

Report from the Burrow

Forecast of the Prairie Dog 2013

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A Report from



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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 2013

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

There are four species of prairie dog in the United States: the black-tailed, white-tailed, Gunnison’s, and Utah prairie dog. The fifth species, appropriately named the Mexican prairie dog, is found only in Mexico. Collectively, prairie dogs have lost between 93-99 percent of their historic range in the last 150 years, and with their loss we lose the unique biome that prairie dogs create and sustain. As a “keystone species,” prairie dogs have unique, significant effects on their ecosystem that are disproportionately large relative to their abundance. These energetic creatures fertilize and aerate the soil, reduce noxious weeds, and clip the top parts of forage, creating a shorter but more nutrient-rich blade of grass. Large herbivores including elk and bison often prefer to graze on prairie dog towns. Prairie dog burrows provide habitat for numerous reptiles, amphibians, and invertebrates. Prairie dogs are an important food source for a wide variety of species including hawks, eagles, coyotes, foxes, and badgers. Approximately 150 species benefit from prairie dogs and the habitat they create.

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

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. Some states such as Wyoming edged up their grades by participating in Phase II of the sylvatic plague vaccine trials (see Box 2). If it was possible to give Nebraska a lower grade, we would have, due to the passage of a bill that gives counties the power to poison prairie dogs on private lands. The Environmental Protection Agency would also be downgraded if possible, for reinstating the use of the dangerous poison Rozol across the majority of the black-tailed prairie dog’s range and approving the use of Kaput-D for the 2012-2013 use season. If this was a classroom, both of these agencies would get a detention.

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

- Granting prompt, range-wide protection of all unlisted species of prairie dogs – the

- black-tailed, white-tailed, and Gunnison's – under the Endangered Species Act;
- Banning poisoning and shooting of prairie dogs, especially on public lands;
- Immediately banning Rozol and Kaput-D prairie dog poisons;
- Supporting efforts to prevent and mitigate plague outbreaks;
- Prohibiting destruction of prairie dog habitat on public lands from oil and gas drilling, coal-mining, off-road vehicles, and other harmful land uses;
- Eliminating subsidies that contribute to habitat destruction and prairie dog killing;
- Preventing the loss of Mexican prairie dog habitat to farming; and
- Implementing other steps necessary to protect and recover prairie dog populations.

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

A feature of this year's *Report* is dispatches from tribal wildlife agencies. Tribes have a crucial role to play in prairie dog conservation, as large tracts of prairie dog habitat are located on tribal lands. We present here some of the management strategies, successes, and trials experienced by three wildlife agencies in the northern part of the black-tailed prairie dog's range (see Boxes 3, 4, and 5).

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 or state agencies are progressing toward final conservation plans and actively working to recover and protect prairie dogs.
- 2. Habitat conservation, restoration, and management (Habitat):** The degree to which states or federal agencies are working toward restoring prairie dog habitat or allowing habitat destruction – from oil and gas drilling and coal mining; livestock grazing that promotes weed incursion and woody shrub encroachment; or off-road vehicle use, for example.
- 3. Shooting regulations (Shooting):** Federal and state limits on prairie dog shooting for recreation and control.
- 4. Plague monitoring, mitigation, and prevention (Plague):** Agency commitments to plague monitoring and prevention.

5. **Prairie dog policies (Policies):** Policies (aside from conservation plans) that further prairie dog conservation or contribute to prairie dog decline.
6. **Poisoning (Poison):** The amount of lethal control through poisoning allowed, including subsidies or direct support for poisoning, mandatory poisoning policies, and poisoning restrictions.
7. **Monitoring of populations and threats (Monitor):** The frequency of population surveys, robustness of survey methods, records kept on management issues and threats to monitored populations, and public access to monitoring data.

Adding to the complexity of these evaluations, sometimes more than one agency within a state develops and implements prairie dog policies. For example, 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 even downright contradictory actions. In these cases the state's grade in *Report from the Burrow* reflects the effect of these policies as a whole, not just the actions of the state wildlife agency.

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

In 2004, the Western Association of Fish and Wildlife Agencies directed its Habitat and Nongame and Endangered Species Committees to adopt an ecosystem conservation approach and develop a comprehensive prairie conservation strategy for shrub and grassland species and habitats. This effort became known as the WAFWA Grassland Initiative (WGI), and it attempts, through a multi-state cooperative approach, to stabilize and expand grassland habitat and halt the decline of grassland species. In January 2011, WAFWA renewed the Grassland Initiative for another 5 years. In July 2011, WGI released their Western Grassland Initiative Strategic Plan, outlining their mission and strategies (WGI 2011).

One important issue in prairie dog conservation has been the lack of standardized monitoring methods across states. In an effort to solve this problem, WAFWA convened a panel of experts to review survey methods and make methodology recommendations for all four species found in the United States. The result, released in 2011 as *Recommended Methods for Range-wide Monitoring of Prairie Dogs in the United States*, will hopefully help standardize survey methods across states, prevent biased estimates, and inspire better conservation planning. Several

important action items are still in progress, 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, or NAIP) (McDonald et al. 2011).

Box 1. Federal and State Agency Commitments to Prairie Dog Conservation

Multi-State Conservation Plan for the Black-tailed Prairie Dog. In 1998, several conservation organizations petitioned the U.S. Fish and Wildlife Service to list the black-tailed prairie dog under the Endangered Species Act. In 2000, the Fish and Wildlife Service made the species a candidate for listing. In response, all 11 states within black-tailed prairie dog range formed the Interstate Black-tailed Prairie Dog Conservation Team to prevent federal listing. With the exception of Colorado and Nebraska, each state pledged to develop targets for prairie dog occupied habitat, support or contribute to the management of at least one prairie dog complex greater than 5,000 acres, and have prairie dogs distributed across 75 percent of the counties in their historic range, among other objectives. The Conservation Team remained intact even subsequent to Fish and Wildlife Service’s removal of the species from the candidate list in 2004.

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

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

Box 2. The Sylvatic Plague Vaccine: Progress Report



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

Yersinia pestis, the plague bacterium, is one of the most serious threats to prairie dogs. The disease is transmitted to mammalian hosts through the bites of infected fleas. It was inadvertently introduced to North America in the early 1900's, and has been causing major problems for the mammal community ever since. Prairie dogs have no natural immunity to plague, and an outbreak can rapidly cause 90 percent mortality or more in a colony. Currently, the only way to protect prairie dog colonies from plague is to dust burrows with deltamethrin (Delta Dust), an insecticide that kills the plague-carrying fleas and prevents plague's spread. Dusting is labor intensive, expensive, and difficult to sustain long-term. Scientists at the U.S. Geological Survey National Wildlife Health Center, in collaboration with colleagues at other federal agencies and the University of Wisconsin, have

been working to develop an alternative: a plague vaccine that can be delivered orally via a peanut-butter-flavored bait. The vaccine has proven effective in laboratory tests; consumption of even a single bait can protect a prairie dog from plague for up to 9 months (Rocke and Abbott 2012).

The Phase I field bio-safety trials in collaboration with Colorado Parks and Wildlife confirmed that prairie dogs take the bait readily in the wild and that the vaccine is safe for prairie dogs and non-target species. The Phase II field efficacy trials will begin in spring 2013. Trials on paired vaccine and placebo-treated sites will occur on test sites in Arizona, Texas, Wyoming, and Montana. If the vaccine is successful, it will mitigate one of the biggest threats to prairie dogs, safeguarding this keystone species of the grassland ecosystem.

The Report Card

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

The Grades In Detail

D-

U.S. Bureau of Land Management (BLM)

The BLM manages vast expanses of public land across the West that include Gunnison's, Utah, and white-tailed prairie dog habitat, though very little (proportionately) within 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. Conservationists have proposed the BLM designate multiple Areas of Critical Environmental Concern (ACEC)¹ to conserve white-tailed prairie dogs, but the agency approved none of them, concluding that they do not believe they meet the "relevance and importance" criteria for ACECs. BLM dismissed protests over oil and gas leasing in white-tailed and black-tailed prairie dog habitat and potential black-footed ferret reintroduction sites (the black-footed ferret is a rare predator that feeds almost entirely on prairie dogs) (BLM 2011).

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 next to private land. The BLM discourages prairie dog shooting on public lands but doesn't have the authority to prohibit it; most management is through the Wyoming Game and Fish Department. BLM mostly administers mineral rights in Nebraska and has little authority over prairie dog management or conservation on surface lands in the state.

The Amarillo Field Office in Texas unfortunately had to abandon plans to reintroduce prairie dogs to the Cross Bar Ranch last year after discovering the soil profiles were unsuitable – the Cross Bar is the only BLM-managed surface public land in Texas. The BLM in Arizona has been working in cooperation with the Arizona Game and Fish Department and the University of Arizona to reintroduce black-tailed prairie dogs to Las Cienegas National Conservation Area (see "Arizona").

The Utah BLM has worked cooperatively with other agencies on habitat restoration for the Utah prairie dog. The last project took place in Fall 2011: BLM, Utah Department of Natural Resources and Division of Wildlife Resources, Iron County, the Utah State University Extension, and the Paiute Indian Tribe of Utah collaborated to treat ~280 acres of BLM land as well as private land under conservation easements in Iron County to reduce sagebrush and reseed with native species. There is one active translocation site on BLM land in Garfield County, and BLM plans to authorize more sites in 2013, as well as initiate more habitat restoration projects. BLM is also working on NEPA documents for the first programmatic preventative plague dusting

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

project on BLM lands across Utah prairie dog range. Cedar City and Richfield Office BLM lands are taking part in the sylvatic plague vaccine trials.

BLM management of prairie dogs in Montana and the Dakotas is determined by Resource Management Plans.² Revised draft management plans for nearly all BLM lands in eastern Montana and South Dakota are slated to be issued this year. The draft plans may include changes to stipulations on surface disturbing and disruptive activities to minimize or avoid impacts to prairie dogs as part of the range of alternatives addressed, and will be available for public review.

In New Mexico, the Rio Puerco Field Office has been 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 Armendariz Ranch. The Farmington Field Office is working to mitigate impacts of oil and gas drilling on Gunnison's prairie dog towns. In Las Cruces district, BLM monitors the prairie dog towns on Otero Mesa annually. The Las Cruces District Office is in the process of revising the land use plan for Doña Ana, Otero, and Sierra Counties, in which they are proposing new ACECs to protect most of the remaining prairie dog towns in intact Chihuahuan desert grassland (but not including those on McGregor Range on the Otero Mesa). The plan should be available for public review within the next two months.

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 May 2009, the EPA approved the use of the anticoagulant poison Rozol (chlorophacinone), manufactured by Liphatech, to exterminate black-tailed prairie dogs in 10 states in the species' range (Colorado, Kansas, Nebraska, New Mexico, North Dakota, Montana, Oklahoma, South Dakota, Texas, and Wyoming). In July 2011, the Washington, D.C. District Court ruled that EPA had violated the Endangered Species Act (ESA) by not consulting with the U. S. Fish and Wildlife Service (USFWS) over the potential impacts of Rozol on "threatened" and "endangered" species before registering it. EPA consulted with the USFWS, which released a final biological opinion on Rozol in April 2012 detailing potential dangers from secondary poisoning. Poisoned prairie dogs take anywhere from 9-20 days to die, and regularly wander disoriented aboveground where they become easy prey. Scavengers also consume poisoned carcasses (USFWS 2012a). Chlorophacinone remains toxic in the prairie dog's tissues and ingestion could injure or kill "threatened" and "endangered" species such as aplomado falcons and black-footed ferrets, as well as more common species such as badgers, coyotes, and foxes.

² For individual Resource Management Plans, visit www.blm.gov/mt/st/en/prog/planning.html.

To prevent secondary poisoning, the label instructions require follow-up searches to remove carcasses (Liphatech undated). USFWS notes that these directions are rarely followed (USFWS 2012a). EPA dismisses these concerns because “it is illegal and a misuse of the product to use it in a manner that is inconsistent with its labeling” (EPA 2012). It is unclear how effective enforcement of the label will be. In October 2012, Rozol use was reinstated in all ten states and use of this anticoagulant is once again legal across the majority of the black-tailed prairie dog’s range.³ Some geographic and timing restrictions are in place to avoid harm to listed species, for example by prohibiting the use of Rozol on black-footed ferret reintroduction sites. However, Rozol can still be used on any private or state inholdings within or adjacent to recovery sites. Unlisted species such as raptors and migratory birds are not addressed.

In October 2012, EPA approved the anticoagulant Kaput-D (diphacinone), manufactured by Scimetrics, for black-tailed prairie dogs in the same 10 states as Rozol. The registration is time-limited and authorizes use for the 2012-2013 use season. Scimetrics has also applied to register imidacloprid warfarin for prairie dog control. Since we cannot lower EPA’s grade any further, they get **DETENTION** for consistent failure to protect prairie dogs and associated wildlife from dangerous and unnecessary poisons.

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 NPS’s policy of conserving native wildlife versus the need to appear as a “good neighbor” and protect other park resources (e.g., cultural resources). When a conflict does occur, parks are authorized to use lethal control (e.g., zinc phosphide poison, shooting) if they have an approved prairie dog management plan. The Park Service does not use or approve pesticides with chlorophacinone as the active ingredient (e.g., Rozol) on NPS lands, due to the potential for inadvertently poisoning other animals.

Four NPS units have completed management plans (Badlands National Park, Bent’s Old Fort National Historic Site, Wind Cave National Park, and Curecanti National Recreation Area) and four units have plans in some stage of preparation (Theodore Roosevelt National Park, Bryce Canyon National Park, Hubbell Trading Post National Historic Site, and Devil’s Tower National Monument). Bryce Canyon is now accepting comments on preliminary alternatives for their Utah Prairie Dog Stewardship Plan.⁴ 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 has put a hold on developing a management plan until the population returns. The black-tailed prairie dogs in Bent’s Old Fort National Historic Site also succumbed

³ www.epa.gov/oppfead1/cb/csb_page/updates/2012/rozol-bulletins.html

⁴ To read the preliminary alternatives and submit a comment, visit parkplanning.nps.gov/projectHome.cfm?projectID=38650

to plague in 2012, along with larger colonies outside the NHS to the east and west. Devil's Tower National Monument's small colony of black-tailed prairie dogs has grown to nearly 50 acres and has so far been free of plague. The Monument hopes to use passive relocation and barriers to mitigate conflicts in camping and picnic areas upon approval of their management plan. Devil's Tower has posted interpretive signs near the colony and also gives guided talks about prairie dogs. Theodore Roosevelt had approximately 1,422 acres of prairie dog colonies in 2012; Badlands recorded approximately 2,570 acres.

Plague has been detected at low, background levels in Badlands, Wind Cave, Scott's Bluff, Theodore Roosevelt, and other units. The presence of plague is especially noteworthy at Badlands and Wind Cave national parks, locations of black-footed ferret reintroduction sites. In an effort to conserve the ferrets and the prairie dog ecosystem, these parks use Delta Dust to kill fleas that host the plague bacterium, and there have been no epizootics this year. Wind Cave is being considered for plague vaccine trials, and conducts nighttime ranger-led programs about black-footed ferrets. Bryce Canyon National Park continues their annual celebration of Utah Prairie Dog Day and conducts educational programs in schools in Garfield County. To protect their 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.



U.S. Forest Service (USFS)

All four U.S. prairie dog species reside on USFS units in the West. National grasslands managed by the USFS in several Great Plains states offer the best hope for protecting black-tailed prairie dogs due to sparse public lands in the region. The USFS allows oil and gas drilling within prairie dog habitat. The agency also generally defers to state regulations on prairie dog shooting, although there are exceptions. Shooting and poisoning are prohibited in designated black-footed ferret recovery areas in the Conata Basin in the Buffalo Gap National Grassland in South Dakota⁵ and the Thunder Basin National Grassland in Wyoming. USFS has amended management plans to allow prairie dog poisoning in specific areas adjacent to private lands of the Buffalo Gap, Fort Pierre, Grand River, Little Missouri, Oglala, Pawnee, and Thunder Basin National Grasslands. The agency conducts regular population surveys.

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. These colonies have suffered from plague in the past, but no outbreaks were detected this year. Six hundred acres of prairie dog colonies on the Rita Blanca in Texas were dusted for plague. Two colonies on the Rita Blanca will be test sites for the sylvatic plague vaccine trials starting in 2013. Poisoning and other methods of lethal control are not allowed on the Kiowa and Rita Blanca. Genetics samples were collected from 30 prairie dogs at 9 colonies at various sites by researchers from Kansas State University.

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).

On the Wall Ranger District of Buffalo Gap National Grassland (containing Conata Basin), prairie dog colonies were last surveyed and mapped on the District in 2011. Active acres have been reduced from 35,350 acres in 2007 to 11,203 acres in 2011, primarily due to plague. Colonies will be mapped again in 2013. A total of 295 acres were treated with rodenticide in 2012. Plague subsided somewhat across the District in relation to 2008-2011, but some colonies (~500 acres) were still lost. Prairie dog colonies outside the black-footed ferret management area in the Wall Ranger District are part of the Phase II field trials for the sylvatic plague vaccine, and will be closed to shooting throughout the field trial period. The 1998 prairie dog shooting closure was expanded to include all black-footed ferret management areas located on the Wall Ranger District of Buffalo Gap National Grassland on July 23, 2012 (Griebel 2013).

USFS is actively restoring habitat on the Thunder Basin National Grassland in partnership with other agencies and non-profit organizations, including using controlled burns to encourage prairie dog expansion, dusting colonies to prevent plague, and relocating prairie dogs away from private lands instead of poisoning them. All active prairie dog colonies on the Thunder Basin are mapped annually, with 16,638 acres recorded in 2012. USFS preventatively dusted 780 acres for plague. Prescribed fire burned on 2,500 acres to encourage colony expansion away from private landowner boundaries.

The Dixie and Kaibab National Forests have ongoing plague dusting, habitat enhancement, and translocation projects to benefit Utah prairie dogs. USFS worked with partners in Arizona to translocate 263 Gunnison's prairie dogs to land in Kaibab National Forest.

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

The USFWS administers the Endangered Species Act (ESA). It is responsible for preventing wildlife extinctions and takes the lead in recovering and conserving imperiled species, including federally listed "threatened" and "endangered" species. Of the prairie dog species, currently only the Utah prairie dog is listed as "threatened," and the Mexican prairie dog is listed as "endangered" (foreign endangered species are primarily managed by the USFWS International Affairs Program, not the Endangered Species Program). USFWS partially funded WAFWA's sylvatic plague vaccine field study with a grant from the 2012 Competitive State Wildlife Program. Under a settlement agreement with WildEarth Guardians, the USFWS must make a final listing decision or "not warranted" determination on whether to list the Gunnison's prairie dog throughout its range before the end of 2016.

USFWS finalized the revised Utah prairie dog recovery plan in March 2012 (USFWS 2012b). The agency completed the 5-year review of the status of the Utah prairie dog, as required under the ESA, in May 2012. No change in status was recommended (USFWS 2012c). The agency also finalized the revision of the 4(d) rule for Utah prairie dogs in August 2012, limiting take of Utah prairie dogs to 10 percent of the current annual population count, with 7 percent

allocated to agricultural lands and 3 percent to private lands within 0.5 miles of Utah prairie dog conservation lands. Allowable take is capped at 6,000 prairie dogs per year in the event that 10 percent of the current population count exceeds 6,000. The rule includes allowances for lethal control (after other options are implemented) in areas "where Utah prairie dogs create serious human safety hazards or disturb the sanctity of significant human burial or human cultural sites." The USFWS, State of Utah, The Nature Conservancy (TNC), and other federal agencies are working to acquire and protect non-federal lands for the conservation of the Utah prairie dog in perpetuity. For example, the State of Utah was awarded \$1 million of USFWS Section 6 Funding to assist in the acquisition of at least 400 acres of Utah prairie dog habitat in Garfield County. Negotiations are ongoing to acquire properties from private, willing sellers and/or the Utah School and Institutional Trust Lands Administration (SITLA). In addition, USFWS acquired approximately \$950,000 from the Federal Aviation Administration as a conservation commitment in a 2010 biological opinion. The USFWS and TNC have received board approval from SITLA to acquire 800 acres of habitat in Garfield County for the conservation of Utah prairie dogs; TNC will hold title and manage the property with an endowment that is provided for by the FAA funds. The USFWS anticipates completing this purchase in Spring 2013. Under the USFWS/U.S. Geological Survey Science Support Program, those agencies were approved approximately \$232,000 for fiscal years 2013-2015 to support field trials of the sylvatic plague vaccine for Utah prairie dogs. The State of Utah has also been awarded funding via WAFWA to assist with this important research.

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

Wildlife Services is a branch of the U.S. Department of Agriculture, Animal Plant Health and Inspection Service, charged with "wildlife damage management." The agency killed more than 3,752,356 animals, including prairie dogs, in 2011.⁶ WS shot 4 white-tailed prairie dogs; shot 808 Gunnison's prairie dogs and fumigated 4,775 burrows with Fumitoxin tablets (an aluminum phosphide fumigant) or gas cartridges; shot or poisoned 16,277 black-tailed prairie dogs, killed one with a foothold trap, and fumigated 15,821 black-tailed prairie dog burrows with aluminum phosphide fumigants or gas cartridges. WS did not relocate any prairie dogs and did not undertake any non-lethal management or otherwise mitigate its destruction of prairie dogs (WS 2012).

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 been working

⁶ 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.

to reintroduce black-tailed prairie dogs. On the reintroduction sites, the state, in cooperation with the BLM, has made habitat improvements, taken measures to prevent plague, and prohibited shooting. The state's goal is to have 7,100 acres of black-tailed prairie dogs. All black-tailed prairie dog colonies are mapped yearly, and are monitored after releases of new prairie dogs. The last comprehensive count, in September 2012, yielded approximately 180 individuals on 32 acres of occupied habitat.

In 2011, AZGFD and the Phoenix Zoo began supplemental feeding of reestablished black-tailed prairie dogs to combat impacts of extremely dry winters. In 2011, the program reduced predation rates; in 2012 it was expanded to begin in early March (the breeding season) and continue until monsoon season in July. The result was the highest reproduction rate ever seen in Arizona – 130 pups emerged (compared to only 11 in 2011). Supplemental feeding is slated to become an integral part of the re-establishment program, especially in years with low winter rains. In November 2011, AZGFD secured a grant of \$400,000 from the National Fish and Wildlife Foundation to continue black-tailed prairie dog re-establishment activities and survivorship studies of the relocated black-tailed prairie dogs. The grant will also fund a genetic study of black-tailed prairie dogs in the southwest. Research will be conducted in partnership with the University of Arizona. The majority of the funds will be used to restore nearly 700 acres of grassland surrounding four existing black-tailed prairie dog colonies through mesquite removal and prescribed fire. Habitat restoration work will be done in partnership with the BLM and the Arizona Antelope Foundation. These projects will begin in summer 2013.

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. They believe that the population is likely stable, and that the increased acreage may be partly explained by increased mapping effort. The next statewide survey is planned for summer 2014. The two black-footed ferret release sites in the state are monitored annually: Aubrey Valley had 54,047 occupied acres in 2012 and the Espee Ranch had 9,514 occupied acres. AZGFD monitors both prairie dog species for plague. Black-footed ferret and black-tailed prairie dog reintroduction sites are dusted for plague. Espee Ranch has been hard hit by plague over the last few years but the colony appears to be recovering: it will be a part of the 2013 plague vaccine field trials and was not dusted this year in preparation.

Shooting Gunnison's prairie dogs is allowed with the exception of a spring closure during the breeding season from April 1 – June 15. An Arizona Game and Fish Commissioner was cited last year for shooting a Gunnison's prairie dog out of season, indicating that those regulations may need to be more widely reviewed, even by those who are supposed to enforce them (Stuckey 2012). The state does not limit poisoning of Gunnison's prairie dogs. However the state does not participate in poisoning and prohibits the use of Rozol. The four states within the range of the Gunnison's prairie dog participated in a report on the

status of range-wide populations. Because of difficulties encountered using mapping or the line intersect technique, the states decided not to use population counts or occupied acreage. Rather, they set out to establish a baseline distribution using occupancy modeling, which measures the proportion of sites occupied by a species. The report was released in March 2012 and reported a baseline occupancy of 0.200. From this baseline, fluctuations in occupancy can be calculated during future surveys and used to guide future management actions (Seglund 2012a).

AZGFD worked with Habitat Harmony (a non-profit organization), the U.S. Forest Service, and the Williams School District to translocate 263 Gunnison’s prairie dogs from school grounds to Forest Service land in Kaibab National Forest. The state is exploring barrier installation to prevent return of prairie dogs to the school grounds. AZGFD is also coordinating with Showlow Airport on planning removal of prairie dogs from runways and barrier installation.

C+ **Colorado** *(Black-tailed, Gunnison’s, and white-tailed prairie dogs)*

Colorado once had between 3,000,000 – 7,000,000 acres of black-tailed prairie dogs (USFWS 2000). Colorado Parks and Wildlife (CPW) reported that the state had approximately 800,000 active acres (plus or minus ~80,000 acres) of black-tailed prairie dogs in 2006. A comparable survey indicates this may represent a 29 percent increase from 2002 (Odell et al. 2008). Colorado’s three prairie dog species are all designated as “small game.” Under the state’s Comprehensive Wildlife Conservation Strategy, all prairie dog species are listed as “species of greatest conservation need.” In contrast, the Colorado Department of Agriculture designates prairie dogs as “destructive rodent pests.”

CPW conducts occupancy surveys for Gunnison’s and white-tailed prairie dogs every three years to monitor populations (*for more information see* Andelt et al. 2009). Surveys were completed in 2005, 2007, and 2010 for Gunnison’s prairie dogs. Data indicates that the statewide population is stable. The four states within the range of the Gunnison’s prairie dog participated in a report on the status of range-wide populations. Because of difficulties encountered using mapping or the line intersect technique, the states decided not to use population counts or occupied acreage. Rather, they set out to establish a baseline distribution using occupancy modeling, which measures the proportion of sites occupied by a species. The report was released in March 2012 and reported a baseline occupancy of 0.200. From this baseline, fluctuations in occupancy can be calculated during future surveys and used to guide future management actions (Seglund 2012a). The next occupancy survey is planned for 2016, pending approval by WAFWA and other participating partners.

In collaboration with University of Colorado at Boulder, CPW is using genetic testing to determine whether or not there are two subspecies of Gunnison’s prairie dog in Colorado and throughout the range of the species. Relocation of Gunnison’s prairie dogs in Colorado has been suspended until the genetic analysis is complete and more information on plague has

been collected. The results of the analysis are currently being prepared for publication.

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 2012b). The next survey is planned for 2017. CPW estimated occupied acreage of black-tailed prairie dogs in the state in both 2002 (see White et al. 2005a) and 2006, as mentioned above. CPW's implementation of the aerial survey method in 2002 was criticized by scientists concerned that it may have overestimated occupied acreage (Miller et al. 2005, *but see* White et al. 2005b). 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*.

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. Strategies to accomplish this objective potentially include relocation (Seglund and Schnurr 2010). However, Colorado's unique relocation law, SB-99111, 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 until June 15 for all three species of prairie dogs in the state. The CPW conducts prairie dog education programs based on local needs.

CPW continues to proactively manage plague. CPW applied Delta Dust within burrows on ~1,010 acres of Gunnison's prairie dog habitat in 25 colonies. Three hundred and fifty-five acres on three black-tailed prairie dog colonies were also dusted as part of ongoing research. CPW conducted field safety trials for the sylvatic plague vaccine on both Gunnison's and black-tailed prairie dogs (see Box 2). Research evaluating sylvatic plague vaccine efficacy will continue at multiple field sites within the range of all three species in 2013.

D-

Kansas

(Black-tailed prairie dogs)

Kansas historically had 2,000,000 – 2,500,000 acres of black-tailed prairie dogs (USFWS 2000). Kansas' most recent prairie dog survey from 2008 found 148,000 acres of prairie dogs. The next survey is planned for Spring 2013. The black-tailed prairie dog is listed as a species of "greatest conservation need" in Kansas' Comprehensive Wildlife Conservation Strategy, which provides some management guidance but no regulated protection. The Kansas Department of Wildlife, Parks, and Tourism (KDWPT) classifies black-tailed prairie dogs as a "nongame wildlife" species and has produced a prairie dog conservation plan. KDWPT's goal is to maintain 130,000 occupied acres of prairie dogs and increase the number to 150,000 acres by 2012 if incentive programs are developed (KSPDWG 2002). KDWPT does not have

authority over the use of toxicants, and poisons are widely used in the state to exterminate prairie dogs. State laws give poisoning control to counties. Kansas Statute 80-1202, passed in 1901, allows counties to poison prairie dogs on private land without the owner's permission and at their expense.⁷ 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 have been working with Audubon of Kansas to conserve the largest complex of black-tailed prairie dogs in the state and reintroduce black-footed ferrets. In September 2010, a judge denied the county's suit to poison prairie dogs on the properties (Stumpe 2010), and Logan County Commission's appeal of the ruling was denied in July 2012 (Klataske 2012). However the county is appealing again to the state Supreme Court. 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.⁸ A few thousand acres were impacted by plague in 2012. KDWPT does not take actions to prevent or mitigate disease outbreaks. Kansas offers Landowner Incentive Program (LIP) grants paying up to 75 percent of the cost for projects that benefit species of greatest conservation need. No landowners have taken advantage of the LIP program specifically for black-tailed prairie dogs, though some projects may benefit them. Prairie dog conservation could also be targeted with State Wildlife Grant funds.

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

Montana once had 1,471,000 – 6,000,000 acres of black-tailed prairie dogs (USFWS 2000). A 2008 survey found 193,239 acres of occupied colonies and 30,199 acres of inactive colonies in the state (Rauscher et al. 2012). 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 NAIP mapping efforts. During May and June of 2012, 175 colonies within these complexes were mapped, covering 7,329 acres. Sixteen colonies were determined to be inactive, mainly due to poisoning or plague. Plague epizootics were reported on three of the four complexes. Landownership within the mapped area was largely private, with some interspersed areas of state and Federal land (BLM, USFWS). MFWP funded this work with State Wildlife Grant dollars and final results are pending. Survey and monitoring data will be incorporated into modeling efforts and conservation planning for prairie dogs and black-footed ferrets.

Montana is at the northern edge of white-tailed prairie dog distribution. Current known estimates of occupied white-tailed prairie dog habitat in Montana range from 118 acres (Knowles 2004) to 366 acres (Atkinson and Atkinson 2005) in 11 colonies. White-tailed prairie dog colonies in Montana are not mapped annually and the current acreage is uncertain. One of these colonies was re-established through translocation efforts. Montana Department of Fish, Wildlife, and Parks (MFWP) has no further plans to translocate additional white-tailed prairie

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

⁸ See kansasstatutes.lesterama.org/Chapter_32/Article_9/32-919.html.

Box 3. Northern Cheyenne Indian Reservation

Over the last decade, the Northern Cheyenne Tribe has taken steps to maintain a large complex of prairie dogs and restore black-footed ferrets on the Northern Cheyenne Indian Reservation in Montana. At the complex's maximum extent, prairie dogs occupied more than 10,000 acres. In recent years, however, prairie dogs have declined dramatically due to plague, which has impacted over 6,000 acres since 2009 (fortunately the disease was not detected in 2012). The Tribe has dusted burrows to mitigate plague on a portion of the designated ferret recovery area; however the severity of the Ash Creek fire prevented dusting from occurring in 2012. As of the latest mapping effort in 2012, the Reservation had 499 acres of black-tailed prairie dog colonies, all of which are scheduled for dusting in June 2013.

The Tribal Landowner Incentive Program on the Reservation expired in 2011. Incentive funds were distributed to 592 landowners in 136 tracts with a total of 5,148.52 acres covered by conservation agreements; the agreements prohibited poisoning or other lethal control methods deleterious to prairie dogs or black-footed ferrets.

The Tribe is finalizing a Fish, Wildlife, and Recreation Ordinance, which lists both prairie dogs and black-footed ferrets as protected species. No known poisoning occurred in 2012, although shooting is evident on some colonies. There are prairie dog shooting closures in the designated ferret recovery area on the Reservation, but they are not monitored or regulated. World Wildlife Fund (WWF) and Defenders of Wildlife (DOW) began to invest heavily in ferret recovery efforts on the Reservation in 2012. The U.S. Fish and Wildlife Service, Bureau of Indian Affairs, and Lincoln Park Zoo remain steadfast partners to the tribe. With help from these partners, the tribe submitted a Tribal Wildlife Grant proposal to reinvigorate the black-footed ferret recovery program on the reservation. WWF and DOW are assisting the tribe with revising their prairie dog and ferret management plans. The Lincoln Park Zoo works with tribal students in the Work and Learn and Upward Bound programs on prairie dog and ferret ecology and monitoring techniques annually.

dogs, as both the permits and the funding have expired. Survey and monitoring data are being incorporated into modeling efforts and conservation planning such as the Crucial Areas Planning System.⁹

Montana's Comprehensive Wildlife Conservation Strategy lists both resident prairie dog species as high priority "species of concern." However, Montana's Department of Agriculture has more authority over prairie dog management than MFWP. The Department of Agriculture designates both black- and white-tailed prairie dogs "vertebrate pests." The state conservation plan applies in situations outside of Department of Agriculture authority. There is no prohibition on

⁹ For more information visit fwp.mt.gov/fishAndWildlife/conservationInAction/crucialAreas.html.

shooting either species and a license is not required (USFWS 2010). Shooting is prohibited, however, within some national 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 or if the area to be treated exceeds 80 acres in size (Nistler 2009). Charles M. Russell National Wildlife Refuge has been selected as a plague vaccine trail site, and the MFWP is contributing \$3,000 per year for the next three years (2013, 2014, and 2015) to support the vaccine trials. The state holds some conservation easements on private property to protect a variety of wildlife species but does not quantify the program's results or prairie dog acres protected.

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. A bill (LB 473) giving counties the power and the duty to control prairie dogs on private or (non-federal) public land was passed in March 2012 (Hammel 2012). The bill, introduced by State Senator LeRoy Loudon, 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 & Parks to poison prairie dogs on parks or wildlife management areas, or could bill them for the cost. 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 (AOK 2012). This is not enough, however, for Nebraska to avoid **DETENTION** for passage of the harmful poisoning bill and for consistently getting "F"s in all categories since the first report in 2008.

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).

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 report on the status of range-wide populations. Because of difficulties encountered using mapping or the line intersect technique, the states decided not to use population counts or occupied acreage. Rather, they set out to establish a baseline distribution using occupancy modeling, which measures the proportion of sites occupied by a species. The report was released in March 2012 and reported a baseline occupancy of 0.200. From this baseline, fluctuations in occupancy can be calculated during future surveys and used to guide future management actions (Seglund 2012a). New Mexico released a draft conservation plan for the Gunnison’s prairie dog in 2008, and the state is still working off of the draft plan. New Mexico was working on developing a Memorandum of Understanding that would cover conservation of both species in the state, but the project has stalled. 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 that are occurring. There are currently no specific incentive programs for prairie dog conservation, though projects could be supported through the Farm Bill or Working Lands for Wildlife programs, particularly if the project’s ultimate goal was reintroducing black-footed ferrets. 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 be an important stronghold for the species. One of three planned prairie dog towns has been established in the Southern Crescent portion of the Basin, and restoration and reintroduction work continues.¹⁰

Sevilleta National Wildlife Refuge is reintroducing and monitoring prairie dogs on three sites of about 40 acres each. About 2000 Gunnison’s prairie dogs have been released there over the last three years. The BLM has been reintroducing and monitoring Gunnison’s prairie dogs on a site in the El Malpais National Conservation Area.

¹⁰ For more information, visit the Great Plains Restoration Council website at gprc.org.

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 amount 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.

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

Oklahoma once had ~950,000 acres of black-tailed prairie dog habitat (USFWS 2000). The most current estimate of occupied acreage is 42,000, suggesting continued range contraction since 2006. This is due to plague outbreaks in the panhandle, followed by three years of drought that continues today. Continuing drought in the panhandle has slowed down the colonies' recovery from plague. Oklahoma is surveying prairie dog range using state-wide aerial photos and ground-truthing; analysis of the results is underway and is slated to be finished in September 2013. The Oklahoma Department of Wildlife Conservation (ODWC) classifies prairie dogs as "wildlife-nongame" and they are listed as "species of concern" in the state's Comprehensive Wildlife Conservation Strategy. Oklahoma is the only state that requires a permit for any prairie dog poisoning on private lands and prohibits killing of prairie dogs with explosives. Moreover, the state will not issue permits to private landowners to poison prairie dogs in counties that have fewer than 1,000 prairie dogs or less than 100 occupied acres. Landowners with 10 or more occupied acres can enroll in a Landowner Incentive Program (LIP) and receive an annual incentive payment for the occupied acres. They can also receive incentive payments for preserving native rangeland adjacent to the prairie dog colony for expansion. The LIP program has around 16,500 acres enrolled. 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 4. Lower Brule Indian Reservation

The Lower Brule Sioux Tribe Department of Wildlife, Fish, and Recreation has persevered in prairie dog conservation through many ups and downs since the late 1990s. Surveys show an increasing prairie dog population on the Lower Brule Indian Reservation in South Dakota since 1999, with the latest estimate from 2010 showing 6,190 acres. Prairie dog shooters (both tribal and non-tribal members) must purchase a license from the Tribe. Shooting is allowed year-round from sunrise to sunset, and the harvest is closely tracked. Anyone wishing to poison prairie dogs must also obtain a permit from the Tribe's Wildlife Department. Zinc phosphide is the only toxicant allowed: anticoagulants such as Rozol are strictly prohibited. Less than 100 acres per year have been controlled over the 2001-2011. Drought exacerbated conflicts in 2012 leading to the poisoning of 372 acres.

The Tribe began reintroducing black-footed ferrets in 2006, which was very successful until plague hit. Lower Brule experienced its first episode of plague in 2011, when 12 colonies totaling 1,590 acres were lost. Around 100 more acres were lost in 2012. The Tribe had already begun dusting preventatively in 2010 on acres known or believed to support black-footed ferrets; dusting continues with 13 colonies totaling 884 acres dusted in 2012.

The Tribe offered a three-tiered incentive program for prairie dog conservation for tribal landowners and lessees of tribal land from 2004-2011. Tier I prohibited the use of poisons; Tier II prohibited poisons and recreational shooting; Tier III prohibited poisons and recreational shooting and also allowed reintroduction of black-footed ferrets. Altogether, the program provided some level of protection to 3,195 acres in 22 conservation agreements. Unfortunately, funding came from the USFWS Tribal Landowner Incentive Program and the USFWS Private Landowner Stewardship Program, both of which were discontinued by Congress. Alternative funding has yet to be found.

The Tribe has implemented strategies for non-lethal management with assistance from the Prairie Dog Coalition of the Humane Society of the United States and Defenders of Wildlife. To minimize migration of prairie dogs and ferrets to private lands where they might be controlled, the Tribe installed an electric fence and a vegetative barrier 1,160 meters in length and an average 25 meters wide. The Tribe also relocated 362 prairie dogs from an area slated for control; these prairie dogs repopulated an abandoned colony.

F

South Dakota

(Black-tailed prairie dogs)

Around 1,757,000 acres of black-tailed prairie dogs once existed in South Dakota (USFWS 2000). The South Dakota Game, Fish and Parks Department (SDGFP) estimated that it had 630,849 acres in its 2008 survey. A new survey is underway in 2013. South Dakota classifies the black-tailed prairie dog as a "species of management concern," meaning the state believes it

requires both control and protection. The SDGFP underwrites poisoning costs on private and state lands when there is verified movement of prairie dogs from public to private land. Until recently, landowners could receive monetary compensation for protecting prairie dogs on private land in the Conata Basin, which includes parts of Badlands National Park, Pine Ridge Indian Reservation, private lands, and Buffalo Gap National Grassland and is the location of 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 has been canceled. South Dakota's Agriculture Department sells prairie dog poison.

The South Dakota Legislature passed House Bill 1047 on February 28, 2011, which ended the spring shooting closure on public lands (with the exception of the black-footed ferret management area in Conata Basin, which is closed year round).¹¹ There are no daily or possession limits for prairie dogs. The National Park Service, U.S. Forest Service, U.S. Fish and Wildlife Service, and World Wildlife Fund have been undertaking measures to counteract plague in parts of the Conata Basin. Plague has been spreading north, east, and west and was recently confirmed on the Fort Pierre National Grassland (AP 2012).

Box 5. Pine Ridge Indian Reservation

Pine Ridge Indian Reservation in South Dakota contained the largest area of black-tailed prairie dogs in the Great Plains until plague struck in 2005. Since then the disease has wiped out two-thirds of the estimated 81,900 acres in Shannon County. Aside from some emergency dusting near residences in 2005 and 2006, the Tribe has not managed for plague. Some areas appear to have rebounded, but the population remains well below the 2005 numbers. Tribal members can purchase a license to shoot prairie dogs for \$12.00 for the year; for non-tribal members the cost is \$80.00. The shooting season is year-round. Rozol use is prohibited within the boundaries of the Pine Ridge Indian Reservation. Proposals to fund a prairie dog colony mapping effort have been submitted. If awarded, the tribe will begin mapping efforts in 2013. The tribe is also working in partnership with Defenders of Wildlife and World Wildlife Fund to revise their prairie dog management plan.

The swift fox, which preys on prairie dogs, has historically been present on the Pine Ridge Indian Reservation. The Tokala Warrior Society, or Kit Fox Society, of the Oglala Sioux has long used the swift fox as their symbol. A decline in the swift fox population prompted the Oglala Sioux Parks and Recreation Authority to begin reintroduction. Thirty swift foxes were relocated from Wyoming and thirty from Colorado in 2009, and in 2010 another 25 foxes from Colorado joined them. That summer 19 swift fox pups were found on the Reservation, a positive sign for the revitalization of the population, and hopefully of the Tokala Society as well (USFWS 2012d). The Bureau of Indian Affairs has provided some funding in recent years to monitor the foxes, as well as to monitor the spread of plague.

¹¹ See legis.state.sd.us/sessions/2011/Bill.aspx?Bill=1047.

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

At one time, Texas had an astounding ~58,000,000 acres of black-tailed prairie dogs (USFWS 2000). The Texas Parks and Wildlife Department estimated 115,000 acres occupied by prairie dogs in its 2006 survey. The average colony size in Texas is less than one hundred acres, but the state has at least two colonies larger than 5,000 acres. Texas completed a resurvey of priority areas identified in the Texas Black-tailed Prairie Dog Management Plan. Preliminary results indicate that while some areas have grown and others have shrunk, overall acreage in priority areas decreased between 2005 and 2010. The Department hopes to repeat surveys in 2014 to obtain more precise trend information. 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 has not been met. In February 2011, two landowners were enrolled in an incentive program that protected almost 3,600 acres of prairie dogs and their habitat. An updated enrollment number is not available. Texas allows unlimited prairie dog shooting with a license. The state allows live-collecting of less than 25 prairie dogs without a permit; capture and possession of more than 25 with a nongame permit; and capture and sale of prairie dogs with a nongame commercial dealer’s permit. The state maintains a voluntary prairie dog colony monitoring program intended to promote conservation. The state agriculture department distributes poison to control prairie dogs, but requests made for the poison are decreasing. The state has formed a Texas Black-footed Ferret Working Group to assess the feasibility of reintroducing black-footed ferrets. As in Oklahoma, drought has been ongoing in parts of the state for three years, and plague may have reduced colony acreage by 50 percent in some areas of the Southern Plains. Texas Parks and Wildlife Department (TPWD) has some incentive and conservation programs that may benefit black-tailed prairie dogs, though 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 has begun establishing a new black-tailed prairie dog colony in Caprock Canyons State Park (Leggett 2012).

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 2012, the UDWR reported a spring count of about 7,900 adult Utah prairie dogs during its annual trend count.¹² The UDWR relocated 1,034 Utah prairie dogs from Iron County and 337 Utah prairie dogs from Garfield County to various relocation sites across the range in 2012.

¹² 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.

Utah has established a habitat credit exchange program (UPDHCE) to protect Utah prairie dog habitat by obtaining perpetual conservation easements on private lands across the species' range. The program is administered by Panoramaland and Color Country Resource Conservation and Development Councils (RC&D) and other partners. The UPDHCE is utilized as a conservation banking mechanism that provides credits to offset impacts of private and federal development activities. The UPDHCE is designed to be self-sustaining through free market purchases and sales of credits. During the program's first year in 2012, three participants enrolled properties into conservation easements, protecting 150-200 Utah prairie dogs on 200 acres. There have also been several biological opinions issued by USFWS with upfront mitigation commitments in the form of purchased UPDHCE credits (\$55,000 of credits from Garkane Energy in 2012 and over \$285,000 of credits pending from Utah Department of Transportation). The program must work against widespread perception of the Utah prairie dog as a "nuisance," but is reported to be gaining interest.

The Utah legislature is currently hearing a resolution expressing support for Utah prairie dog management in Iron County to be turned over to the county for a five-year period.¹³ 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 on a county-by-county basis under the Endangered Species Act.

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. Utah adopted a *Gunnison's Prairie Dog and White-tailed Prairie Dog Conservation Plan* in 2007. The state surveyed for Gunnison's prairie dogs in 2008 on tribal lands and in 2007 on non-tribal lands. Non-tribal lands were resurveyed in 2010. The state estimates that it has 375,342 acres of potential Gunnison's prairie dog habitat, but this is a rough estimate with no confidence limits. Because it includes acreage that may be geographically inaccessible to prairie dogs, it is likely an overestimate of potential habitat. The state estimates that 14 percent of that area is occupied. The four states within the range of the Gunnison's prairie dog participated in a report on the status of range-wide populations. Because of difficulties encountered using mapping or the line intersect technique, the states decided not to use population counts or occupied acreage. Rather, they set out to establish a baseline distribution using occupancy modeling, which measures the proportion of sites occupied by a species. The report was released in March 2012 and reported a baseline occupancy of 0.200. From this baseline, fluctuations in occupancy can be calculated during future surveys and used to guide future management actions (Seglund 2012a).

¹³ <http://le.utah.gov/~2013/bills/sbillint/SCR003.htm>

Utah surveyed for white-tailed prairie dogs in 2008 and resurveyed in 2011. They estimate that ~1,170,892 acres are currently suitable white-tailed prairie dog habitat, and that an additional ~288,713 acres could be suitable with changes in land cover or land use. Since 2008, white-tailed prairie dog occurrence has increased. Occupancy surveys for both the white-tailed and Gunnison's prairie dog will be repeated every third year. The Utah Department of Transportation has made efforts to use barriers to keep prairie dogs out of active construction zones.



Wyoming

(Black-tailed and white-tailed prairie dogs)

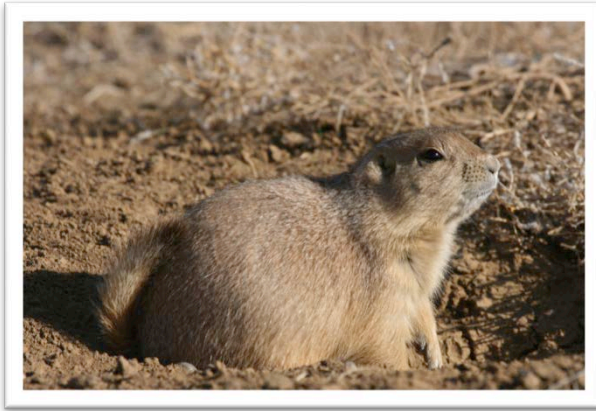
Wyoming once had around 16,000,000 acres occupied by black-tailed prairie dogs (USFWS 2000). The Wyoming Game and Fish Department (WGFD) surveyed black-tailed prairie dog populations in 2006 and estimated 229,607 occupied acres (Grenier et al. 2007). The department surveyed again in 2009, but the sample size was too small to account for the variance. Therefore the usefulness of this survey for monitoring population trends was questionable. The authors recommended a larger sample size and an increase in resources for the next survey, as the results suggest occupied acreage may have been underrepresented in the past (Grenier 2010). The recommendations are unlikely to happen, as the Wyoming Game and Fish Department removed both species from the list of "species of greatest conservation need" in the state's latest revision of the state wildlife action plan. This effectively eliminates state funding for prairie dog surveys and conservation, as the state focuses efforts on species of greatest conservation need. The condition of black-tailed prairie dog colonies appeared to have decreased in 2009, with over half impacted by disease (most likely sylvatic plague and/or poisoning) (Grenier 2010). Wyoming will be hosting plague vaccine trials in 2013.

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

In 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.

Status of the Five Prairie Dog Species

Black-tailed Prairie Dog



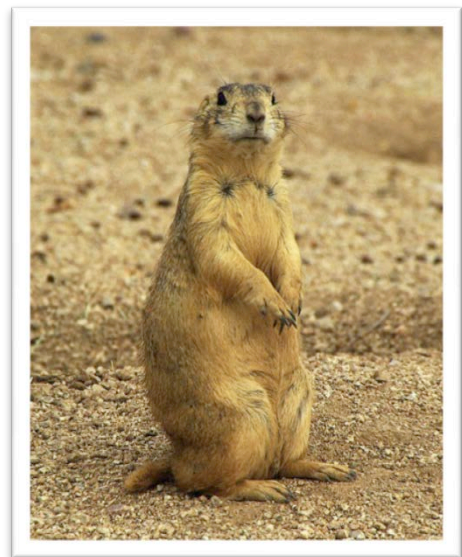
Black-tailed prairie dog. Photo: Richard Reading

Plague continues to decimate colonies – prairie dogs have little or no immunity to this disease, which was introduced to North America in the late 1800s (see Box 2). Poisoning and shooting continue unabated since the species was last denied listing in 2009. After a brief reprieve, use of the anti-coagulant poison Rozol is once again legal for killing black-tailed prairie dogs across the majority of their range. Kaput-D, a similar anticoagulant, was authorized for use during the 2012-2013 use season (see “Environmental Protection Agency”).

The black-tailed prairie dog population once numbered in the billions and ranged across 11 U.S. states and parts of Mexico and Canada, covering an estimated 100,000,000 acres (USFWS 2000). Conversion of native grasslands to agriculture, particularly in the eastern extent of the species’ range, has resulted in the permanent loss of approximately 40 percent of their original habitat. Black-tailed prairie dogs have been eliminated from up to 99 percent of their historic range in the last 150 years.

Gunnison’s Prairie Dog

The Gunnison’s prairie dog population has declined by 98-99 percent across its historic range; the occupied area declined from ~24,000,000 acres in 1916 to between 340,000 and 500,000 acres in 2008 (USFWS 2008). Land development and oil and gas drilling are particular threats; USFWS predicts that urban and suburban sprawl and commercial development will impact 49 percent of Colorado’s Gunnison’s prairie dog habitat in Colorado by 2020 (USFWS 2008). The greatest threat to the Gunnison’s prairie dog is plague, which can cause 100 percent mortality in a colony. The impact of plague, combined with the effects of continued shooting, poisoning, and habitat loss, has contributed to the continued decline of Gunnison’s prairie dogs; though they are a candidate species for listing under the ESA, that designation provides no legal protection. A legal settlement reached in 2011 between

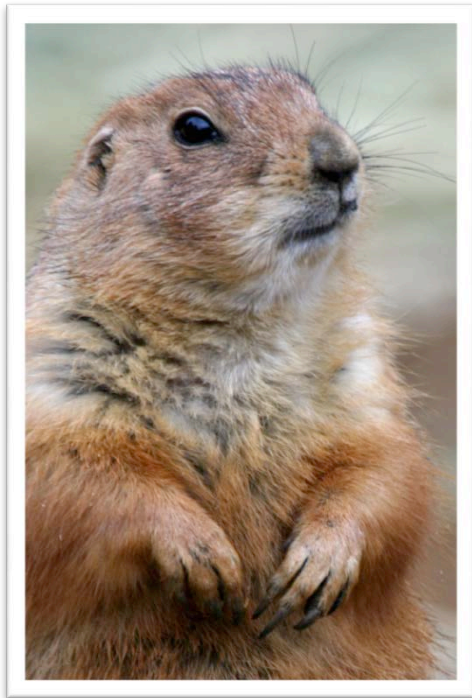


Gunnison’s prairie dog. Photo: Andrew Hollander.

WildEarth Guardians and USFWS requires the agency to make final listing decisions or “not warranted” findings for 251 candidate species, including the Gunnison’s prairie dog, by 2016.

In the meantime, the four states within the range of the Gunnison’s prairie dog are monitoring the status of range-wide populations using occupancy modeling – all the states completed surveys in 2010. Because of difficulties encountered using mapping or the line intersect technique, the states decided not to use population counts or occupied acreage. Rather, they set out to establish a baseline distribution using occupancy modeling, which measures the proportion of sites occupied by a species. The report was released in March 2012 and reported a baseline occupancy of 0.200. From this baseline, fluctuations in occupancy can be calculated during future surveys and used to guide future management actions (Seglund 2012a). Ongoing genetic research will determine if there are two distinct subspecies of Gunnison’s prairie dog (see “Colorado”).

Mexican Prairie Dog



Mexican prairie dog. Photo: Rurik List

The Mexican prairie dog is currently found in a range of approximately 124,000 acres in northwestern Mexico, in the states of Coahuila, Nuevo León, and San Luis Potosí. Historically, they were also found in the state of Zacatecas (Hardy 2011). An updated population count, using direct counts and compared with a distance sampling method, is underway but results are not yet available. The Mexican government outlawed killing Mexican prairie dogs in 2004. The species is protected under the U.S. Endangered Species Act as “endangered.” Conservation organizations, including Pronatura Noreste and Profauna, and Mexican and U.S. scientists are working to protect the animals and their habitat.

The biggest threat to Mexican prairie dogs throughout their range is loss of habitat to agriculture, including plantations of maguay (an agave), nopal (a cactus), and potato farms supplying the junk food industry. The primary buyer of the potatoes is U.S.-based Frito Lay, Inc., a subsidiary of PepsiCo, Inc. Concerned Mexicans are urging U.S. citizens to contact PepsiCo and ask the company to stop buying potatoes from farms within Mexican prairie dog habitat.¹⁴ In 2010 over 300 acres of the largest prairie dog colony in Coahuila, Mexico, were plowed. Though the activity was stopped and the land is no longer open to agriculture, the Mexican federal government agency, Procuraduría Federal de Protección al Ambiente, declined to prosecute the extensive damage that had already

¹⁴ Visit perritomexicano.blogspot.com to learn more and take action.

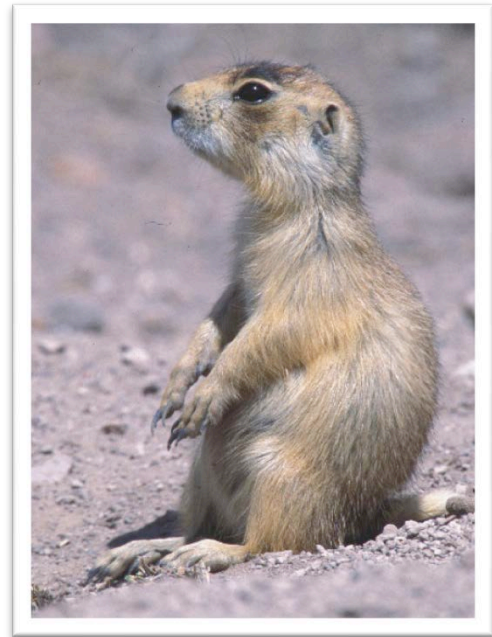
occurred. Some colonies in Coahuila remain stable but others continue to decline, especially those subject to grazing.

Stricter regulation of agriculture in Nuevo León may have helped the stability of colonies, which are holding up relatively well under ongoing drought. Mexican prairie dogs in San Luis Potosí have not fared as well; the drought there is especially severe and the prairie dog population is sparse.

Utah Prairie Dog

The Utah prairie dog is listed as “threatened” under the Endangered Species Act. Despite this federal status, they still face considerable threats including habitat loss, plague, and livestock grazing. The Utah prairie dog population declined from historical numbers of ~95,000¹⁵ to a low of 3,300 individuals in the early 1970s (USFWS 2012b). The 2012 spring count estimated 15,800 adults. USFWS finalized the revised Utah prairie dog recovery plan in April 2012; the plan emphasizes conserving extant colonies, establishing additional colonies via habitat improvement or translocation, controlling plague, and monitoring habitat conditions (USFWS 2012b).

The agency completed the 5-year review of the status of the Utah prairie dog, as required under the ESA, in May 2012. No change in status was recommended. The agency also finalized the revision of the 4(d) rule for Utah prairie dogs in August 2012, limiting take of Utah prairie dogs to 10 percent of the current annual population count, with 7 percent allocated to agricultural lands and 3 percent to private lands within 0.5 miles of Utah prairie dog conservation lands. Allowable take is capped at 6,000 prairie dogs per year in the event that 10 percent of the current population count exceeds 6,000. The rule includes allowances for lethal control (after other options are implemented) in areas “where Utah prairie dogs create serious human safety concerns or disturb the sanctity of significant human burial or human cultural sites.” The State of Utah was awarded \$1 million of USFWS Section 6 Funding to assist in the acquisition of at least 400 acres of Utah prairie dog habitat in Garfield County. Negotiations are ongoing to acquire properties from private, willing sellers and/or the Utah School and Institutional Trust Lands Administration (SITLA). In addition, USFWS acquired approximately \$950,000 from the Federal Aviation Administration as a



Utah prairie dog. Photo: Jess Alford

¹⁵ It should be noted that these estimates were derived from informal interviews rather than survey data and as such may be unreliable.

conservation commitment in a 2010 biological opinion. The USFWS and TNC have received board approval from SITLA to acquire 800 acres of habitat in Garfield County for the conservation of Utah prairie dogs; TNC will hold title and manage the property with an endowment that is provided for by the FAA funds. The USFWS anticipates completing this purchase in the Spring 2013. Under the USFWS/U.S. Geological Survey Science Support Program, those agencies were approved approximately \$232,000 for fiscal years 2013-2015 to support field trials of the sylvatic plague vaccine for Utah prairie dogs. The State of Utah has also been awarded funding via WAFWA to assist with this important research.

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. No landowners are currently participating in the rangewide programmatic agreement; however, five landowners are enrolled in individual Safe Harbor Agreements covering approximately 509 acres, with occupied habitat on two of the properties (USFWS 2012c).

Utah prairie dogs and their habitat on private land are subject to the ESA's "take" prohibitions, meaning that aside from the control allowed under the special 4(d) rule or through requirements developed in Habitat Conservation Plans, disturbance or harm to Utah prairie dogs and their habitat is not allowed without a permit from USFWS. Utah prairie dogs on private land are vulnerable to development if the landowner decides to develop the land and the USFWS issues a "take" permit under the ESA. Due to the controversy that often surrounds prairie dog conservation in parts of Utah, an array of tools are needed to preserve Utah prairie dogs on private land. Utah has established a habitat credit exchange program (UPDHCE) to protect Utah prairie dog habitat by obtaining perpetual conservation easements on private lands across the species' range. The program is administered by Panoramaland and Color Country Resource Conservation and Development Councils (RC&D) and other partners. The UPDHCE is utilized as a conservation banking mechanism that provides credits to offset impacts of private and federal development activities. Landowners with at least 20 Utah prairie dogs on 40 acres may sell a perpetual conservation easement on those acres to the RC&D. The landowner will then work with the RC&D to develop a customized management plan and coordinate stewardship of the land that "protects habitat values for [Utah prairie dogs] and allows continued agricultural activities."¹⁶ This translates into habitat credits. A landowner wishing to develop property with Utah prairie dogs may then purchase these credits to offset loss of Utah prairie dogs and habitat. The purchaser of conservation credits can proceed with their development projects without delay or restriction. Proceeds will be used to support the program and related management requirements. During the program's first year in 2012, three participants enrolled properties into conservation easements, protecting 150-200 Utah prairie dogs on 200 acres. There have also been several biological opinions issued by USFWS with upfront mitigation commitments in the form of purchased UPDHCE credits (\$55,000 of credits

¹⁶ See panoramalandrcd.org/?page_id=199.

from Garkane Energy in 2012 and over \$285,000 of credits pending from Utah Department of Transportation).

White-tailed Prairie Dog



White-tailed prairie dogs. Photo: Richard Reading

White-tailed prairie dogs are found in Utah, Colorado, Wyoming, and a small area of southern Montana. The species' range has declined an estimated 92-98 percent since the late 1800s (CNE et al. 2002). The majority (56 percent) of remaining white-tailed prairie dog habitat is on BLM land. A high percentage of the species' range is leased by BLM for oil and gas drilling: about 50 percent of occupied areas that have been mapped in Utah, 30 percent of estimated range in Colorado, and 27 percent of the gross range in Wyoming (gross range indicates the boundaries of the species range, not the area of occupied or suitable habitat)

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

References

- Andelt, W. F., G. C. White, P. M. Schnurr, and K. W. Navo. 2009. Occupancy of random plots by white-tailed and Gunnison's prairie dogs. *The Journal of Wildlife Management* 73(1): 35-44.
- [AOK] Audubon of Kansas. 2012. "Sixty-five prairie dogs relocated to Hutton Niobrara Ranch Wildlife Sanctuary." August 22. Online at: <http://audubonofkansas.org/2012/sixty-five-prairie-dogs-relocated-to-hutton-niobrara-ranch-wildlife-sanctuary/>.
- [AP] Associated Press. 2012. "More prairie dog disease confirmed in South Dakota." November 28. Online at: http://www.necn.com/11/28/12/More-prairie-dog-disease-confirmed-in-So/landing_health.html?&apID=1877615312954586adad946703a1b56e.
- Atkinson, E. C., and M. L. Atkinson. 2005. Priority Sending and Receiving Sites for White-tailed Prairie Dog Relocation in Carbon County, Montana. A report prepared for BLM, Billings Field Office, Billings, MT.
- [BLM] Bureau of Land Management. 2011. Decision; December 2009 Oil and Gas Sale Protest of 73 Parcels; Protests Dismissed in Part; 16 Parcels Deferred; 57 Parcels Issued. Wyoming State Office, Cheyenne, WY.
- CNE et al. 2002. Petition for a Rule to List the White-Tailed Prairie Dog (Sciuridae: *Cynomys leucurus*) as Threatened or Endangered under the Endangered Species Act, 16 U.S.C. § 1531 et seq. (1973 as Amended) and for the designation of Critical Habitat. Petitioners: Center for Native Ecosystems, Biodiversity Conservation Alliance, Southern Utah Wilderness Alliance, American Lands Alliance, Forest Guardians, Terry Tempest Williams, Ecology Center, Sinapu.
- [EPA] Environmental Protection Agency. 2012. EPA comments on the FWS draft Biological Opinion for Rozol. Washington, D. C.
- Grenier, M. 2010. Abundance estimate of the black-tailed prairie dog in eastern Wyoming completion report. Pages 187-190 in A. C. Orabona, editor. *Threatened, Endangered, and Nongame Bird and Mammal Investigations. Period Covered: 15 April 2009 to 14 April 2010*. Wyoming Game and Fish Department Nongame Program, Wildlife Division. Cheyenne, WY.
- Grenier, M., and T. Filipi. 2009. Estimate of abundance for the white-tailed prairie dog in Wyoming completion report. Pages 149-172 in A. C. Orabona, editor. *Threatened, Endangered, and Nongame Bird and Mammal Investigations. Period Covered: 15 April 2008 to 14 April 2009*. Wyoming Game and Fish Department Nongame Program, Wildlife Division. Cheyenne, WY.
- Grenier, M., R. Schell, N. Whitford, and B. Oakleaf. 2007. Black-tailed prairie dog monitoring in Wyoming completion report. Pages 123-130 in A. O. Cerovski, editor. *Threatened, Endangered, and Nongame Bird and Mammal Investigations. Period Covered: 15 April 2006 to 14 April 2007*. Wyoming Game and Fish Department Nongame Program, Wildlife Division. Cheyenne, WY.
- Griebel, R. 2013. Wall Ranger District 2012 Boundary and Interior Management Zone Report. Nebraska National Forest, Buffalo Gap National Grassland, Wall Ranger District. Wall, South Dakota.
- Hagen, S., P. Isakson, and S. Dyke. 2005. North Dakota Comprehensive Wildlife Conservation Strategy.

- Hammel, Paul. 2012. "Prairie dogs take cover – bill passes." World-Herald Bureau. Lincoln, NE. March 8. Online at: <http://www.omaha.com/article/20120308/NEWS01/703099983>.
- Hardy, S. 2011. "Cynomys mexicanus." Animal Diversity Web. Online at: http://animaldiversity.ummz.umich.edu/site/accounts/information/Cynomys_mexicanus.html.
- Johnsgard, P. A. 2005. Prairie Dog Empire: A Saga of the Shortgrass Prairie. University of Nebraska Press, Lincoln and London.
- Johnson, K., T. Neville, B. Kramer, and B. Flores. 2010a. Monitoring Black-tailed Prairie Dog Towns in Eastern New Mexico Using Remote Sensing: 2010 Final Report. Natural Heritage New Mexico Publication No. 10-GTR-359. Natural Heritage New Mexico, University of New Mexico, Albuquerque, NM.
- Johnson, K., T. Neville, D. Mikesic, and D. Talayumptewa. 2010b. Distributional Analysis of Gunnison's Prairie Dog (*Cynomys gunnisoni*) on The Navajo Nation and Reservation of the Hopi Tribe. Natural Heritage New Mexico, University of New Mexico, Albuquerque, NM.
- Klataske, R. 2012. "AOK Applauds Appeals Court Decision." Audubon of Kansas E-Newsletter. July 18.
- Knowles, C.J. 2004. An Inventory of Black and White-tailed Prairie Dog Colonies in the Billings and Powder River Resource Areas. Montana Natural Heritage Program, Helena, MT.
- [KSPDWG] Kansas Black-Tailed Prairie Dog Working Group. 2002. Kansas Black-Tailed Prairie Dog Conservation and Management Plan.
- Leggett, Mike. 2012. "Texas Parks and Wildlife establishing new prairie dog colony." Statesman.com. July 21. Online at: <http://www.statesman.com/news/lifestyles/recreation/texas-parks-and-wildlife-establishing-new-prairie-/nRqjd/>.
- Licht, D. S., C. Ogden, and M. Chase. 2009. The prairie dog: a century of confusion and conflict in park management. *The George Wright Forum* 26:84-100.
- Liphatech. Undated. Rozol Prairie Dog Bait Restricted Use Label. Milwaukee, WI.
- Luce, R. J. 2003. A Multi-State Conservation Plan for the Black-tailed Prairie Dog, *Cynomys ludovicianus*, in the United States – an addendum to the Black-tailed Prairie Dog Conservation Assessment and Strategy, November 3, 1999.
- McDonald, L. L., Stanley, T. R., Otis, D. L., Biggins, D. E., Stevens, P. D., Koprowski, J. L., and Ballard, Warren. 2011. Recommended Methods for Range-wide Monitoring of Prairie Dogs in the United States. U.S. Geological Survey Scientific Investigations Report 2011–5063.
- Miller, S.D., R. P. Reading, B. Haskins, and D. Stern. 2005. Overestimation bias in estimate of black-tailed prairie dog abundance in Colorado. *Wildlife Society Bulletin* 33: 1444-1451.
- Odell, E., F. Pusateri, and G. White. 2008. Estimation of occupied and unoccupied black-tailed prairie dog colony acreage in Colorado. *Journal of Wildlife Management* 72:1311-1317.
- Rauscher, R. L., Story, S. J., Gude, J. A., & Russell, R. E. 2012. Estimation of active and inactive black-tailed prairie dog (*Cynomys ludovicianus*) colony area in Montana. In prep.

- Rocke, T., and R. Abbott. 2012. Sylvatic Plague vaccine: combating plague in prairie dogs and black-footed ferrets. *The Wildlife Professional* 6(1): 50-53.
- Seglund, A. E. 2012a. Gunnison's Prairie Dog Range-wide Occupancy 2010 Baseline Survey Report WAFWA Grassland Initiative Status Report. Western Association of Fish and Wildlife Agencies. Laramie, WY. Unpublished report.
- _____. 2012b. Occupancy of Random Plots by White-tailed Prairie Dogs in Colorado 2004-2011. Unpublished draft report. Colorado Parks and Wildlife.
- Seglund, A.E. and P.M. Schnurr. 2010. Colorado Gunnison's and White-tailed Prairie Dog Conservation Strategy. Colorado Division of Wildlife, Denver, Colorado.
- Stumpe, J. 2010. "Citing species act, judge spares prairie dogs." *New York Times*. New York, NY. October 22. Online at <http://www.nytimes.com/2010/10/23/us/23prairie.html>.
- [TXPDWG] Texas Black-tailed Prairie Dog Working Group. 2004. Texas Black-tailed Prairie Dog Conservation and Management Plan. Texas Parks and Wildlife Department Publication PWD RP W7000-1100 (7/05).
- Underwood, J. 2007. Interagency Management Plan for Gunnison's Prairie Dogs in Arizona. Nongame and Endangered Wildlife Program, Arizona Game and Fish Department, Phoenix, AZ.
- [USFWS] U.S. Fish and Wildlife Service. 2012a. Final Biological Opinion for Rozol Use on Black-tailed Prairie Dogs Registered Under Section 3 of the Federal Insecticide, Fungicide, and Rodenticide Act. Ecological Services Region 6 and Region 2.
- _____. 2012b. Utah Prairie Dog (*Cynomys parvidens*) Final Revised Recovery Plan. Mountain-Prairie Region, Denver, CO.
- _____. 2012c. Utah Prairie Dog (*Cynomys parvidens*) 5-year Review: Summary and Evaluation. Utah Field Office, West Valley City, Utah.
- _____. 2012d. "Swift fox reintroduction on the Pine Ridge Indian Reservation." Fish and Wildlife Service Native American Liason; Resource Highlights. Online at: http://www.fws.gov/nativeamerican/News_Resource/Swift%20Fox%20Reintroduction.html.
- _____. 2010. 12-month finding on a petition to list the white-tailed prairie dog as Endangered or Threatened. *Federal Register* 75: 30338-30363.
- _____. 2008. 12-month finding on a petition to list the Gunnison's prairie dog as Endangered or Threatened. *Federal Register* 73: 6660-6684.
- _____. 2000. 12-month administrative finding, black-tailed prairie dog. Summarized in *Federal Register* 65: 5476-5488.
- [WAFWA] Western Association of Fish and Wildlife Agencies. 2006. Memorandum of Understanding for Conservation of Species of Conservation Concern Associated with Prairie Ecosystems.

[WGI] WAFWA Grasslands Initiative. 2011. Western Grassland Initiative: A Plan for Conserving Grassland Habitat and Wildlife. July 2011.

White, G. C., J. R. Dennis, and E. M. Pusateri. 2005a. Area of black-tailed prairie dog colonies in eastern Colorado. *Wildlife Society Bulletin* 33: 265-272.

White, G. C., J. R. Dennis, and E. M. Pusateri. 2005b. Response to: Overestimation bias in estimate of black-tailed prairie dog abundance in Colorado. *Wildlife Society Bulletin* 33: 1452-1455.

Williams, J. 2002. Black-tailed prairie dogs... a North Dakota Game and Fish Department perspective. *ND Outdoors* June 2002: 7-9.

[WS] Wildlife Services. 2012. Table G. Animals Taken by Component/Method Type and Fate by Wildlife Services - FY 2011.

Prairie Dog Range Map

