE GOVERNMENTS | | | | | | | | | |
| AZ | A | B | B | B | B | C | A | B | **B** |
| CO | A | D | B | A | B | D | C | C+ | **B-** |
| KS | F | F | F | D | F | F | B | D- | **D-** |
| MT | C | C | F | C | F | D | C | D | **D+** |
| NE | F | F | F | F | F | F | F | F | **F** |
| NM | D | F | F | 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 | D | F | F | C | D | F | D | F | **D-** |
| TX | C | C | F | F | C | F | B | D+ | **D+** |
| UT | C | C | C | C | D | D | B | C- | **C** |
| WY | C | D | F | D | D | F | D | D | **D** |

### Box 2. Sylvatic Plague Vaccine Progress Report

*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 1900s and has caused major problems for the small mammal community ever since. 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 was killing the fleas that host the plague bacterium. Dusting burrows with deltamethrin (Delta Dust), an insecticide, helps mitigate plague where it is applied locally. However, dusting is labor intensive, expensive, and difficult to sustain long-term. A promising new approach—an oral plague vaccine for prairie dogs—is currently undergoing field-testing, and may prove to be a prairie dog lifesaver.

A prairie dog eats a vaccine-laden bait. Photo: Toni Rocke.

The vaccine is delivered to prairie dogs in peanut-butter-flavored baits, and proved effective in laboratory tests. Field trials began in 2013: researchers set out vaccine and placebo baits at 29 paired sites in 7 states (Colorado, Wyoming, Montana, South Dakota, Utah, Texas, and Arizona). They will repeat the trials over the next three years, monitoring the sites for plague and prairie dog survival. It is too early to tell, but if the vaccine is successful, it could mitigate one of the biggest threats to prairie dogs, safeguarding this keystone species of the grassland ecosystem.

## The Grades in Detail

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

The BLM manages vast expanses of public land across the West, including Gunnison's, Utah, and white-tailed prairie dog habitat. BLM also manages a small portion of black-tailed prairie dog range. 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.

*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, with a goal of 1,000 acres of black-tailed prairie dogs on BLM land (*see* "Arizona"). Efforts have focused on mesquite clearing, including

removal of downed mesquite to improve prairie dog habitat and restore grasslands, primarily in the 700-acre Cieneguita area.

*Colorado.* The BLM has provided support to several prairie dog conservation projects lead by Colorado Parks and Wildlife. BLM participated in the sylvatic plague vaccine trials, providing a control area in the Gunnison basin. BLM is also doing follow-up monitoring of the black-footed ferret release site on the Walker Ranch. All three species of prairie dog in Colorado are managed as "sensitive" species by BLM. 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*. BLM management of prairie dogs in Montana and the Dakotas is determined by applicable Resource Management Plans (RMP). Several field offices have issued draft Resource Management Plans: the Miles City field office, South Dakota field office, and Billings field office. A draft RMP is also out for the HiLine (managed by three BLM field offices in Havre, Malta and Glasgow). BLM is currently addressing public comments and formulating proposed alternatives for each plan.[2]

*Nebraska*. 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.* In New Mexico, the Rio Puerco Field Office is reintroducing and monitoring Gunnison's prairie dogs on a site in the El Malpais National Conservation Area. A black-tailed prairie dog colony in the Roswell Field Office area serves 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, BLM monitors the prairie dog towns on Otero Mesa, but did not do so in 2013. Casual observation suggests that numbers are down, likely due to a drought that recently ended. The draft Tri-County RMP was released in summer 2013. The RMP will replace the White Sands RMP for Sierra and Otero Counties and revise the Mimbres RMP for Doña Ana County. It 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. BLM intends to release a supplemental draft of the Tri-County plan including decisions on fluid minerals (oil and gas) and "Lands with Wilderness Characteristics."

*Kansas and Oklahoma.* 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 application process, BLM requests that the operator move the pad, access road, or pipeline when it will be traversing a prairie dog town. To date, no projects are near prairie dog towns.

[2] For individual resource management plans, see www.blm.gov/mt/st/en.html.
[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.

*Texas.* The Amarillo Field Office in Texas unfortunately had to abandon plans to reintroduce prairie dogs to the Cross Bar Ranch in 2012 after discovering the soil profiles were unsuitable. The Cross Bar is the only BLM-managed surface public land in Texas, and encompasses approximately 12,000 acres.

*Utah.* The BLM in Utah has worked cooperatively with other agencies on habitat restoration for the Utah prairie dog. The last project took place in Fall 2011. Utah prairie dogs were translocated to BLM sites in the West Desert and Awapa Recovery Units (*see* "Utah"). BLM completed NEPA documents for a programmatic preventative plague-dusting project on BLM lands across Utah prairie dog range, and awarded contracts to dust some sites in 2014. Cedar City and Richfield Office BLM lands are taking part in the sylvatic plague vaccine trials. BLM 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 - June 15), approximately 47,500 acres in northeastern Utah is closed to shooting year-round within the black-footed ferret reintroduction area, 90 percent of which is on BLM lands. The Cedar City Field Office is working on a revised Resource Management Plan and anticipates releasing the Draft RMP and EIS for public review in July 2014. Cedar City and Richfield Office BLM lands are taking part in the sylvatic plague vaccine trials.

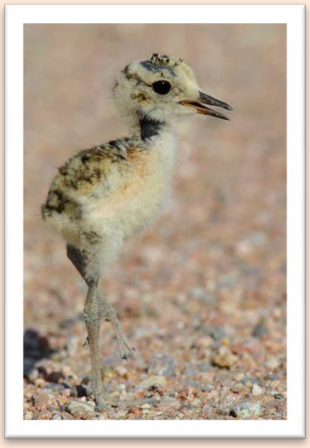
Utah BLM manages Gunnison's and white-tailed prairie dogs as "sensitive" species: for any proposed action on BLM land, potential impacts to sensitive species are considered during the planning phase. Protective and proactive measures to enhance prairie dog conservation are included in several Resource Management Plans 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. 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 but does not have the authority to prohibit it. Most management is through the Utah Division of Wildlife Resources.

*Wyoming.* Wyoming BLM designates prairie dogs a "sensitive" species, and all resource management plans in the state include prairie dog conservation guidelines. The Wyoming BLM 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 but does not have the authority to prohibit it. Most prairie dog management is through the Wyoming Game and Fish Department. The Wyoming Game and Fish Department is conducting sylvatic plague vaccine trials on BLM and private lands in the Meeteetse, Wyoming, area in the same white-tailed prairie dog towns that were the source of last known wild black-footed ferrets—the progenitors of all ferrets in the captive breeding program (*see* Box 4).

## Box 3. Mountain Plover (*Charadrius montanus*)

Adult mountain plover.
Photo: Oklahoma State Universitv

Mountain plovers are one of many species in the west that depend on prairie dogs for survival. These small birds prefer to breed, feed, and nest in prairie dog towns. The short vegetation helps them avoid predators and catch insect prey. Their nests are shallow depressions in the ground, and though their dark olive and black eggs are well-camouflaged, they are vulnerable to predators such as coyotes, swift foxes, and ground squirrels. Mountain plover chicks face a difficult road to adulthood: more than half of the egg clutches are lost to predation. Once the chicks hatch, they can almost immediately run and feed themselves. During their first few weeks of life, they are most concerned with avoiding predators such as prairie falcons, ferruginous hawks, golden eagles, and loggerhead shrikes, and staying out of the hot prairie sun by using the shade of tall grass, fence posts, telephone poles, or their parents. The importance of prairie dog complexes to mountain plovers cannot be understated. Plovers nesting in prairie dog colonies are three times as likely to fledge chicks as those nesting in agricultural fields. Researchers found plover densities ten times higher on prairie dog colonies than on uncolonized grassland. Following sylvatic plague-driven declines in prairie dogs, mountain plover nesting activity decreased rapidly (WildEarth Guardians 2010; *see also* Dinsmore and Smith 2010).



Mountain plover chick.
Photo: James Ownby

Most mountain plover nesting occurs in Colorado, Montana, and Wyoming. Breeding occurs to a lesser extent in Canada, Arizona, Kansas, Nebraska, New Mexico, Oklahoma, Texas, and Mexico, and the bird is now extinct in Utah, North Dakota, and South Dakota. Most of the global population winters in California. These wide-ranging birds are struggling with loss of their California wintering sites to vineyards, orchards, and urban development, and with the decline of their preferred nesting sites in prairie dog towns. As increasing human development overruns plover habitat and the prairie dogs who provide them their best nesting sites are persecuted, the difficulties the plover faces have taken their toll. Breeding Bird Surveys and Christmas Bird Counts reveal a population decline of around 3 percent per year between 1966-2007 (WildEarth Guardians 2010). Populations have declined by as much as 60 percent since 1966 (Knopf and Rupert 1996). As prairie dogs disappear, the plover population is dwindling. We need better protections for both species.

## 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 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 its range (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 and timing 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 recovery sites. Impacts to unlisted species such as raptors and migratory birds are not addressed. It is unclear how effective enforcement of the label will be. In August 2013, EPA approved the anticoagulant Kaput-D (diphacinone), manufactured by Scimetrics, for black-tailed prairie dogs in the same 10 states where Rozol use is permitted. By continuing to approve dangerous, cruel poisons for use on prairie dogs, the EPA earns another DETENTION.

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

The USFWS administers the Endangered Species Act (ESA). 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 only 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). The USFWS found the Gunnison's prairie dog "not warranted" for listing in November 2013. WildEarth Guardians is bringing a legal challenge to the negative finding.

In 2013, the USFWS issued 88 4(d) control permits to 43 individuals resulting in the take[4] of 2,856 Utah prairie dogs from agricultural lands, and permanent habitat take totaling 12.5 acres. The USFWS and The Nature Conservancy (TNC) have acquired 800 acres of habitat in Garfield County for the conservation of Utah prairie dogs. TNC will hold title and manage the property.

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. Habitat Conservation Plans are

[4] "Take" is defined under the Endangered Species Act as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect any threatened or endangered species."

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 is being developed for Garfield County near Panguitch. The USFWS accepted public comment on the proposed HCP through November 21, 2013.

Under the USFWS/U.S. Geological Survey Science Support Program, the agencies received approximately $232,000 for fiscal years 2013-2015 to support field trials of the sylvatic plague vaccine for Utah prairie dogs. The Charles M. Russell National Wildlife Refuge, administered by USFWS, is participating in sylvatic plague vaccine field trials on black-tailed prairie dog habitat.

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

All four U.S. prairie dog species reside on USFS units in the West. The USFS allows oil and gas drilling within prairie dog habitat. The agency also generally defers to state regulations on prairie dog shooting, although some exceptions exist. USFS 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 adjacent to private lands. The agency conducts regular population surveys.

*Rocky Mountain Region*. Shooting is prohibited in designated black-footed ferret recovery areas in the Conata Basin in Buffalo Gap National Grassland in South Dakota[5] and Thunder Basin National Grassland in Wyoming. 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 System lands to assure their conservation.

On the Wall Ranger District of Buffalo Gap National Grassland (containing Conata Basin), active prairie dog colony acres were reduced from 35,350 acres in 2007 to 10,041 acres in 2013 (72 percent) with an estimated 1,000 acres lost in 2013. The mean burrow density per colony also decreased, from 51.5 burrows/acre in 2012 to 42.1 burrows/acre in 2013. The primary reason for the reduction is a sylvatic plague outbreak in May 2008 that impacted the entire District. In 2013, some colonies in the Conata Basin became smaller and more fragmented. Plague is the most likely culprit. The USFS hired a private contractor to dust 545,320 burrows in 13,626 acres of prairie dog habitat on the Wall Ranger District and Buffalo Gap National Grassland in 2013 (Griebel 2014a and b).

[5] 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).

Four prairie dog colonies outside the black-footed ferret management area in the Wall Ranger District, totaling 197 acres, are part of the field trials for the sylvatic plague vaccine, and will be closed to shooting throughout the trial period. In 2013, the Forest Service poisoned a total of 215 acres adjacent to private land on the Wall Ranger District with rodenticide.

## Box 4. Black-footed Ferret (*Mustela nigripes*)

Black-footed ferrets are fierce little predators who can take down prey animals their own size or sometimes larger. They specialize in hunting prairie dogs, their primary food source. They used to range throughout the Great Plains, mountain basins, and semi-arid grasslands of North America, and were found wherever prairie dogs made their colonies. Then prairie dogs started to disappear, poisoned and shot as part of federal extermination campaigns. The grassland habitat of both species shrank, fragmented by conversion to cropland and human development. Plague swept through prairie dog colonies, and any ferret unlucky enough to eat an infected prairie dog or be bitten by a plague-infected flea would be infected in turn. It takes at least 80 acres of black-tailed prairie dog colonies or 200 acres of white-tailed prairie dog colonies to support one ferret (USFWS undated). As prairie dog populations shrank, the black-footed ferret population dwindled precipitously. The last known wild population persisted in the vicinity of Meeteetse, Wyoming, until early 1987, when a captive breeding program was deemed the only way to save the species. The Meeteetse ferrets were captured and used to start the breeding program that is the source of all ferrets in the wild today (USFWS 2013b). Captive-born ferrets were reintroduced to Shirley Basin, Wyoming, in 1991. Since then ferrets were reintroduced to 20 more sites in South Dakota, Montana, Arizona, Utah, Kansas, Colorado, New Mexico, Saskatchewan, Canada, and Chihuahua, Mexico (USFWS 2013b; *see* Colorado).

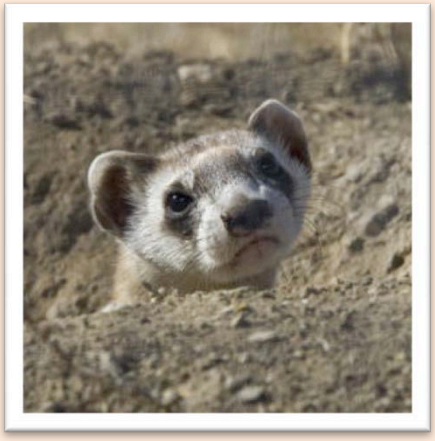


Photo: Ryan Hagerty, U.S. Fish and Wildlife Service

Though the black-footed ferret was pulled back from the brink of extinction just in time, it does not have an easy road to recovery ahead. The captive founding population was miniscule (genetically, the equivalent of seven individuals), making them one of the most genetically uniform carnivore species in the world (USFWS 2013b). And though the ferrets are protected under the Endangered Species Act, the same cannot be said of their main food source and the architect of the dens they use for shelter and birthing their kits: prairie dogs. Poisoning and shooting of prairie dogs continues right up to—and sometimes past—the borders of ferret reintroduction sites. Few remaining prairie dog complexes are large enough to support a self-sustaining population of black-footed ferrets (Luce 2006). In order to save this rare mammal, we need to safeguard the species they depend on and the ecosystem of which they are a part.

Thunder Basin National Grassland currently has 23,700 acres of black-tailed prairie dogs. In 2013, USFS was unable to use controlled burns to encourage prairie dog expansion or relocate prairie dogs, as their relocation permit was denied by the state of Wyoming in 2012. USFS dusted 3,000 acres of colonies to prevent plague within the designated black-footed ferret recovery area. The USFS controls prairie dogs in 1-mile buffers around residences with rodenticide, and poisoned 2,000 acres in 2013. The agency also installed vegetative barriers to prevent prairie dogs from entering private property. Thunder Basin National Grassland is working on vegetation monitoring in order to research the question of competition between cattle and prairie dogs for forage. The study is ongoing. Thunder Basin surveys for some prairie dog-associated species—swift fox, burrowing owl, and mountain plover—every year. Thunder Basin 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 ¼ 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 would also open the door for the use of anti-coagulants such as Rozol. The USFS is currently evaluating comments received during the public comment period on the proposed amendment.

The latest mapping on the Comanche National Grassland was in 2011 and indicated 7,721 acres of prairie dogs (USFS 2012). This represents a significant decline—by nearly half—from the 2005 count of 14,893 acres of prairie dogs. A plague epizootic in 2005-2007 in southeastern Colorado is largely responsible for the drastic prairie dog decline on the Comanche (USFS 2012). USFS is in the process of updating its prairie dog survey on the Comanche National Grassland. The Grassland office at the Cimarron National Grassland distributes maps for prairie dog shooters.[6]

*Northern Region*. The Northern Region lists black-tailed and white-tailed prairie dogs as sensitive species.

*Southwestern, Southern, and Intermountain regions*. In the Southwestern Region both the prairie and montane populations of Gunnison's prairie dog are listed as sensitive species, as is the black-tailed prairie dog. The Intermountain Region and the Southern Region do not list any prairie dog species as sensitive.

Colonies of black-tailed prairie dogs in the Kiowa and Rita Blanca national grasslands were mapped in 2012, revealing a total of 5,175 acres, 932 of those in Oklahoma. These colonies suffered from plague in the past, but no new outbreaks have been detected in the last four years. In the area of the Rita Blanca in Texas that the Forest Service is considering as a potential black-footed ferret reintroduction site, USDA Texas Wildlife Services dusted 653 acres of colonies for plague in 2013.

Prairie dog hunting is allowed on the Kiowa National Grassland in New Mexico under New

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

Mexico Department of Game and Fish regulations and on the Rita Blanca National Grassland in Texas under Texas Parks and Wildlife Department regulations. Two colonies on the Rita Blanca in Texas, 515 acres altogether, are test sites for sylvatic plague vaccine trials, and therefore closed to shooting. The Oklahoma Department of Wildlife Conservation does not allow prairie dog hunting on the Rita Blanca grassland in Oklahoma. Excluding these shooting closures and Forest Service lands that do not have public access, an estimated 3,300 acres are currently available for recreational shooting. There is no oil and gas exploration, ORV use in areas with prairie dog colonies, or poisoning allowed on the Kiowa and Rita Blanca grasslands.

## Box 5. Ferruginous Hawk (*Buteo regalis*)

Ferruginous hawk chicks on a nest.
Photo: Larry Ridenhour, BLM

The ferruginous hawk is one of the largest hawks in North America, capable of picking up a full-grown prairie dog. They are named for their rusty-red (ferrous) legs. The ferruginous hawk breeds in arid and open landscapes from Saskatchewan south to New Mexico and Arizona, west to Alberta, Oregon, and eastern California, and east into Manitoba, the Dakotas, Nebraska, and Kansas (Travsky and Beauvais 2005), though their breeding population in Canada, North Dakota, and the southwestern U.S. has declined (Colorado Division of Wildlife 2003). These hawks are very sensitive to human disturbance during nesting, and avoid areas with human activity (*Id.*). Threats include habitat loss, agriculture, energy development, and the continuing decline of prairie dogs, one of their most important prey species.

Ground squirrels and prairie dogs are the top food sources for ferruginous hawks east of the Continental Divide, and they are more abundant in areas where prairie dogs are present (*Id.*). Ferruginous hawk nests are more successful closer to prairie dog colonies that provide them with food (Cook et al. 2003). Persecution of prairie dogs is both a direct and indirect threat to the hawks. They may suffer directly from eating poisoned animals, or indirectly as their prey base dwindles due to shooting, poisoning, and plague. Protecting prairie dogs also safeguards a secure future for these regal raptors.

## B U.S. National Park Service (NPS)

The NPS manages mostly small prairie dog colonies at 21 national parks, monuments, and other NPS lands in the Midwest and Intermountain Regions. 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. Across the 21 NPS units, prairie dog management straddles the line between the NPS' policy of conserving native wildlife and the need to appear as "good neighbors" and protect other park resources (e.g., cultural resources). When a conflict does occur, park officials are authorized to use lethal control (e.g., zinc phosphide poison, shooting) if the park has an approved prairie dog management plan. 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.

Three NPS units have completed management plans (Badlands National Park, Bent's Old Fort National Historic Site, and Wind Cave National Park) and five units have plans in some stage of preparation (Theodore Roosevelt National Park, Bryce Canyon National Park, Hubbell Trading Post National Historic Site, Dinosaur National Monument, and Devil's Tower National Monument). Bryce Canyon's Utah Prairie Dog Stewardship Plan is in progress and the Park held a "Preferred Alternative" workshop in November 2013. The preferred alternative for the Plan provides the most opportunities to conserve Utah prairie dogs and their habitat. The Environmental Assessment for the Plan should be available in early spring 2014.

Devil's Tower National Monument has a 44-acre colony of black-tailed prairie dogs, which is so far plague-free. The Monument hopes to use passive relocation and barriers to mitigate conflicts in camping and picnic areas upon approval of its management plan, which is currently being finalized. Devil's Tower posted interpretive signs near the colony and also gives guided talks about prairie dogs. Theodore Roosevelt had approximately 1,310 acres of prairie dog colonies in 2013, an 8.2 percent decrease from 2012. A researcher detected evidence of plague in one prairie dog town, but the Park has not dusted for plague. Badlands recorded approximately 2,140 acres of black-tailed prairie dog colonies. Mapping of Wind Cave's occupied acreage was completed in 2013, and the Park has 1,500 acres of prairie dogs. Scott's Bluff National Monument monitors acreage, which appears stable at around 78 acres.

Plague has been detected at Badlands, Curecanti National Recreation Area , Wind Cave, Scott's Bluff, Theodore Roosevelt, and other units. Sand Creek Massacre National Historic Site (NHS) had 100 acres of black-tailed prairie dog colonies, but 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 relocate into the NHS. The black-tailed prairie dogs in Bent's Old Fort National Historic Site also succumbed to plague in 2012, along with larger colonies outside the NHS to the east and west. Curecanti National Recreation Area (NRA) 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 have reduced that number to three colonies. The NRA dusts their remaining colonies to protect them from plague, and hopes to include use of the oral plague vaccine in their future management plan. Badlands and Wind Cave national parks, which suffer from plague, are also the 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 dusted 377 acres of prairie dogs from Oct. 1, 2012, through Sept. 30, 2013, and conducted ferret surveys. Wind Cave also hosted plague vaccine trials in 2013, which will continue for two more years. Badlands lost approximately 450 acres of prairie dogs to plague in 2013, totaling a loss of ~5,000 acres since 2008. Badlands dusted roughly 1,800 acres.

Bryce Canyon National Park continues its annual celebration of Utah Prairie Dog Day and conducts educational programs in schools in Garfield County. To protect its Utah prairie dogs from plague, Bryce Canyon performs annual dusting of burrows. The Park estimates it has 600 acres of occupied or suitable/potential Utah prairie dog habitat within its borders, inhabited by approximately 120 Utah prairie dogs in 7 colonies.

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

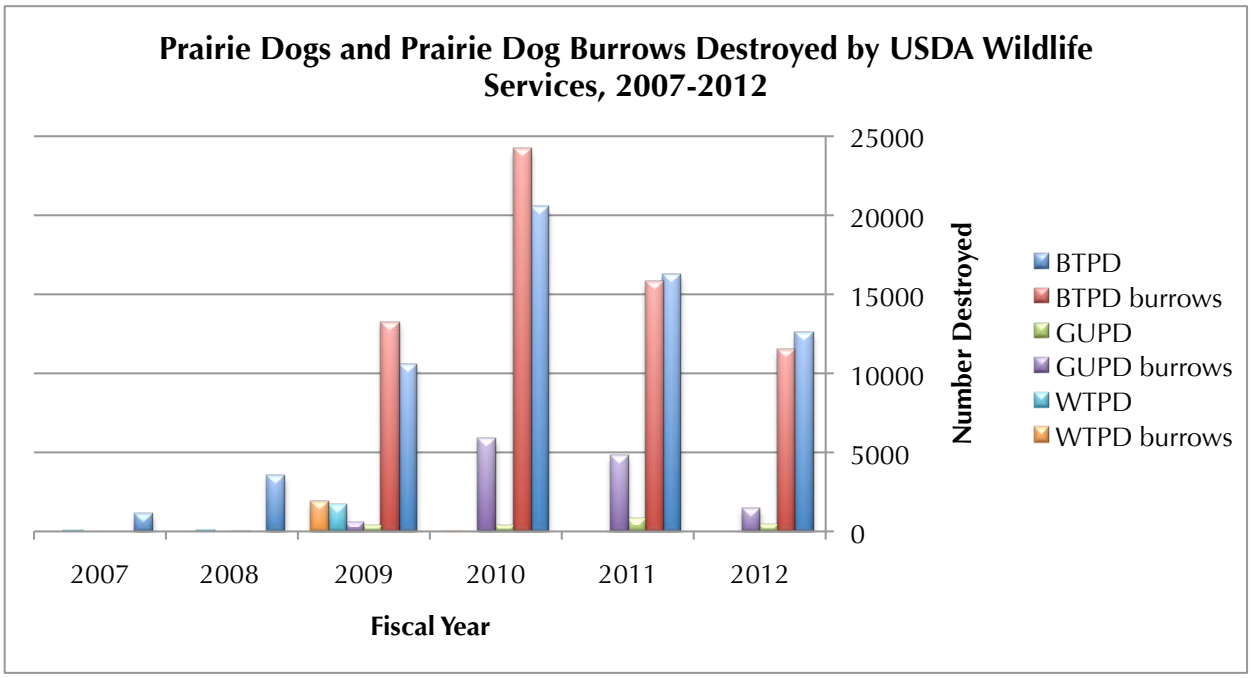



**Figure 1.** Poisoning records from Wildlife Services are available on the agency's website going back to 1996. The agency began recording number of burrows poisoned or fumigated in 2007 (BTPD: black-tailed prairie dogs; GUPD: Gunnison's prairie dogs; WTPD: white-tailed prairie dogs).

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 3,352,000 animals, including prairie dogs, in 2012.[7] WS shot 21 white-tailed prairie dogs; shot 457 Gunnison's prairie dogs, and fumigated 1,501 Gunnison's prairie dog burrows with Fumitoxin tablets (an aluminum phosphide fumigant) or gas cartridges; shot 12,538 black-tailed prairie dogs and killed 23 with pneumatics; poisoned 8,600 black-tailed prairie dog burrows with zinc phospide; poisoned 1,200 black-tailed prairie dog burrows with Rozol, an anticoagulant poison; and fumigated 1,704 black-tailed prairie dog burrows with aluminum phosphide fumigants or gas cartridges (WS 2013). USDA Texas Wildlife Services dusted 653 acres of colonies for plague in the Rita Blanca National Grassland in 2013.

## 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 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 worked to reintroduce black-tailed prairie dogs on BLM and state trust lands within the Las Cienegas National Conservation Area. 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 (1,000 of those acres on BLM land). 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 count, in September 2013, yielded approximately 125 individuals in three colonies on 32 acres of occupied habitat. All of those acres were dusted for plague in 2013. A fourth colony, established in 2012, was not successful.

No further reintroductions are currently planned due to limited source populations. AZGFD is initiating research to determine genetic relatedness of black-tailed prairie dogs within and outside the southwest. If relatedness is high enough, more populations outside the southwest may become available as source populations for translocation. If the research supports restricting translocations to the southwest, then planned grassland restoration efforts will help the Arizona colonies grow to be source populations in the future. All three Arizona colonies are restricted in size by invasive mesquite. In November 2012, AZGFD secured a grant of $400,000 from the National Fish and Wildlife Foundation. The majority of the funds will be used to restore nearly 700 acres of grassland surrounding these colonies over the next three years in partnership with the Bureau of Land Management. Remaining resources will be focused on survivorship research and management activities. Two private and one County landowner have expressed interest in black-tailed prairie dog reintroduction, but reintroductions will not be possible until a source population is available. In the interim, AZGFD will begin holding public forums expressing their intent to restore black-tailed prairie dogs to those properties.

[7] 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.

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. 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). The state resurveyed Gunnison's prairie dog colonies in 2011 and mapped 109,402 occupied acres. The next statewide survey is planned for summer 2014. The two black-footed ferret release sites in the state are monitored annually. In 2013, acreage in both ferret release sites increased: Aubrey Valley has a minimum of 54,195 occupied acres and the Espee Ranch has 13,336 occupied acres. AZGFD monitors both prairie dog species for plague and dusts for plague at the Espee Ranch black-footed ferret reintroduction site. The Espee Ranch site was part of the 2013 plague vaccine field trials: the vaccine was tested at a pair of 50 acres sites on the Ranch. AZGFD dusted 192 acres of Gunnison's prairie dogs, mostly within the White Mountains Grasslands Wildlife Area, a site with a previous plague outbreak. AZGFD is attempting to restore this colony by controlling plague.

Shooting Gunnison's prairie dogs in Arizona 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. However the state does not participate in poisoning and prohibits the use of Rozol. One landowner in Arizona is pursuing a Safe Harbor Agreement for black-footed ferret reintroduction. If successful, 19,537 additional acres will be managed for Gunnison's prairie dogs. The Department participated in a relocation effort, led by Habitat Harmony, of 70 Gunnison's prairie dogs from an urban development in Flagstaff to an abandoned rural colony.

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

Colorado's three prairie dog species 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 as "destructive rodent pests." Colorado Parks and Wildlife (CPW) does not have the regulatory authority to govern poisoning of prairie dogs.

Colorado once had between 3,000,000 and 7,000,000 acres of black-tailed prairie dogs (USFWS 2000). 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. This may represent a 29 percent increase from 2002 (Odell et al. 2008). However, ground surveys conducted during the same year on two national grasslands indicate that aerial surveys overestimated occupied area by 58 and 94 percent, respectively, because of difficulty distinguishing between active and inactive colonies (Sidle et al. 2012). The next survey is planned for 2014 pending 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*. CPW is not currently dusting black-tailed prairie dogs for plague other than 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. In collaboration with University of Colorado at Boulder, CPW has determined that there is strong support for two subspecies of Gunnison's prairie dog: *Cynomys gunnisoni gunnisoni* and *C. g. zuniensis*, corresponding roughly to the "montane" and "prairie" populations, respectively (USFWS 2013a). CPW continues to proactively manage plague on Gunnison's prairie dog colonies. In 2013, CPW dusted over 1,300 acres in South Park, Gunnison, San Luis Valley, and southeast potions of the Gunnison's prairie dog range.

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 draft analysis for the 2011 data suggest stability except in the northwestern portion of the state, where the population appears to have decreased due to plague (Seglund 2012). The next survey is planned for 2017.

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 high-priority suitable, formerly occupied habitat. The State 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; e.g. plague, population monitoring, population reestablishment, poisoning, urban development, and associated species. CPW conducts prairie dog education programs based on local needs.

In 2013, CPW conducted 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. Trials will continue into 2014 and 2015 at minimum.

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 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, legislative approval was required for the reintroduction of black-footed ferrets. With the passage of SB13-169, private landowners no longer require legislative approval to reintroduce ferrets as long as they are enrolled in a Safe Harbor Agreement and have an Enhancement-of-Survival permit under the Endangered Species Act. As a result, last year 30 black-footed ferrets were released onto the Walker Ranch, west of Pueblo, CO.

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

Kansas historically had 2,000,000 to 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 will be conducted upon finalization of a common methodology pending 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*. 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 "nongame wildlife" species and has produced a prairie dog conservation plan. KDWPT'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, however no federal programs have been developed and the goal has not been changed or revised (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. Logan County, Kansas, tried to use this statute to force the extermination of prairie dogs on the Haverfield/Barnhardt/Blank Complex, a ranch property where landowners are working with Audubon of Kansas to conserve the largest complex of black-tailed prairie dogs in the state and reintroduce black-footed ferrets; however the county's suit was dismissed. 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. Plague was present in southwestern Kansas in the past. KDWPT does not take actions to prevent or mitigate disease outbreaks.

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

Montana once had 1,471,000 to 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. 2013). 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 National Agriculture Imagery Program mapping efforts. During May and June of 2012, Montana Fish, Wildlife, and Parks (MFWP) mapped 175 colonies within these complexes, covering 7,329 acres. Results are complex-specific and permission for ground-truthing was denied in many areas. However the results are useful in guiding ongoing discussions about where to focus conservation efforts and potential black-footed ferret relocation sites. Though MFWP does not specifically monitor plague, the ground-truthing efforts revealed active and recently active plague throughout the state. MFWP did not dust for plague, but will potentially in 2014 in collaboration with Wildlife Services, depending on funding. In 2013, over 1,100 acres of black-tailed prairie dog colonies were dusted to protect them from plague by World Wildlife Fund, Defenders of

Wildlife, and Fort Belknap Fish and Game Department on lands not managed by MFWP, including private and tribal lands.

Montana is at the northern edge of white-tailed prairie dog distribution. Past estimates of occupied white-tailed prairie dog habitat in Montana ranged from 118 acres (Knowles 2004) to 366 acres (Atkinson and Atkinson 2005). White-tailed prairie dog colonies in Montana are not mapped annually and the current acreage is uncertain, though a small population persists in Carbon County.

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 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). Shooting is prohibited, however, within some national

## Box 7. Swift Fox (*Vulpes velox*)

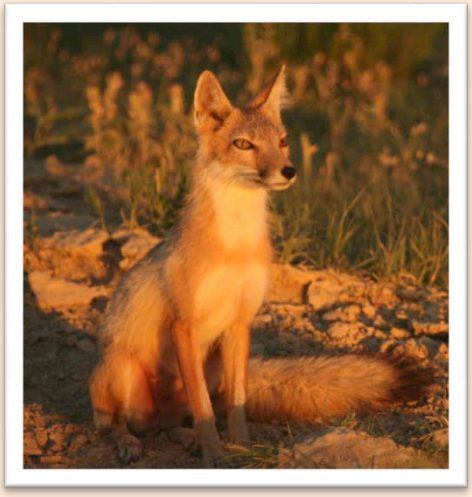


Photo: Rich Reading

These beautiful little foxes are well named: they can reach speeds of up to 30 miles per hour. They feed on small mammals, invertebrates, grasses and berries in the open prairies and arid plains they call home.

Conversion of prairie habitat to agricultural areas and intensive poisoning campaigns aimed at wolves took a heavy toll on the swift fox population. Swift foxes have disappeared from about 60 percent of their former range, which covered the central plains of North America, from southern Alberta and Saskatchewan south to northern Texas (Sovada et. al 2009). They were extirpated in Canada, but reintroduction efforts in Canada, Montana, and South Dakota will hopefully result in a viable wild population in the northern portion of their range (*Id.*). In other parts of their range they are not so protected: they can be legally shot or trapped in Montana, Colorado, New Mexico, Kansas, and Texas (Stukel 2011). Swift foxes are also threatened by competition with coyotes and red fox (*Id.*).

As a den-dependent species, swift foxes are very at home in prairie dog colonies, they enlarge prairie dog burrows for their own dens, and prairie dogs are an important prey source (Stephens and Anderson 2005). The short grass cover provided by prairie dogs increases visibility, helping them avoid predation from their rivals, coyotes (Sasmal et. al 2011). Without prairie dogs, it will be much harder for swift foxes to make their homes on the range.

wildlife refuges under USFWS management (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. If the area to be treated exceeds 80 acres in size, the Montana Department of Agriculture recommends consultation with U.S. Fish and Wildlife Service (Montana Department of Agriculture 2006).

The MFWP is supporting the sylvatic plague vaccine trials on the Charles M. National Wildlife Refuge (managed by the USFWS) for the next two years. MFWP is exploring the use of incentive programs for landowners to maintain prairie dog habitat with the Black-Footed Ferret Recovery Implementation Team Executive Committee, and is working with U.S. Fish and Wildlife Service and Natural Resources Conservation Service to design a "demo" project—which could potentially include a black-footed ferret release in the future—and enroll a landowner.

## 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 Black-Tailed Prairie Dog Management Act (LB473), passed in March 2012, gives counties the power and the duty to control prairie dogs on private or (non-federal) public land. The Act gives counties the power to notify landowners that a colony is not being sufficiently managed, and could require landowners to take action to remove prairie dogs, effectively handing over control of prairie dogs on private land to the counties. In addition, state and local agencies are included in the definition of "landowner," so a county could require Nebraska Game and Parks to poison prairie dogs on parks or wildlife management areas, or could bill them for the cost. Sheridan County has organized a "prairie dog board" to regulate prairie dog encroachment under the bill, but so far has not taken any action. State Senator Ernie Chambers submitted a measure (LB673) in January 2014 that would repeal the Black-Tailed Prairie Dog Management Act. After some negotiations, Nebraska Game and Parks approved the reintroduction of black-tailed prairie dogs into the Hutton Niobrara Ranch Wildlife Sanctuary for outdoor educational purposes; 65 prairie dogs were released into a fenced area on the Sanctuary in 2012 (Audubon of Kansas 2012).

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

Historically, black-tailed prairie dogs occupied more than 6,640,000 acres 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 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).

The next occupancy survey for Gunnison's prairie dogs is planned for 2015. No surveys of black-tailed prairie dogs will be scheduled until a standardized methodology is finalized by the multi-state Prairie Dog Conservation Team. The methodology will likely be a version of the approach recommended in *Recommended Methods for Range-wide Monitoring of Prairie Dogs in the United States* (McDonald et al. 2011).

New Mexico Department of Game and Fish (NMDGF) does not regulate use of rodenticides. Rozol is now legal for use on black-tailed prairie dogs in eastern counties of New Mexico. The city of Clovis used the anticoagulant poison in March 2013 on prairie dogs in Ned Houk Memorial Park. The City shortly thereafter passed an ordinance amending the definition of "public nuisance" to include prairie dogs, requiring their control on private lands. Chaves and Curry counties passed ordinances declaring prairie dogs "dangerous and/or nuisance animals" and prohibiting relocation into the counties. A gun shop in Las Lunas hosted a killing contest targeting prairie dogs. Participants reportedly killed around 1,500 prairie dogs (Associated Press 2013). Because of irresponsible local ordinances and continued failure to outlaw killing contests, New Mexico gets a DETENTION.

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 participated in a 2012 report on the status of range-wide populations using occupancy modeling. 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. Shooting is banned on state trust lands but is otherwise unrestricted. 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 no specific incentive programs for prairie dog conservation exist. The Santa Fe field office of the Natural Resources Conservation Service currently has one Environmental Quality Incentives Program application in which the landowner is working with WildEarth Guardians and Great Plains Restoration Council to create desirable habitat conditions for relocation of prairie dogs in the Galisteo Basin. The Restoration Not Incarceration program of the Great Plains Restoration Council is reintroducing Gunnison's prairie dogs to the Basin, which will likely become an important stronghold for the species. One of three planned prairie dog towns established in the Southern Crescent portion of the

Basin, and restoration and reintroduction work continues.[8]

Sevilleta National Wildlife Refuge is reintroducing and monitoring prairie dogs on three sites of about 40 acres each, and NMDGF funded a recently completed activity study of Gunnison's prairie dogs on the Refuge. The BLM is reintroducing and monitoring Gunnison's prairie dogs on a site in the El Malpais National Conservation Area. NMDGF has also directed funding to a research project on Gunnison's prairie dogs in the Valles Caldera National Preserve. The agency is planning to fund work to update GIS-based webmaps of Gunnison's and black-tailed prairie dog distribution in New Mexico and eventually make generalized distribution webmaps available to the public.

## 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. The North Dakota Game and Fish Department (NDGF) is in the process of surveying black-tailed prairie dog range throughout the state, and results are expected June 2013. 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 numbers needed to sustain prairie dog-dependent species (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.[9]

## 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. Occupied acreage has contracted due to plague outbreaks in the panhandle, followed by ongoing drought that has slowed recovery. Oklahoma is surveying prairie dog range using statewide aerial photos and ground-truthing is still underway. 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 "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. Poisoning in the state is

[8] For more information, visit the Great Plains Restoration Council website at gprc.org.
[9] See gf.nd.gov/hunting

relatively rare and usually occurs when colonies shift into agricultural areas due to the drought. Landowners with 10 or more occupied acres could enroll in a Landowner Incentive Program (LIP) and receive an annual incentive payment. Unfortunately, funding for the program will expire at the end of September 2014. Funding from other grants that last until 2017 may be used to extend the LIP program particularly for important colonies. 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.

## Box 8. Western Burrowing Owl (*Athene cunicularia hypugaea*)

Photo: Rich Reading

Burrowing owls are unusual: unlike other owls, they nest in underground burrows and are active during the day. Burrowing owls are known to take over the abandoned burrows of several prairie dog species, ground squirrels, woodchucks, marmots, skunks, foxes, and even armadillos and desert tortoises. Western burrowing owls range from Canada to Mexico and from the West Coast of the U.S. to the central plains. They depend on colonial burrowing rodents like prairie dogs: their nests are most often found in black-tailed prairie dog towns. Nesting is more successful when there are more active burrows around the nest site. The owls move their young to a new burrow at 10-14 days, presumably to avoid predation or nest parasites. Black-tailed prairie dog colonies are one of the only habitats with enough burrows to provide these "satellite" nests (Klute 2003). The owls also "eavesdrop" on the alarm calls of their prairie dog neighbors, using the colony's well-developed alert system to avoid predators such as coyotes, badgers, and red-tailed hawks (Bryan and Wunder 2014).

Though burrowing owls occupy the majority of their historical range and may be stable or increasing in some areas, their populations have shrunken and fragmented as both grasslands and prairie dogs decline. The owls are facing significant population declines in the northern, western, and eastern edges of their range (Klute 2003). The main cause is the loss of burrowing rodents whose burrows provide shelter and nest sites. The owls don't do as well in empty colonies, and without maintenance engineers like prairie dogs, burrow habitat in abandoned towns becomes unusable for the owls in 1-3 years. Prairie dog poisoning can also harm the owls directly. They may eat poisoned prey or bait, or be sealed inside burrows during fumigation. Protecting prairie dogs is a key component of protecting these fascinating grassland birds: burrowing owls need their favorite neighbors to survive and thrive.

## D- 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 Department of Game, Fish and Parks (SDGFP) estimated there were 630,849 colony acres in 2008. A new survey was recently completed and results are expected to be available in March 2014. 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 has been reported in any prairie dog colony east of the Rocky Mountains; 2) SDGFP has determined that the population of prairie dogs within the state, including tribal lands, exceeds the 145,000 acre level; 3) prairie dogs are colonizing on lands where the prairie dogs are unwanted by the owner of the impacted land; 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 adjoining lands from which the prairie dogs are encroaching, or filed a written complaint with the county weed and pest board. SDGFP poisoned 1,372 acres of black-tailed prairie dogs in 2013. Rozol is legal for use on black-tailed prairie dogs in South Dakota. SDGFP, however, does not use the anticoagulant poison.

Until 2011, 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 one of the 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 was canceled. If nontribal acreage falls below 160,000, an incentive program will be reinstated.

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 management area in Conata Basin, which is closed year round, and a few other areas on the Buffalo Gap National Grasslands). 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. The Forest Service hired a private contractor to dust 545,320 burrows in 13,626 acres of prairie dog habitat on the Wall Ranger District and Buffalo Gap National Grassland. Plague is spreading north, east, and west and was confirmed on the Fort Pierre National Grassland (Associated Press 2012). Four prairie dog colonies outside the black-footed ferret management area in the Wall Ranger District, totaling 197 acres, are part of the field trials for the sylvatic plague vaccine, and will be closed to shooting throughout the trial period. A number of research projects on prairie dogs and associated species are underway or have recently been completed, including an investigation of the role of small mammals in maintenance of plague in prairie dog colonies, studies of territoriality, resource

selection, and productivity of black-footed ferrets, and a study of burrowing owl distribution in western South Dakota.

**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. However, the data from these surveys has not been fully analyzed due to budget cuts. The Department hopes to complete the analysis and repeat surveys in 2014 or 2015 to obtain more precise trend information, but the future is uncertain.

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), which was not met. Most of the state is private land, making the goal more difficult to achieve. 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 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 agriculture department distributes poison to control prairie dogs, but requests made for the poison are decreasing. TPWD itself does not poison prairie dogs, and if appropriate may facilitate relocation. The state has formed a Texas Black-footed Ferret Working Group to assess the feasibility of reintroducing black-footed ferrets. No releases are scheduled, but a 2014 release may be possible. In the area of the Rita Blanca in Texas, which the Forest Service is considering as a potential black-footed ferret reintroduction site, USDA Texas Wildlife Services dusted 653 acres of colonies for plague in 2013. Two colonies on the Rita Blanca, 515 acres altogether, are test sites for sylvatic plague vaccine trials, and therefore closed to shooting.

As in Oklahoma, drought is ongoing in parts of the state. Texas Parks and Wildlife Department (TPWD) has some incentive and conservation programs that may benefit black-tailed prairie dogs, thought not directed at them specifically. These include the state's Candidate Conservation Agreement for the lesser prairie-chicken and their work with USFWS and other partners to draft a Safe Harbor Agreement for the black-footed ferret which would support reintroduction. TPWD established a new black-tailed prairie dog colony in Caprock Canyons State Park, which is expanding. The Native Prairies Association of Texas is reintroducing black-tailed prairie dogs to the Madden Prairie Preserve.

### Box 9. American Bison (*Bison bison*)

Photo: Sam Parks

Vast herds of bison were once the norm in North America. These magnificent herbivores were widespread from Alaska and western Canada across U.S. into northern Mexico, and would migrate *en masse* across the prairie in spring and fall. Due to mass slaughter during the 1800s, when bison were heavily hunted by European settlers for their hides, or simply for sport, a population of ~60 million was nearly wiped out by the late 1800s (Kiesow et al. 2011). The bison have never been the same. Though their numbers have recovered somewhat, there are only a few small, scattered wild populations remaining in U.S. and Canadian national parks. The majority of modern bison live in confined herds in parks and preserves (Lott 2002).

While bison are not strictly dependent on prairie dogs, or vice versa, the two species co-evolved and together shaped the ecology of grasslands until European settlement. Prairie dogs and bison have a mutually beneficial relationship: bison prefer the nutritious vegetation in prairie dog colonies, and prairie dogs appreciate the bison's help keeping the grass trimmed for visibility (Krueger 1986). A fully functioning prairie ecosystem needs vegetarians both large and small: bison and prairie dogs.

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

The Utah prairie dog is federally listed as a "threatened" species, giving 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. In 2013, the UDWR reported a spring count of 7,271 adult Utah prairie dogs during its annual trend count.[10] The UDWR relocated 1,224 Utah prairie dogs from Iron County: 477 were released in four locations in the Awapa Plateau Recovery Unit and 747 were released at four locations in Iron County. USFS translocated 352 Utah prairie dogs from Garfield County to the Paunsaugunt Recovery Unit. The Utah Prairie Dog Recovery

[10] 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.

Implementation Program (UPDRIP) reports installing 3 new translocation sites, consisting of 20-25 nest boxes.

In 2009, 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.

UDWR issued 88 4(d) control permits to 43 individuals resulting in the allowed take of up to 2,856 Utah prairie dogs from agricultural lands, and permanent habitat take totaled 12.5 acres. To offset this take, 800 acres were acquired and deed granted to The Nature Conservancy, and new acreage is being protected under the habitat credit exchange program (HCEP). The HCEP is a conservation banking mechanism that provides credits to offset impacts of private and federal development activities, and is designed to be self-sustaining through free market purchases and sales of credits. The program obtains perpetual conservation easements on private lands across the Utah prairie dog range. The program is administered by Panoramaland, Color Country Resource Conservation and Development Councils (RC&D) and other partners. During the program's first year in 2012, three participants enrolled properties into conservation easements, protecting 150-200 Utah prairie dogs on 200 acres. The program is currently enrolling a fourth participant, bringing acreage under easement up to 280. One of the sites under easement is participating in sylvatic plague vaccine field trials. UDWR is conducting plague vaccine trials on Utah prairie dog study sites in Iron County and the Paunsaugunt Plateau in Garfield County. The U. S. Geological Survey conducted plague vaccine field trials on Utah prairie dog colonies in Garfield, Paiute, and Wayne counties (primarily the Awapa Plateau). Other mitigation for plague included 4,000 acres of dusting for flea control on Paunsaugunt Recovery Unit and a contract issued for 243 acres of dusting in West Desert Recovery Unit. Bryce Canyon National Park continues to hold a yearly "Utah Prairie Dog Day" celebration and supports approximately 120 Utah prairie dogs in seven colonies (*see* National Park Service).

The Utah legislature passed a resolution in March expressing support for Utah prairie dog management in Iron County being turned over to the county for a five-year period.[11] The resolution asks for the Utah prairie dog to be delisted from "threatened" status if it meets county "recovery" goals on public land during that period. This resolution has no legal basis as a species cannot be delisted county-by-county under the Endangered Species Act. A new Incidental Take Permit (ITP) was issued by USFWS to Iron County based upon the recently completed Low-effect Habitat Conservation Plan (HCP) that will allow for increased incidental take over the next three years. This permit is intended to bridge the existing HCP and a revised long-term HCP, and would authorize the take of no more than 200 acres of occupied habitat per year over a maximum of three years following translocation or payment of a mitigation fee. A similar HCP is being developed for Garfield County near Panguitch. The HCP was available for public comment until November 21, 2013.

[11] For the bill text, see le.utah.gov/~2013/bills/sbillint/SCR003.htm

Gunnison's and white-tailed prairie dogs are identified as "species of concern" in the Utah Wildlife Action Plan. 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, 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, which is currently recovering from a sylvatic plague outbreak. Utah adopted a *Gunnison's Prairie Dog and White-tailed Prairie Dog Conservation Plan* in 2007, which will be in effect until 2017. 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. 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 reservation lands. The state estimated that in 2013, 16 percent of the area in a geographic model of habitat was occupied. The four states within the range of the Gunnison's prairie dog participated in a report on the status of range-wide populations using occupancy modeling in 2010; in Utah, occupancy showed little change between the 2010 and 2013 surveys. The next Gunnison's prairie dog survey is tentatively scheduled for 2016 in coordination with the other three states.

Utah surveyed for white-tailed prairie dogs in 2008 and resurveyed in 2011. 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. Since 2008, white-tailed prairie dog occupancy has increased. A white-tailed prairie dog occupancy survey is planned for spring/summer 2014. Plague vaccine is being tested on white-tailed prairie dogs on four 70-acre plots in the state. The state does not use or recommend relocation for white-tailed or Gunnison's prairie dogs because of disease concerns. The Utah Department of Transportation uses barriers to keep prairie dogs out of active construction zones or along road widening projects.

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

Wyoming once had approximately 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 2010 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 deteriorated 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. Wyoming is currently conducting plague vaccine trials on 160 acres.

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.

## Conclusion

Prairie dogs matter: they are important to the grassland ecosystem, to other species, and in their own right as intelligent, social animals. They deserve stronger protections from the myriad threats they face, and relief from human persecution. We need our state and federal agencies to promulgate, implement, and enforce more policies to safeguard prairie dogs, and prairie dogs equally need the help of individual citizens and communities. The prairie dogs, black-footed ferrets, mountain plovers, ferruginous hawks, and other residents of the prairie dog ecosystem depend on it.

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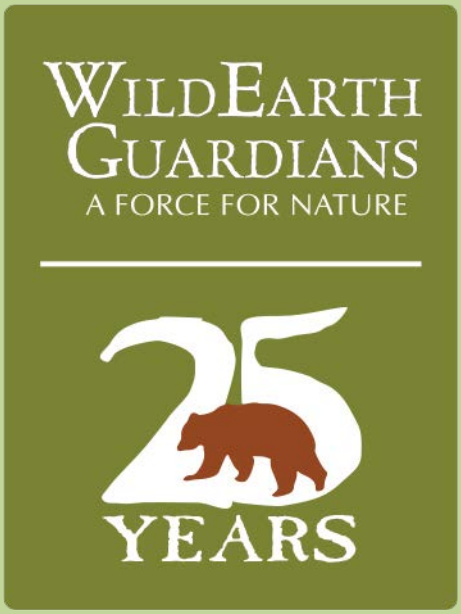
# Ranges of the Five Prairie Dog Species


WILDEARTH
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