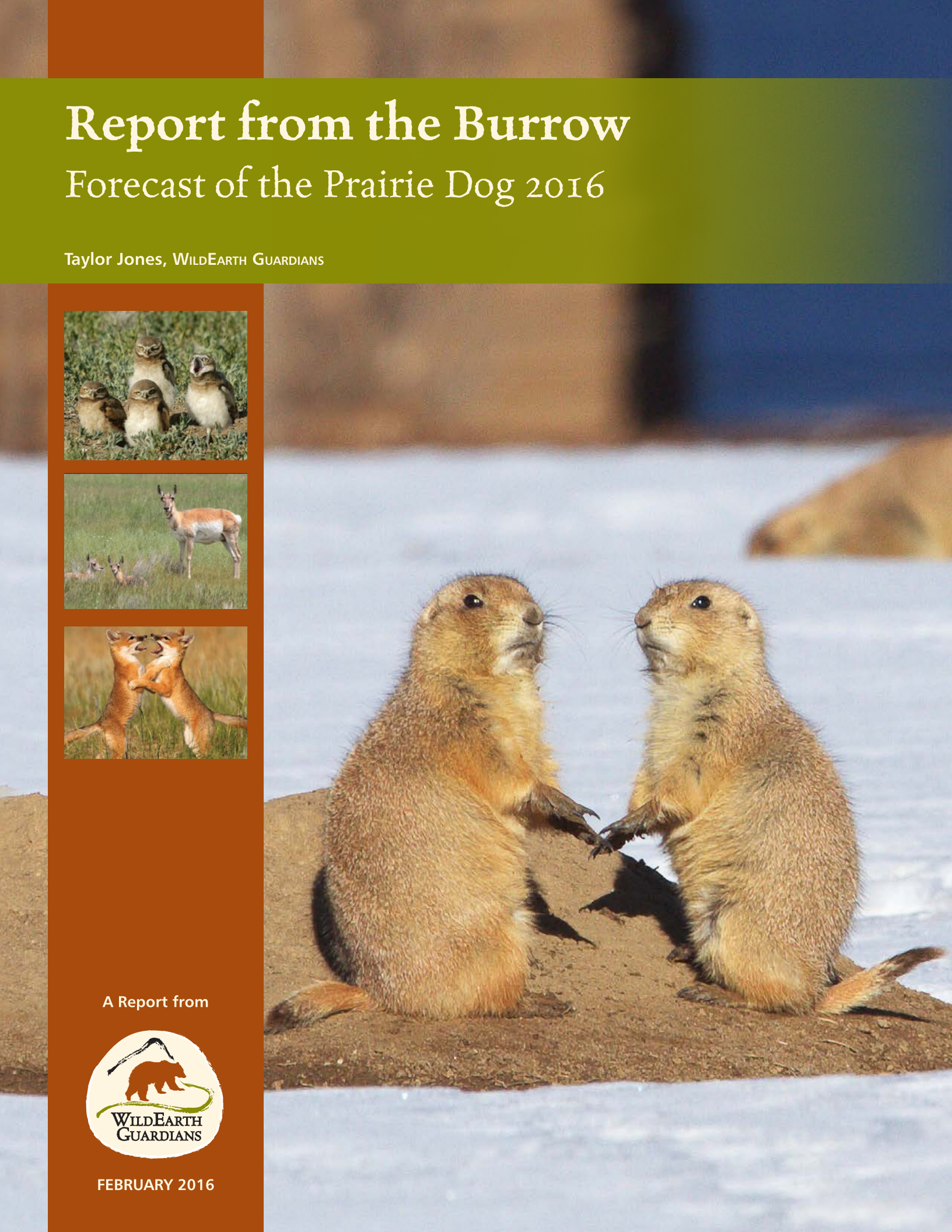
Report from the Burrow

Forecast of the Prairie Dog 2016

Taylor Jones, WildEarth Guardians



A Report from

WildEarth Guardians

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

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Whenever possible, report sections were reviewed by a representative of the state or federal agency being graded. Thank you to the state and federal agencies and non-governmental organizations that provided information and our reviewer Kristy Bly (World Wildlife Fund). Review does not constitute an endorsement of the 2016 *Report from the Burrow*.

Report from the Burrow:
Forecast of the Prairie Dog 2016

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

The *Report from the Burrow* annually evaluates and grades the performance of state and federal agencies responsible for prairie dog management. Most state and federal agencies are legally bound to protect wildlife and wildlife habitat on our public lands. This report is a tool for the public to hold agencies accountable.

Guardians created this report in 2008 in order to spur action within wildlife management agencies and create better outcomes for prairie dogs. At that time, the grades were both a critique and a call to action. Over the years, the report has evolved. It has always been difficult to get an "A" in *Report from the Burrow*, and that is by design. WildEarth Guardians aspires to an ideal future in which prairie dogs are protected and respected as a key part of healthy, thriving ecosystems. In that future, non-lethal methods are used to resolve human/wildlife conflicts, grassland restoration is a top priority and habitat destruction is forbidden, resource extraction is sustainable or prohibited, and rare species that depend on prairie dogs, like the black-footed ferret, are fully recovered with self-sustaining populations across their historic ranges. Guardians' vision for prairie dog management is aspirational and reflects our organization's strong belief that more needs to be done for the prairie dog ecosystem. State and federal agencies are constrained by outside forces including funding, public relations, agency mandates, and conflicts with other agencies. Though we strive for clarity and consistency, the grading system has inherent subjective elements and is difficult to apply consistently over a wide variety of agencies with very different mandates and responsibilities.

Therefore, this year will be the last year we assign grades to state and federal agencies. Next year, the 10th anniversary of the report, we will be switching to a new format, one which we hope will capture the full complexity of prairie dog conservation in the American West. It will be a reference and information repository for prairie dog managers and prairie dog allies, and a forum for Guardians and other conservation organizations to present conservation strategies we would like to see implemented.

The new format of the report is a work in progress, and we are soliciting feedback from agencies, other non-profits, and researchers. What would you like to see in the new format? What would make the report most useful to your work? Please let us know by emailing tjones@wildearthguardians.org with your ideas and suggestions.

Glossary

Aluminum phosphide: A fumigant poison used to kill prairie dogs. Usually available in the form of a pellet which, when inserted into a burrow, reacts with water and emits lethal hydrogen phosphide gas. Aluminum phosphide is also available in a gas cartridge.

Anticoagulant rodenticide: Poisons for use on rodents, including prairie dogs, which work by inhibiting synthesis of coagulation proteins in the blood. Symptoms include hemorrhage, bleeding or swollen eyes, swollen joints, and lethargy over one to three weeks after exposure, followed by death. These poisons accumulate in the tissues of target animals and thus pose a poisoning risk to non-target animals that ingest carcasses of poisoned animals.

DeltaDust: The Trademark of the insecticide deltamethrin, used to kill fleas for the purpose of preventing flea-borne diseases such as sylvatic plague.

Dusting: Applying DeltaDust to prairie dog burrows or directly onto animals before release, in order to kill fleas in an attempt to prevent sylvatic plague.

Endangered Species Act (ESA): An important environmental law passed in 1973, designed to protect species from extinction. The ESA's purpose is to protect and recover imperiled species and the ecosystems upon which they depend. The U.S. Fish and Wildlife Service and the National Marine Fisheries Service jointly administer the law. Species may be listed as "endangered" or "threatened" under the law, at which point they are granted the law's full protections. "Endangered" means a species is in danger of extinction throughout all or a significant portion of its range. "Threatened" means a species is likely to become endangered within the foreseeable future in all or a significant portion of its range. Protections of the ESA include consultation requirements with the U.S. Fish and Wildlife Service for any federally-permitted project that might endanger a listed species or its habitat, and prohibitions on "take" (*see below*). For the full text of the law, *see* 7 U.S.C. § 136, 16 U.S.C. § 1531 et seq.

Exclosure: A fence or other barrier designed to keep wildlife out of a defined area.

Extirpation: The condition of a species (or other taxon) that ceases to exist in the chosen geographic area of study, though it still exists elsewhere.

Fumigation: As a method of killing prairie dogs, refers to sealing a gas cartridge or fumigant poison inside a burrow in order the kill the inhabitant(s).

Habitat Conservation Plan (HCP): A planning document developed with the intent of minimizing or mitigating the anticipated "take" of a listed species by conserving the habitat upon which the species depends. An HCP is a required part of an application for an ITP (*see below*).

Incidental Take Permit (ITP): A permit issued under the ESA to private, non-federal entities that allows limited "take" of listed species during the completion of otherwise lawful projects.

Inholding: An area of private land surrounded by public land such as a National Park or National Grassland.

Kaput-D: An anticoagulent rodenticide manufactured by Scimetrics and permitted for use on black-tailed prairie dogs in 2013. The active ingredient is diphacinone.

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

National Agriculture Imagery Program (NAIP) aerial images: A set of aerial images used to survey for occupied prairie dog acreage.

National Environmental Policy Act (NEPA): An environmental protection law passed in 1970. NEPA requires all executive federal agencies to prepare environmental assessments (EAs) or environmental impact statements (EISs), which are analyses of the potential impacts of proposed activities. These reports state the potential environmental effects of proposed federal agency actions and are used to determine whether a project may proceed. NEPA includes a pubic comment process, and is purely procedural in nature. For the full text of the law, see 42 U.S.C. §§4321-4370h.

Non-lethal management: In prairie dog conservation, any method of dealing with human/prairie dog conflict that is not fatal to the prairie dog; includes but is not limited to barrier installation, passive relocation, relocation, translocation, and birth control.

Occupancy model: A statistical model that produces unbiased estimates of an area occupied by a species and related parameters.

Occupied acreage: The number of acres occupied by prairie dogs at a given time. Usually collected via ground surveys, aerial surveys, or aerial imagery analysis. This is historically the most common metric used to estimate the size of prairie dog populations. However, surveys from different times, using different methodologies, may not be directly comparable. Occupied acreage surveys are not comparable to occupancy models, as they measure different parameters.

Passive relocation: A non-lethal management method that uses one-way barriers to exclude prairie dogs from burrows, which are subsequently closed, in order to shift prairie dogs away from construction sites, roads, or other hazards.

Rangeland Health Standards (RHS): Standards used by the Bureau of Land Management (BLM) to measure rangeland health, *i.e.* the degree to which the integrity of the soil and ecological processes of rangeland ecosystems are sustained.

Relocation: Human-facilitated capture and movement of an animal or animals from one place to another.

Resource Management Plan (RMP): A planning document explaining how the BLM will manage areas of public land over a period of time (generally 10-15 years). BLM Field Offices or District Offices prepare RMPs and amendments to them for the lands under their management. RMPs establish goals

and objectives for resource management and the measures needed to achieve these goals and objectives.

Rozol: An anticoagulent rodenticide manufactured by Liphatech and permitted for use on black-tailed prairie dogs in 2012. The active ingredient is chlorophacinone.

Safe Harbor Agreement (SHA): A voluntary agreement involving private or other non-federal property owners whose actions contribute to the recovery of species listed under the ESA. In exchange for actions that contribute to the recovery of listed species on non-federal lands, participating property owners receive formal assurances from the U.S. Fish and Wildlife Service (USFWS) that if they fulfill the conditions of the SHA, the USFWS will not require any additional or different management activities by the participants without their consent. At the end of the agreement period, participants may return the enrolled property to the baseline conditions that existed at the beginning of the SHA.

Scoping: An open public comment period that initiates federal agency planning processes.

Split estate: A situation in which the surface rights and the subsurface rights—such as mineral development rights—on a piece of land are owned or administered by different parties, often one public and one private.

State: In this report, "state" refers to the assemblage of management agencies that influence prairie dog management in a single state, including the wildlife agency, the department of agriculture, the wildlife commission, and in some cases federal agencies, the state legislature, the courts, counties, or municipalities.

Sylvatic plague: A disease caused by *Yersinia pestis*, a pathogen introduced to North America in the early 1900s. The disease has spread throughout the majority of prairie dog range and is always present on the landscape at low, almost undetectable levels. Prairie dogs have no natural immunity to plague, and an outbreak can rapidly cause 99 percent or higher mortality in a colony. Also referred to simply as "plague" in this document.

Sylvatic plague vaccine (SPV) trials: For years, the only way to prevent plague outbreaks in prairie dog colonies was to kill the fleas carrying the plague bacteria by applying a dust insecticide in prairie dog burrows. A promising new approach—an oral plague vaccine for prairie dogs delivered via a peanut butter-flavored bait—is currently undergoing field-testing on prairie dog colonies throughout prairie dog range. If successful, the vaccine could become an important tool for mitigating one of the most devastating threats to prairie dogs. The third year of vaccine trials is complete and data is currently being digitized and analyzed. There will be another field trial in summer 2016 at selected locations.

Take: Under the Endangered Species Act, "take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" toward a species protected under the law.

Translocation: Human-facilitated capture and movement of animals from historically occupied suitable habitat to another historically occupied suitable site for conservation purposes. In the context of prairie dog conservation, translocation is used to reestablish colonies.

Visual barrier: As prairie dogs tend to avoid areas where their field of view is restricted, visual barriers including vegetative barriers can minimize prairie dog dispersal into areas where they are not wanted.

Western Association of Fish & Wildlife Agencies (WAFWA): An organization representing 23 states and Canadian provinces in western North America. WAFWA was formed in 1922 to collectively address game management issues and maintain state sovereignty over game management.

Zinc phosphide: A rodenticide used to kill prairie dogs. Usually spread on colonies in the form of poisoned oats.

Background

Four species of prairie dog live in the United States: the black-tailed, white-tailed, Gunnison's, and Utah prairie dog. The fifth species, appropriately named the Mexican prairie dog, is found only in Mexico. Prairie dogs only inhabit about 1 to 2 percent of their former range (Slobodchikoff et al., 2009, p. 3), and with the loss of prairie dogs comes the demise of the complex ecosystem that prairie dogs create and maintain. As a "keystone species," prairie dogs have unique, transformative effects on grassland ecosystems that are disproportionately large relative to their abundance (*see e.g.,* Miller et al. 1994; Bangert & Slobodchikoff, 2006; Davidson & Lightfoot, 2006). These social, burrowing mammals (members of the squirrel family) fertilize and aerate the soil and clip foliage, creating shorter but more nutrient-rich plants (*see e.g.,* Whicker & Detling, 1988; Augustine & Springer, 2013; Sierra-Corona et al. 2015). Large herbivores including pronghorn, bison, and cattle often prefer to graze on prairie dog towns (Hoogland et al., 2006, p. 80; Sierra-Corona et al., 2015, p. 11). Prairie dog burrows provide homes and shelter for numerous mammals, birds, reptiles, amphibians, and invertebrates, many of who are likewise imperiled. Prairie dogs are an important food source for a wide variety of species including hawks, eagles, coyotes, foxes, badgers, and extremely rare and critically imperiled black-footed ferrets (*see e.g.,* Martínez-Estévez et al., 2013; Davidson et al., 2012; Miller et al., 1994). Black-footed ferrets are prairie dog obligates, meaning their diet consists almost entirely of prairie dogs and they cannot survive in areas where prairie dogs are not present (Davidson et al., 2012, p. 484). They are listed as "endangered" under the Endangered Species Act.

The Grading System

We evaluate U.S. state and federal agencies that manage prairie dogs on their past year's performance in restoring and protecting prairie dogs and their habitat. We use a four-point grading system. An "A" or 4.0 signifies excellent performance; an "F" or 0 is a failing grade. We use seven categories to determine final grades, modeled on the Endangered Species Act's five criteria for determining a species' eligibility for federal protections. Each category is given a whole-number grade, with F corresponding to 0.0 and A corresponding to 4.0. The final grade is the average of the category grades.

1. **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.

2. **Prairie dog conservation, restoration, and management (Conserve):** The extent to which federal and state agencies follow or are progressing toward developing and implementing final conservation plans, and actively working to recover and protect prairie dogs via research, relocation, translocation, or other means.

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

Sometimes more than one agency within a state develops and implements prairie dog policies. Differing designations across agencies in the same state can cause management conflicts, mixed messages, and contradictory actions. Each state's grade in *Report from the Burrow* reflects the effect of these policies as a whole, not just the actions of the state wildlife agency.

The Report Card

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

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

Background. The BLM manages vast expanses of our public lands across the West, including Gunnison's, Utah, and white-tailed prairie dog habitat. The BLM also manages a small portion of black-tailed prairie dog range. In general, State Game and Fish Departments regulate shooting and poisoning on federal lands, while the BLM and Forest Service manage habitat. Therefore few BLM-administered lands have shooting restrictions. The BLM controls the oil and gas leasing program for most federal lands and some state and private lands; BLM offices have varying levels of protection for prairie dog colonies on oil and gas leasing sites, but oil and gas development potentially impacts prairie dogs through habitat destruction and fragmentation. The BLM also leases land for livestock grazing in prairie dog range, but it is unclear how much this impacts existing colonies. Prairie dogs may be poisoned or shot on BLM lands due to perceived competition with livestock. Specific BLM Resource Management Plans (RMPs) may include guidelines for prairie dog management but the agency generally takes a hands-off approach. The BLM funds sylvatic plague vaccine trials.

The BLM has gotten overall grades in the C range throughout the duration of the report. These average grades reflect that some BLM offices do little to conserve prairie dogs or have little authority over prairie dog management, while other offices work cooperatively with other agencies to restore habitat, undertake plague vaccine trials, or conduct other conservation projects.

Monitor (C). The BLM does not monitor as intensively as other agencies, but partners with them in some states to investigate acreage estimates or occupancy modelling.

Conserve (C). Three BLM regions manage one or more prairie dog species as "sensitive" species, and several include protective measures for prairie dogs in their Resource Management Plans (RMPs). Poisoning or other control methods are prohibited for "sensitive" species on BLM-administered public lands.

Habitat (C). The agency receives an average grade in this category because in addition to allowing destructive livestock grazing and oil and gas leasing, there are BLM offices undertaking habitat restoration projects that benefit prairie dogs. Several BLM Land Use Plans have Controlled Surface Use stipulations for oil and gas leasing to avoid prairie dog habitat.

Plague (C). Several BLM offices, in particular Colorado, Utah, and Wyoming, have done extensive plague mitigation or participate in plague vaccine trials. Other offices do little or nothing in the way of plague mitigation. This mix of management styles gets the agency the average grade of C in this category.

Poison (C). Most regions have no limits on poisoning, but the three regions where prairie dogs are managed as "sensitive" species prohibit poisoning on BLM-administered public lands.

Policies (C). Despite multiple proposals, the BLM has failed to designate more areas of Areas of Critical Environmental Concern (ACEC) for prairie dogs which include proactive measures to conserve and maintain the species.

Shooting (F). The agency receives an F in this category because it rarely uses its authority to close lands to shooting, instead deferring to state regulations.

BLM regions are described in more detail below. Each region has a number of field offices that often differ in their approach to prairie dog conservation. Where available, we have included information on individual field offices.

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

Colorado. The BLM coordinates with Colorado Parks & Wildlife on conservation efforts such as prairie dog surveys, sylvatic plague dusting, and/or sylvatic plague vaccine trials in Gunnison and black-tailed prairie dog colonies. All three species of prairie dog in Colorado are managed by the BLM as "sensitive species." For any proposed action on BLM land, potential impacts to sensitive species are considered during the project's planning phase.

The Kremmling Field Office mapped over 1,100 acres of white-tailed prairie dog colonies, including three new towns. This field office also oversees a sylvatic plague vaccine (SPV) trial site on ~3,000 acres of white-tailed prairie dogs. Additional mapping is scheduled for 2016. The White River Field Office has requested funding for white-tailed prairie dog surveys and associated species, planned for 2017. The San Luis Valley Field Office has discovered several new Gunnison's prairie dog colonies, and will survey during the 2016 field season. The Tres Rios Field Office did not conduct surveys, however observations suggest that prairie dog populations in the Field Office are increasing and have not been impacted by plague.

The BLM partnered with Colorado Parks & Wildlife to dust and map prairie dog populations in the San Luis Valley, and no new plague outbreaks were detected. The BLM dusted 12,943 burrows in seven Gunnison's prairie dog colonies on 801 acres. The Kremmling Field Office dusted ~3,000 acres of white-tailed prairie dog habitat on BLM and USFS lands in the North Park Region in cooperation with Wildlife Services in the summer of 2015. In the Gunnison Basin, the BLM dusted 8,501 burrows in nine Gunnison's prairie dog colonies on 463.1 acres. In the Royal Gorge Field Office, the BLM dusted three Gunnison's prairie dog colonies on 194 acres.

Montana, North Dakota, and South Dakota. The BLM manages black-tailed and white-tailed prairie dogs as "sensitive species" in all three states and specific management actions are determined by the applicable RMP. Montana's HiLine District Office RMP, approved in 2015, does not include any management measures or conservation guidelines for prairie dogs.

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

New Mexico. Both species of prairie dog resident in New Mexico are unregulated by the New Mexico Department of Game & Fish (NMDGF). Because the state does not consider either species "small game," NMDGF does not have the authority to issue regulations on prairie dog shooting such as bag limits or seasons, or to enforce protective measures suggested by the BLM. Application of poison on BLM-administered public lands in New Mexico requires a permit from the State of New Mexico. Between 2009 and 2014, the Rio Puerco BLM Field Office translocated Gunnison's prairie dogs from

the City of Santa Fe into an existing colony on the El Malpais National Conservation Area and is currently monitoring the project's success. The current draft RMP includes shooting restrictions during breeding season on "identified augmented prairie dog areas," which would include the El Malpais translocation site. Other than dusting and quarantining translocated prairie dogs, the New Mexico BLM has not done any plague management. The Farmington Field Office is working to mitigate impacts of oil and gas drilling on Gunnison's prairie dog towns. The draft TriCounty RMP was released in summer 2013 and includes a proposed Area of Critical Environmental Concern (ACEC) adding protections for most of the prairie dog towns on Otero Mesa east of McGregor Range. The Roswell Field Office maintains a geodatabase identifying known prairie dog colonies locations in order to assess potential conflicts with other uses of public lands. The Field Office reviews proposed projects on public lands to make sure that prairie dog habitat is considered and protects known habitat by "avoidance" of developments in and near colonies. The 1997 Approved Roswell Resource Area RMP states that poisoning prairie dogs is prohibited on public lands except in cases of health emergencies.

Gunnison's prairie dog. Photo: Sandy Nervig

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

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

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

Utah. The Utah BLM manages Gunnison's and white-tailed prairie dogs as "sensitive species." The BLM in Utah works cooperatively with other agencies on habitat restoration for the Utah prairie dog. The BLM completed a National Environmental Policy Act (NEPA) process for a programmatic preventative plague-dusting project on BLM lands across Utah prairie dog range. The BLM has also conducted habitat improvement projects on several sites. Cedar City, Vernal, and Richfield Office BLM-administered public lands host sylvatic plague vaccine trial sites.

Protective and proactive measures to enhance prairie dog conservation are included in several RMPs and include controlled surface use requirements, seasonal restrictions to surface disturbing activities, and requirements to coordinate with Utah Division of Wildlife Resources on population and habitat inventories, monitoring, and relocations. The BLM Land Use Plan applies buffers for development around active colonies to help alleviate habitat fragmentation; however, exemptions are usually applied if there is no alternative to the proposed development. The Utah BLM also utilizes management recommendations and population monitoring strategies from the multi-agency Gunnison's and White-tailed Prairie Dog Management Plan (Lupis et al., 2007).

The Vernal Field Office in Utah manages only white-tailed prairie dogs; in 2015 the Office conducted density surveys on ~50,000 acres of white-tailed prairie dogs. In addition to the State's seasonal shooting closure (April 1 to June 15), ~50,000 acres in northeastern Utah is closed to shooting year-round within the black-footed ferret reintroduction area and plague vaccination trial site in Coyote Basin. The Vernal Field Office is also currently focusing on a grazing allotment—densely populated with prairie dogs and potentially ferrets—that is not meeting Rangeland Health Standards. Alternatives within the new grazing permit will be geared toward prairie dog conservation with habitat enhancements. The new permit is scheduled for completion within the next several years.

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

F U.S. Environmental Protection Agency (EPA)

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

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

enforcement of label restrictions. In August 2013, the EPA approved the anticoagulant Kaput-D, manufactured by Scimetrics, for exterminating black-tailed prairie dogs in the same ten states where Rozol use is permitted.

The EPA gets an F overall for approving highly toxic chemicals to kill prairie dogs. The agency is only graded in the Policy and Poisoning categories, as the agency does not manage any habitat, create species management plans, or participate in monitoring or plague management.

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

Background. Of the federal agencies graded in this report, the National Park Service has the most restrictions on land uses. Mining, oil and gas development, logging, grazing, and other types of development are prohibited on NPS-administered public lands, ensuring some of the highest levels of habitat protection. In regards to prairie dogs specifically, recreational shooting is prohibited, and poisoning is very restricted.

However, NPS's contribution of protected acreage to prairie dog conservation is relatively small, since NPS lands cover a small percentage of lands in prairie dog range and NPS manages mostly small prairie dog colonies. Collectively, parks had 14,576 acres of prairie dogs in 2008 (Licht et al., 2009, p. 87). A more recent total acreage estimate is not available. Historically, 20 NPS units hosted prairie dog colonies (one other, Little Bighorn Battlefield, has prairie dogs adjacent to the park but only occasional occurrences within the park). Today, 18 NPS units are occupied by prairie dogs; plague eliminated the colonies at Sand Creek Massacre National Historic Site (NHS) in 2009 and those at Bent's Old Fort NHS in 2012.

Monitor (A). Many parks have strong monitoring programs occurring yearly, resulting in an A in monitoring.

Conserve (B). The majority of NPS units have management plans focused on non-lethal management methods.

Habitat (B). Though they protect habitat, NPS units have not undertaken any habitat restoration, with the exception of Scott's Bluff. Petrified Forest has expanded several times since 2007, adding prairie dog habitat to the Park in the process. Since the NPS manages for natural processes and not to promote a single species, the Park Service generally does not engage in habitat restoration for the purpose of increasing one species' population. However, due to strong existing protections, the agency earns a B in this category.

Plague (B). Numerous NPS units undertake proactive plague management.

Policies (A). Almost all NPS policies are very protective of habitat and wildlife. Oil and gas drilling, development, and other habitat-destroying activities are prohibited on NPS lands.

Poison (B). The use of poison is very restricted and only used in extraordinary circumstances. Poisoning may only be undertaken by land managers. The NPS does not use anticoagulent rodenticides due to the potential for inadvertently poisoning other animals.

Shooting (A). Recreational shooting is not allowed on NPS units.

The Parks could improve their overall grade by reintroducing prairie dogs into the two parks where they were extirpated by plague. In addition, creating or finalizing prairie dog management plans emphasizing non-lethal management for all units currently without a management plan could improve NPS' marks. The NPS regions and the 18 units with prairie dogs are profiled below; we provide data from Licht et al. (2009) to give some context for current occupied acreage numbers, but prairie dog acreage tends to fluctuate depending on wet or dry years, so comparisons from 2009 to the present may not reveal trends in occupied acreage.

Midwest Region. The Midwest Region manages NPS-administered public lands within prairie dog range in North and South Dakota, Nebraska, and Kansas.

Badlands National Park. There are an estimated 2,249 occupied acres of black-tailed prairie dogs in Badlands National Park (a 17.6 percent increase from 1,853 acres in 2014). The Park conducts surveys annually, and the next will begin in May 2016.

Badlands National Park was hit hard by sylvatic plague, which reduced the population from about 10,000 acres in 2007, to 9,009 acres in 2008, to 7,100 acres in 2009 (Licht et al., 2009, p. 88). By 2012, the only colonies remaining were in areas where the Park regularly applied DeltaDust. Plague remains the most prevalent factor in prairie dog population fluctuations in the Park.

The Park dusts in cooperation with the adjacent Buffalo Gap National Grassland (U.S. Forest Service Wall Ranger District), and dusted 1,529 acres within the Park in 2015. The Park addresses occasional requests for prairie dog control on a case-by-case basis based on the guidelines in the Park's prairie dog management plan. Poison is potentially allowed in a quarter-mile buffer between Park-administered public land and private land, however the Park prefers to trap and relocate whenever possible.

Fort Larned National Historic Site. Fort Larned had 33 occupied acres of black-tailed prairie dogs in 2009 (Licht et al., 2009, p. 88). No further information is available.

Scott's Bluff National Monument. The Monument had 59 occupied acres of black-tailed prairie dogs in 2009 (Licht et al., 2009, p. 88). Scott's Bluff National Monument monitors acreage, which in 2015 appeared stable at 78 acres in two towns. The Monument restored ~30 acres of prairie on an old home site on the east side and seeded it for vegetation restoration in fall 2015. Prairie dogs are occupying the area, and approximately 20 recorded burrows. Plague was detected in the park during studies from 2009 to 2010 (Mize & Britten, 2016, p. 5).

Theodore Roosevelt National Park. The Park had 1,880 occupied acres of black-tailed prairie dogs in 2009 (Licht et al., 2009, p. 89). The Park maps all prairie dogs colonies annually and in 2015 had 1,316.8 occupied acres park-wide, a six percent increase from 2014. The Park is preparing a prairie dog management plan. Park personnel believe it highly unlikely that the Park will need to use poisoning or shooting for prairie dog management, but the plan will probably include all options. On rare occasions, the Park has used relocation, barriers, and lethal trapping to control prairie dogs near campgrounds or other developed areas, but generally speaking the Park does not intervene in prairie dog colony growth or movement and allows them to expand and contract in response to natural conditions. The Park did not use any lethal control in 2015. Plague was detected in the park during studies from 2009 to 2010 (Mize & Britten, 2016, p. 5).

Wind Cave National Park. Wind Cave National Park maps half its occupied acreage every year. In 2009, 2,800 acres of black-tailed prairie dogs were recorded (Licht et al., 2009, p. 88). Results from 2015 indicate that the Park has ~1,450 acres of prairie dogs. Colonies on Wind Cave have shrunk by 700 to 800 acres over a three- to four-year period, but it is uncertain if this is due to plague, above-average precipitation (above-average precipitation and the resulting taller and denser vegetation may cause prairie dog colonies to contract, as individuals need less territory to provide them with food), black-footed ferret predation, lower numbers of bison grazing on the colonies, or non-native plant expansion. Prairie dogs had to abandon 300 to 400 acres of colonies that were overrun by white horehound (*Marrubium vulgare*), a non-native plant that prairie dogs could not clip fast enough to prevent it from overrunning the colonies.

The Park has conducted flea collections and some fleas have tested positive for sylvatic plague (Mize & Britten, 2016, p. 5), but so far the Park has not had a known outbreak of the disease. Wind Cave, along with the Montana Conservation Corps, dusted ~510 acres of prairie dogs in 2015, and hosts a plague vaccine trial site. The Park also has a black-footed ferret reintroduction site. The prairie dog management plan, signed in 2006, allows lethal control of prairie dogs via shooting by qualified Park staff. No lethal control has been carried out in the Park since 2009. The Park conducts educational programs highlighting prairie ecology. In 2015, over 1,750 individuals took part in prairie night hikes and other programs during which prairie dogs and black-footed ferrets were key topics.

Intermountain Region. The Intermountain Region manages NPS-administered public lands within prairie dog range in Montana, Wyoming, Utah, Colorado, Arizona, Texas, New Mexico, and Oklahoma.

Bryce Canyon National Park. The Park had 290 occupied acres of Utah prairie dogs in 2009 (Licht et al., 2009, p. 90). Bryce Canyon National Park continues its annual celebration of Utah Prairie Dog Day and conducts educational programs in schools in Garfield County, Utah. The Park surveyed colonies in 2015 and found 174 adults in five colonies on 171 acres, an increase from 2014. The Park estimates it has 600 acres of occupied and suitable/potential Utah prairie dog habitat within its borders. The Sunset Colony, which was last active in June 2010, was re-occupied in 2014 by a lone adult. To protect its Utah prairie dogs from plague, Bryce Canyon performs annual dusting of burrows. Three of the five active colonies in the Park were dusted in 2015, and the other two will be dusted in 2016.

Chaco Culture National Historic Park. Chaco Culture National Historic Park had 80 occupied acres of Gunnison's prairie dogs in 2009 (Licht et al., 2009, p. 89). No further information is available.

Curecanti National Recreation Area. Curecanti National Recreation Area (NRA) had 36 occupied acres of Gunnison's prairie dogs in 2009 (Licht et al., 2009, p. 89). Curecanti NRA has recorded plague outbreaks approximately every 10 years since records were first kept in the 1970s. Seven colonies of Gunnison's prairie dogs once occupied the NRA, but plague outbreaks reduced that number to three colonies. The NRA dusts the remaining colonies to protect them from plague.

Devils Tower National Monument. The Monument had 42 occupied acres of black-tailed prairie dogs in 2009 (Licht et al., 2009, p. 88). As of 2015, the monument still has a 40-acre colony of black-tailed prairie dogs, which is so far plague-free (Mize & Britten, 2016, p. 5). Weekly counts are conducted throughout the summer. Devils Tower finalized its black-tailed prairie dog management plan in 2014. The plan provides for an adaptive management approach. Objectives include monitoring and maintaining a healthy prairie dog population, educating the public about prairie dogs, reducing the probability and impact of a plague outbreak, and protecting human health and safety and infrastructure. The plan allows for the prairie dog colony to expand and contract naturally, largely unimpeded. In high

visitor-use areas such as the campground and picnic area, control methods including passive relocation, live-trapping and relocation, barriers, or lethal control could be used to mitigate conflicts. Lethal control will be used only as a last resort. Devils Tower is increasing law enforcement patrols to reduce speed on the highway through the prairie dog town, and installed two temporary speed bumps in 2014 to protect prairie dogs. Devils Tower posted interpretive signs near the colony and rangers give guided talks about prairie dogs.

Dinosaur National Monument. The Monument had 1,700 occupied acres of white-tailed prairie dogs in 2009 (Licht et al., 2009, p. 90). More recent numbers are not yet available; surveys are planned for 2016 and 2017. These surveys will inform a monument-wide prairie dog management plan, which is currently in the initial stages of development. In the meantime, white-tailed prairie dog populations have significantly expanded in the park in the last two years, and prairie dogs have turned up in developed areas including the Green River raw sewage treatment lagoon exclosure. A three-foot-high visual barrier was installed around the lagoon in 2014, and 13 individuals within the barrier were live-trapped and relocated. Because of a lack of suitable relocation sites, prairie dogs in 25 burrows within the exclosure were lethally controlled to prevent damage to the lagoon lining, and the existing visual barrier was reinforced by adding fine-gauge wire mesh fencing two to two-and-a-half feet below ground and attaching it to the barrier. No prairie dogs have been observed within the exclosure since the barrier was reinforced, and the area is monitored weekly. These were the only prairie dogs in the park controlled with lethal methods; in all other developed areas, populations will be managed with non-lethal deterrent and prevention techniques. Plague has not been detected in the Park.

El Malpais National Monument. El Malpais National Monument had 85 occupied acres of Gunnison's prairie dogs in 2009 (Licht et al., 2009, p. 89). A survey of prairie dog towns along the east side of El Malpais NPS and into the adjoining El Malpais National Conservation Area (NCA), managed by the BLM, found 2,743 occupied acres in March 2015. Currently, there are no plans for additional surveys. The Monument does not have a prairie dog management plan, and does not undertake any prairie dog control, either lethal or non-lethal. The Monument has no definitive data on plague in prairie dog populations, and has not managed for plague. The Monument may participate in a sylvatic plague vaccine study in 2016. The Monument is working with the National Conservation Area to support a prairie dog population study by New Mexico State University-Las Cruces in the NCA and possibly on NPS lands in the future. The Monument is studying black-footed ferret reintroduction sites along the east side of the monument and into the adjoining NCA, though no specific sites have been selected.

El Morro National Monument. The Monument had three occupied acres of Gunnison's prairie dogs in 2009 (Licht et al., 2009, p. 89). El Morro is run by the same management team as El Malpais (*see above*).

Florissant Fossil Beds National Monument. The Monument had one occupied acre of Gunnison's prairie dogs in 2009 (Licht et al., 2009, p. 90). No further information is available.

Fossil Butte National Monument. The Monument had 150 occupied acres of white-tailed prairie dogs in 2009 (Licht et al., 2009, p. 91). No further information is available.

Great Sand Dunes National Park and Preserve. The Park had fewer than three occupied acres of Gunnison's prairie dogs in 2009 (Licht et al., 2009, p. 90). No further information is available.

Hubbell Trading Post National Historic Site. Hubbell Trading Post had 10 occupied acres of Gunnison's prairie dogs in 2009 (Licht et al., 2009, p. 90). The Hubbell Trading Post National Historic Site's prairie dog management plan is currently under revision. As of the last survey in 2011, 25 acres in the Historic Site were occupied. Prairie dog control is only allowed if prairie dogs become abundant in agricultural fields or if they present a health and safety risk to employees or the public. There has been no recent evidence of plague on the Historic Site.

Mesa Verde National Park. The Park had three occupied acres of Gunnison's prairie dogs in 2009 (Licht et al., 2009, p. 90). No further information is available.

Petrified Forest National Park. The Park had more than 100 occupied acres of Gunnison's prairie dogs in 2009 (Licht et al., 2009, p. 90). Petrified Forest National Park intends to begin work on a prairie dog management plan in the near future. There are seven active colonies of Gunnison's prairie dogs on the Park as of 2015. The Park added over 4,000 acres in an eastern expansion area in 2013, and surveys of the new area, begun in 2014, will be completed in 2016.

Plague first occurred in the Park in the late 1990s and has returned occasionally since. Park staff survey the prairie dog colonies every summer. The Park is interested in actively increasing prairie dog acreage and is discussing strategies, including becoming a relocation site. The Park does not dust for plague but is investigating whether it will be possible to test known colonies for the presence of the disease within a year.

C+ U.S. Forest Service (USFS)

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

Monitor (A). The majority of Forest Service units with prairie dogs survey their populations regularly, and many survey annually, earning the agency an A in this category.

Conserve (B). Three out of four Forest Service regions with prairie dogs list them as a "sensitive species," meaning they receive special emphasis in planning and management activities on National Forest-administered public lands to ensure their conservation.

Habitat (C). Livestock grazing and oil and gas development are allowed on National Forests, but it is unclear how these activities are impacting existing prairie dog towns beyond the local level. The Forest Service does not have particular policies protecting prairie dog habitat, and thus gets the average grade of C in this category.

Plague (B). Several National Forests impacted by plague have undertaken intensive plague mitigation campaigns, in particular Buffalo Gap, Thunder Basin, and the Rio Grande National Forest. Others, such as the Comanche and Cimarron, have lost large acreages to plague and have not yet done any mitigation. The majority of National Forests at least monitor for plague presence, giving the agency a better-than-average grade in this category.

Policies (C). Some Forests have rewritten policy to allow poisoning; others (and sometimes the same Forests) have banned shooting. Some are actively trying to increase prairie dog acreage; others take a hands-off approach. The mix of management styles gets the Forest Service the average grade of C in this category.

Poison (C). Poisoning is limited and many Grasslands do not undertake poisoning at all. However, the Forest Service was marked down and usually got D's throughout the history of this report for rewriting management plans to allow poisoning, in particular in some of the largest prairie dog towns remaining such as Thunder Basin and Buffalo Gap.

Shooting (D). Only Thunder Basin and parts of the Rita Blanca and Buffalo Gap National Grasslands are closed to shooting.

Forest Service regions and individual National Forests are explored in more detail below.

Rocky Mountain Region. The Rocky Mountain region encompasses Forest Service-administered public lands in the majority of South Dakota and Wyoming and all of Nebraska, Kansas and Colorado. Gunnison's, black-tailed and white-tailed prairie dogs are all listed on the Regional Forester's "sensitive species" list.

The Nebraska and Samuel R. McKelvie National Forests. The Nebraska and Samuel R. McKelvie National Forests and the Buffalo Gap, Oglala, and Fort Pierre National Grasslands are managed under one Forest Plan. The Forest manages part of 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 concentrations of black-tailed prairie dog colonies in the United States.

The National Forest undertakes lethal control in "boundary management zones" between Forest Service land and private land. The Land and Resource Management Plan for the Forests allows the use of zinc phosphide for prairie dog control in response to prairie dogs moving onto adjacent private lands. Poisoning is only allowed within one-half mile of Forest Service-administered public land-private land boundaries on Oglala and Buffalo Gap National Grasslands, and within one-fourth of a mile of the boundaries on Fort Pierre National Grassland. In 2015, the need for control in boundary management zones was determined on a case-by-case basis. The Wall Ranger District controlled 141 acres; Fall River Ranger District controlled 158 acres; Ft. Pierre Ranger District controlled five acres; and the Oglala National Grassland controlled 14 acres. The Forests use managed livestock grazing to encourage prairie dog colony expansion away from Forest boundaries and towards the larger interior sections of the Grasslands. Shooting is regulated by the state of South Dakota; shooters must obtain a license from the South Dakota Department of Game, Fish & Parks, and limit motorized travel to designated Forest Service roads. Management Area 3.63, a designated Black-footed Ferret Recovery Area on the Buffalo Gap, is closed to shooting. Four prairie dog colonies totaling 197 acres outside

Management Area 3.63 are part of the field trials for the sylvatic plague vaccine, and are closed to shooting throughout the trial period.

Buffalo Gap National Grassland completed a land exchange in 2015, trading isolated and difficult to manage Forest Service lands for private inholdings in the Conata Basin. This exchange consolidated habitat for prairie dogs and black-footed ferrets.

The Wall Ranger District of Buffalo Gap National Grassland conducts acreage surveys annually, and in 2015, recorded 9,674 acres. The Wall Ranger District was hit hard by plague in May 2008, when an outbreak caused the loss of over 20,000 acres of prairie dog colonies. Although plague has had a major impact on Wall Ranger District's prairie dog population since then, this year the colonies got a reprieve and none experienced outbreaks. Many colonies that succumbed to plague between 2008 and 2012 are starting to recover. The District, in cooperation with Badlands National Park and USFWS, dusted 499,765 burrows on 10,582 acres to prevent plague. No other districts in the National Forest have dusted due to limited funding and personnel. The District is working with other agencies and NGOs on research projects including conducting sylvatic plague vaccine trials, researching the impacts of plague on small mammals in prairie dog colonies, and testing the long-term effectiveness of DeltaDust.

The Fall River Ranger District of Buffalo Gap National Grassland mapped a portion of the District's active prairie dog acreage in 2015, and inventoried a new area; the total acreage for the District is estimated at 6,065 acres. The Fall River Ranger District continues to experience isolated plague occurrences, but there was little to no impact in 2015. Plague has had major impacts in this District in the past; larger colonies in particular have been slow to recover or have not recovered at all.

The Fort Pierre Ranger District (of the Grassland of the same name) has not mapped active prairie dogs since 2014; at that time there were 37 colonies on 1,362 acres. The next survey will take place in summer 2016. In 2011, the Fort Pierre Ranger District discovered the loss of two colonies, about 50 acres total, that they suspected had succumbed to plague. In 2012, the District sampled for plague Grassland-wide and discovered that the bacterium was indeed present. Since then, the Grassland has lost ~670 acres and most of the colonies were reduced in size and density. Though it is a prime suspect, it remains undetermined whether or not plague is the primary reason for the reduction in acreage.

On the Oglala National Grassland, the Pine Ridge Ranger District conducts annual acreage surveys, and found a total acreage of 392 acres in 2105. In 2012, the District discovered the loss of a 722-acre colony suspected of succumbing to plague. In 2014, the District conducted flea sampling Grassland-wide, and the results (in 2015) confirmed the presence of the plague bacterium. Since 2012, the Grassland has lost 2,393 acres to plague and most of the colonies have nearly disappeared.

Pike and San Isabel National Forests. The Pike and San Isabel National Forests and the Comanche and Cimarron National Grasslands are managed under one Forest Plan. The Comanche is in Colorado and coordinates with Colorado Parks & Wildlife on some management issues. The Cimarron, a separate block of land in neighboring Kansas, coordinates with the Kansas Department of Wildlife, Parks & Tourism.

Both National Grasslands conduct surveys annually. In 2014, there were 1,253 acres of prairie dogs on the Cimarron and 21,294 acres on the Comanche. The acreage on both Grasslands was reduced significantly due to plague; in 2015 there were only 220 acres of prairie dogs on the Cimarron and 8,933 acres on the Comanche. The Forest has not yet done any plague mitigation. The Forest used non-lethal prairie dog management in one area; the Comanche National Grassland constructed a barrier to keep

prairie dogs from moving onto adjacent private land. On the Comanche, recreational shooting is the only form of prairie dog control currently allowed, and the Grassland office distributes maps for prairie dog shooters. Per Colorado state law, prairie dog shooting on public lands is prohibited from the end of February through June 15. The Cimarron is a popular destination for recreational shooting, which is not restricted under Kansas state law, and the Grassland office distributes maps for prairie dog shooters. The Grassland does not use any other form of prairie dog control.

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

Rio Grande National Forest. The Rio Grande National Forest, which surrounds the San Luis Valley in Colorado, is home to a small population of the montane subspecies of Gunnison's prairie dog. Current estimates using Global Positioning System (GPS) data suggest that the Forest supports eight active colonies that occupy ~350 acres, and populations appear to be increasing. The Forest boundary begins at about 7,800 feet above sea level, meaning the elevation in the majority of the Forest is high even for the montane subspecies of Gunnison's prairie dog. There is more available habitat and thus more prairie dogs present on BLM-administered public lands and private lands at lower elevations. Plague was first detected in fleas at Gunnison's prairie dog colonies in the San Luis Valley in 2011. The arrival of plague to the Valley is suspected to be the primary cause of a population decline beginning in the late 2000s. Since 2012, the Forest has worked in concert with Colorado Parks & Wildlife to dust and map known colonies each year. Plague is now present on nearly all colonies in the San Luis Valley, and the disease is the major limiting factor on prairie dog populations. This year the Forest dusted 5,677 burrows on 310 acres. No poisoning or prairie dog control has occurred on Forest lands, and the Forest avoids providing locations for recreational shooting, which is managed under Colorado state law.

Arapaho and Roosevelt National Forests. The Arapaho and Roosevelt National Forests manage the Pawnee National Grassland. The Grassland surveys prairie dog towns annually in the summer. In 2013 there were 3,003 acres of active towns, and in 2014 that number grew to 3,582 acres. There are several inactive towns that Grassland staff believe were impacted by plague; 660 acres of inactive towns were surveyed in 2013, and 449 acres in 2014. More recent data is not available. The Pawnee National Grassland Black-tailed Prairie Dog Management Plan allows for zinc phosphide poisoning when prairie dogs are moving from the Grassland onto adjacent private land. About 154 acres of prairie dogs were poisoned in 2014. The Grassland also installed a 0.38-mile barrier fence next to a 30-acre prairie dog town, with support from the Arapaho Roosevelt Pawnee Foundation. Recreational shooting is managed under Colorado state law and is extensive on the Grassland.

Medicine Bow-Routt National Forests. The Medicine Bow-Routt National Forests contain Thunder Basin National Grassland in Wyoming, which currently has 27,793 acres of black-tailed prairie dogs (about five percent of the Grassland area, and an increase from 2014). The population has been

A black-tailed prairie dog on the Thunder Basin National Grassland. Photo: Taylor Jones.

growing steadily since 2009. The Grassland carried out prescribed burning for habitat improvement on 1,000 acres, and dusted 1,002 acres to prevent plague. There is a designated Black-footed Ferret Recovery Area on Thunder Basin, and a total of 85,000 acres on the Grassland are closed to shooting; the Grassland installed a variety of new shooting closure signs this year. Grassland personnel have installed two exclosure fences to create vegetative barriers preventing prairie dogs from entering private property, but one was removed a year after installation due to complaints from the adjacent private landowner. The remaining exclosure appears to have been successful at preventing recolonization of the area. The Grassland Management Plan allows prairie dog control with zinc phosphide between October 1 and December 31 in one-mile buffers around residences.

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

Dakota Prairie Grasslands. The Dakota Prairie Grasslands (which are spread out in discontinuous blocks in North and South Dakota and include the Cedar River, Grand River, Little Missouri, and Sheyenne National Grasslands) have prairie dog colonies on the Little Missouri (Medora and McKenzie Ranger Districts) and Grand River National Grasslands. The last survey, in 2012, found 7,740 occupied acres. There are no shooting restrictions, as per North and South Dakota state laws. The presence or extent of plague on the Grasslands is unknown, but it is present on nearby lands in South Dakota and across the western border of the Grasslands in Montana. Per the Dakota Prairie Grasslands Management Plan (Bosworth, 2001), use of zinc phosphide poison is limited to situations where prairie dogs may cause public health or safety risks, damage to infrastructure or facilities, or move from the Grassland onto adjoining lands where they are not wanted. Grasslands staff are using two types of vegetative barriers to prevent unwanted prairie dog expansion onto adjoining lands, and have also experimented with other methods including raptor perches and visual barriers, with limited success. The Grassland Management Plan includes guidelines for increasing prairie dog numbers to support black-footed ferret recovery, and designates an area of the Little Missouri as a Black-footed Ferret Recovery Area. The plan is currently undergoing revisions and is in the scoping stage of the process. Prairie dog acreage is still too low for ferret reintroduction, either on the Recovery Area or outside of it, but if the size of any complex on the Grasslands exceeds 1,500 acres, the Grasslands will consult with the USFWS to determine if reintroduction is appropriate.

Custer-Gallatin National Forest. There is one colony of white-tailed prairie dogs in the Beartooth Ranger District of the Custer-Gallatin National Forest in Montana, and populations of black-tailed prairie dogs on the Ashland Ranger District, which appear stable at ~1,000 acres among roughly 70 towns. The towns' expansion capabilities on the Ashland Ranger District are often limited because they

are on islands of prairie habitat within a forest matrix. The District has surveyed roughly every 10 years. Plague has impacted about half of the towns but rarely if ever causes extirpation. Poisoning is not allowed on the National Forest.

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

Cibola National Forest. The Kiowa and Rita Blanca National Grasslands (in Texas, Oklahoma, and New Mexico) have some of the largest acreages of prairie dogs in the region. Between the late 1990s and 2004, a plague outbreak diminished the black-tailed prairie dog population from ~7,000 to ~1,000 acres. The population began to rebound in 2004. Since 2004, plague outbreaks may have occurred, but none were verified by testing. The Grasslands conduct annual surveys in November. The total acreage for both Grasslands in 2014 was 9,363 acres, with 1,682 on the Kiowa and the rest on the Rita Blanca, about half of which is in the area of Texas known as the High Lonesome. More recent data is not available. There is a general trend of expansion in colony size but density appears to have remained the same; this is probably due to drought.

Prairie dog shooting is allowed on the Kiowa National Grassland in New Mexico under New Mexico Department of Game & Fish regulations and on the Rita Blanca National Grassland in Texas under Texas Parks & Wildlife Department regulations. Three areas on the Rita Blanca in Texas, 515 acres altogether, are test sites for sylvatic plague vaccine trials, and the Forest Service has closed the areas to shooting for the duration of the trials. The Oklahoma Department of Wildlife Conservation does not allow prairie dog shooting on the Rita Blanca National Grassland in Oklahoma. Poisoning is not authorized on the Kiowa and Rita Blanca National Grasslands.

Kaibab National Forest. The Kaibab National Forest in Arizona mapped ~5,700 acres of prairie dog colonies within the Forest (or adjacent if the colony bordered the Forest) on the Williams and Tusayan Ranger Districts in 2014. Approximately 2,000 of those acres occur on private in-holdings and 3,700 acres are on Forest land. This is nearly double the amount of prairie dogs mapped in 2011. As mapping takes place every three years, the next survey will be conducted in 2017, coinciding with mapping efforts by the Arizona Game & Fish Department. Colonies are periodically impacted by plague but appear to rebound. As part of a cooperative effort between the Williams Ranger District, Arizona Game & Fish Department, and Habitat Harmony (a non-profit focused on habitat preservation and prairie dog relocation), the Kaibab National Forest conducted translocations in 2011 and 2012 from a middle school in Williams, Arizona. The Forest requested that the Williams Elementary Middle School install an above- and below-ground barrier around the school prior to any further translocation efforts. The school did so, and in 2015, 415 prairie dogs (34 family groups) were translocated to an extirpated colony on the Williams Ranger District of the Kaibab National Forest. Dusting for plague is part of the Forest's translocation methodology; burrows at the trap site and release site (~100 acres) were dusted.

No poisoning has occurred on Forest lands for at least 50 years, and there are no plans for future poisoning. The Forest has an active grassland restoration program, participates in local prairie dog and black-footed ferret working group meetings, and educates the public on grassland species whenever possible.

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

Santa Fe National Forest. There is no Forest-wide estimate of acreage available, and the Forest has no surveys planned. Plague is not known to be present on the Forest. The Forest does not currently conduct poisoning, population surveys, or plague research or management.

Intermountain Region. The Intermountain Region encompasses Forest Service-administered public lands in Utah, Idaho, and western Wyoming. The Intermountain Region does not list any prairie dog species as "sensitive." Most National Forests in this region are outside of prairie dog range, except for the Dixie and Fishlake National Forests and Ashley National Forest.

Dixie and Fishlake National Forests. Dixie and Fishlake National Forests in Utah manage two Utah prairie dog recovery units (*see* "Utah"): Awapa Plateau and Paunsaugunt. The Forests have been translocating Utah prairie dogs from private lands onto protected colonies in the Forests, and aggressively dusting for plague. In 2014 the Forest translocated 741 Utah prairie dogs from private land in Garfield County onto eight prepared sites in the Powell Ranger District of Dixie National Forest under the Habitat Conservation Plan and ESA section 4(d) permitting process. More recent translocation numbers are not available, but Utah prairie dogs were translocated into the Paunsaugunt Recovery Unit in 2015 (*see* "Utah"). Approximately 7,908 acres in Utah were dusted in 2015, including the Dixie and Fishlake National Forests, the Cedar City BLM Field Office, and parts of Iron County.

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

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

Background. The USFWS is charged with application of the Endangered Species Act (ESA) to terrestrial species. The agency is responsible for preventing wildlife extinctions and takes the lead in recovering and conserving imperiled species, including federally listed "threatened" and "endangered" species. Of the prairie dog species, currently the Utah prairie dog is listed as "threatened" and the Mexican prairie dog is listed as "endangered" (foreign endangered species are primarily managed by the USFWS International Affairs Program, not the Service's Endangered Species Program).

A wide-ranging array of conservation groups and concerned citizens petitioned to have the Gunnison's prairie dog listed under the ESA in 2004. The USFWS placed the "montane" portion of the population on the candidate list in 2008 though it found listing was precluded by other priorities. The courts overturned this decision and required the USFWS to reevaluate the species' listing status, finding the agency had improperly divided the species into two populations. In 2013, after genetic studies

confirmed the existence of two subspecies of Gunnison's prairie dog, the USFWS found both subspecies "not warranted" for listing on the basis of population surveys from the last three to six years and the ability to locally control plague outbreaks in highly managed situations (*see* USFWS, 2013a). Recent research suggests, however, that in addition to known dangers, drought is a serious threat to the "prairie" population of Gunnison prairie dogs. WildEarth Guardians unsuccessfully challenged the negative finding in court.

The USFWS lost a court case in 2014 challenging the agency's refusal to list the white-tailed prairie dog, and must now reconsider the finding. The court held that the USFWS did not adequately consider white-tailed prairie dog range contraction from historic data in analyzing whether the species was threatened or endangered in a significant portion of its range. The USFWS also stated that existing regulatory mechanisms governing oil and gas development were sufficient to protect white-tailed prairie dogs, inconsistent with the agency's statement that oil and gas development poses the most significant threat to the species. Lastly, the court found USFWS discounted threats from off-road vehicle use and toxic chemical leakage from oil and gas drilling because they were deemed individually insignificant. The court found that these threats must be analyzed because of the ways they may interact with other dangers such as development or plague. The court remanded the "not warranted" decision to the agency, meaning that the USFWS must reconsider the available information and reevaluate whether to afford ESA protections.

The USFWS has a long history with black-tailed prairie dogs, receiving four ESA petitions to list the species since 1994 (USFWS, 2009, p. 63,344). The black-tailed prairie dog was added to the list of candidate species under the ESA in 2000, but was removed by the USFWS in 2004; repercussions were immediate. Poisoning on both public and private land immediately resumed, including in some of the largest prairie dog complexes on public lands with reintroduced black-footed ferrets. States passed bills funding poisoning and reclassifying black-tailed prairie dogs as "pests." South Dakota and Colorado removed bans on recreational shooting (Hoogland, 2006, p. 262). Three states began rejecting recommendations from the multi-state conservation plan, and Nebraska halted serious conservation efforts (Hoogland, 2006, pp. 262-263).

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

Monitor (B). The USFWS only monitors prairie dog populations on National Wildlife Refuges, or in partnership with other agencies. The agency collects and compiles historic and current monitoring data for use in Endangered Species Act findings and candidate assessment reports. Because it serves as a centralized source of publically available data, the agency gets a B in this category.

Planning and research (D). The USFWS is responsible for creating and implementing the Utah prairie dog recovery plan. Despite acknowledging that the three unlisted prairie dog species have all lost over 90 percent of historic occupied habitat, the agency has resisted listing them under the ESA.

Habitat (B). In addition to making Endangered Species Act decisions, the USFWS also administers the National Wildlife Refuge System, a network of protected areas established for the conservation and management of fish, wildlife and plant resources. The USFWS only manages habitat in Wildlife

Refuges. Though mainly established with a focus on conserving migratory birds and/or listed species, some refuges host prairie dog populations and several conduct notable prairie dog conservation activities. Sevilleta National Wildlife Refuge (NWR) is a reintroduction site for Gunnison's prairie dogs (*see* "New Mexico"). The Wichita Mountains NWR in Oklahoma has a prairie dog viewing area. The Charles M. Russell NWR in Montana is participating in sylvatic plague vaccine field trials on black-tailed prairie dog habitat. The UL Bend NWR, situated within the Charles M. Russell NWR, is a black-footed ferret reintroduction site. The Rocky Mountain Arsenal NWR became a black-footed ferret reintroduction site in 2015.

Plague (C). The USFWS partially funds sylvatic plague studies, which have taken place in seven states over the past three years. The Charles M. Russell NWR hosts a vaccine trial site on a black-tailed prairie dog colony, and Rocky Mountain Arsenal NWR dusts annually. In listing decisions, however, the USFWS has used dusting and the plague vaccine, neither of which can be applied universally across the huge scale of prairie dog habitat, to minimize and dismiss the threat of plague rangewide.

Policies (C). The agency has used numerous ESA rules to manage Utah prairie dog conservation, including Habitat Conservation Plans and Safe Harbor Agreements. Many of these policies are now moot, however, as a Utah court turned management of Utah prairie dogs on private land over to the state (*see* "Utah").

Poisoning (C). The USFWS does not carry out poisoning, but the agency's denial of ESA listing for the black-tailed prairie dog in 2009 likely paved the way for approval of Rozol and Kaput-D as prairie dog poisons. These anticoagulants are the most toxic and cruel poisons on the market, and carry a high risk of secondary poisoning for other animals that scavenge poisoned carcasses.

Shooting (D). The agency historically earned D's and F's in shooting, most due to allowing control via shooting of Utah prairie dogs, which are listed as "threatened." The grade was raised from an F because the 2012 rules for the Utah prairie dog are more restrictive of shooting and make more sense biologically. Unfortunately, a Utah court turned management of Utah prairie dogs on private land over to the state (*see* "Utah"), which has instituted a less restrictive plan. The USFWS is appealing the decision.

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

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

Some states require landowners—including federal land management agencies—with prairie dog colonies to prevent expansion of those colonies onto adjacent properties; this is referred to as "boundary management." Boundary management is also conducted via lethal control adjacent to properties enrolled in the Natural Resources Conservation Service's black-footed ferret Safe Harbor program, which incentivizes establishment and preservation of prairie dog colonies on private lands.

Prairie dog control carried out by WS is done for boundary management purposes, because of conflict with agriculture or other land uses, or because of human health and safety concerns.

WS is a member of the Black-Footed Ferret Recovery Implementation Team. WS representatives chair the prairie dog management subcommittee and co-chair the sylvatic plague vaccine subcommittee, comprised of 25 agencies and tribes involved in research on the oral vaccine for prairie dogs. Plague mitigation, carried out via application of DeltaDust to prairie dog burrows, is usually carried out in support of black-footed ferret recovery efforts. In addition, Wildlife Services' National Wildlife Research Center is a member of the Black-Footed Ferret Executive Recovery Committee and provides technical assistance on technology transfer and registration issues for the sylvatic plague vaccine.

WS is not graded in the Monitor, Policy, or Habitat categories, as the program does not administer any land, promulgate policy, or participate in population surveys.

Conserve (D): WS provides technical assistance and recommends management alternatives to entities experiencing damages caused by prairie dogs. Impacted resource owners sometimes employ non-lethal methods requiring habitat manipulation such as fencing (*e.g.* Oklahoma, *see below*). When cooperators do not choose to use non-lethal methods, or non-lethal methods are unsuccessful, WS may be requested to apply lethal control methods such as rodenticide application or shooting (*see* Table 1).

Poison (F). The agency gets an F in this category as primary management activities include using poisoning and fumigation as forms of control (*see* Table 1).

Plague (A). Aside from lethal control, the program's main role in prairie dog management is plague mitigation in support of black-footed ferret reintroduction. In 2015, WS dusted more than 11,500 acres. These projects and others are discussed state by state in more detail below. In coordination with the U.S. Geological Survey (USGS), WS works to coordinate plague vaccine trials between the USGS, cooperating states, and potential partners in Mexico. With the USGS and Arizona Game & Fish Department, WS provided labor and resources for plague vaccine trials in seven states over the past three years. If the plague vaccine is successful, WS will have a primary role in developing distribution strategies due to the program's extensive experience with rabies oral vaccine distribution in the U.S.

Shooting (F). The agency gets an F in this category as primary management activities include using shooting as a form of prairie dog control (*see* Table 1).

Table 1. Prairie dog management actions undertaken nationwide by Wildlife Services (WS) in fiscal year 2014 (the most recent year in which WS data has been verified and approved for dissemination).

Species	Technical assistance projects*	Number removed by shooting	Number of burrow entrances fumigated or treated with zinc phosphide bait				Number dispersed
			Aluminum phosphide	Gas cartridge	Zinc phosphide	Total	
Black-tailed	74	15,698	33,121	188	0	33,309	429
Gunnison's	258	202	35,875**	271	0	36,146	0
White-tailed	4	11	4,128	0	0	4,128	0

**Includes personal, written, or telephone consultations, instruction sessions, or site visits. Note: Relocations would only be included in this table if WS trapped and relocated the prairie dogs, not if WS recommended relocation and the cooperators relocated the prairie dogs.*
***The increase from 2013 is due to management for human health and safety at an airport and military airbase. After several years of unsuccessful relocation efforts, prairie dogs were fumigated due to a zero-tolerance policy in the aviation safety zone.*

Conservation Projects

Arizona. In partnership with the Arizona Game & Fish Department, WS treated 455 acres of prairie dog colonies in northern Arizona at a black-footed ferret reintroduction site. WS conducts ongoing disease monitoring at this site. In March 2015, Arizona WS staff assisted the state natural resources agency in capture-examine-release efforts at the three reintroduction sites for black-tailed prairie dogs in the Las Cienegas National Conservation Area.

Colorado. WS received cooperative funding from county, state, and federal cooperators to dust ~8,000 acres on six sites. Four of these sites had or currently have black-footed ferrets. In October 2015, WS participated in black-footed ferret releases at the Rocky Mountain Arsenal National Wildlife Refuge.

Montana. In anticipation of black-footed ferret releases, WS dusted 3,092 acres of prairie dog colonies on two sites—one on private property and the other on Crow Nation lands—in cooperation with Montana Fish, Wildlife & Parks, the National Fish & Wildlife Foundation, World Wildlife Fund, and USFWS. In October 2015, WS staff participated in a black-footed ferret release on Crow Nation lands. In 2014, WS contributed the salaries of seven biologists, and in 2015 the agency contributed $10,000 in in-kind employee pay costs to the effort.

Oklahoma. WS worked with the USFS and state, local, and private groups to build 1,400 feet of buried fencing to exclude black-tailed prairie dogs from a rural community cemetery. The fence protected the cemetery and ameliorated the need for lethal control.

Texas. WS supported sylvatic plague vaccine trials on black-tailed prairie dog colonies in the Texas Panhandle by assisting with annual surveys, distributing vaccine-laden baits, and monitoring after bait distribution, which requires trapping and handling of prairie dogs to determine bait uptake and development of plague antibodies.

Utah. WS cooperates with the Utah Division of Wildlife Resources and the BLM to monitor for plague and other carnivore diseases in black-footed ferret reintroduction areas and potential reintroduction areas in northeastern Utah.

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

Background. Arizona once had between 650,000 and ~1.4 million acres of black-tailed prairie dogs, but they were extirpated by poisoning campaigns by 1940 (USFWS, 2009, p. 63,346). Since 2008, the Arizona Game & Fish Department (AZGFD) has worked to reintroduce black-tailed prairie dogs on BLM-administered public lands and state trust lands within the Las Cienegas National Conservation Area. The AZGFD, in cooperation with the BLM, has made habitat improvements, dusted annually to prevent plague, and prohibited shooting on the reintroduction site.

Arizona once had ~6.6 million acres of Gunnison's prairie dogs (USFWS, 2008, p. 6,664). The AZGFD mapped 108,353 acres of Gunnison's prairie dogs in Arizona in 2007 (excluding tribal land: this number was a minimum count) (Underwood, 2007, p. 21). The state resurveyed Gunnison's prairie dog colonies in 2011 and mapped 109,402 occupied acres. Arizona is about 40 percent public lands, giving the Department more management flexibility than other states with mostly private lands.

Monitoring (A). The three reintroduced black-tailed prairie dog colonies in Las Cienagas National Conservation Area are mapped yearly, and are monitored monthly and more intensely after releases of new prairie dogs. In 2015, AZGFD conducted three population surveys in addition to monthly monitoring in order to collect demographic data and assess the health of the colonies. The 2015 acreage survey yielded 32.5 acres of occupied habitat, an increase of 15.1 acres from 2014. The next trapping surveys will begin in March 2016.

Survey results from 2014 and 2015 indicate that Gunnison's prairie dogs occupy 69,325 acres (excluding tribal lands). The decline since 2011 can be explained by plague at Espee Ranch and reduced densities in Aubrey Valley, as well as the implementation of a new, more accurate survey methodology. AZDGF will conduct occupancy surveys for Gunnison's prairie dogs in 2016 in conjunction with Colorado, New Mexico, and Utah. Regular monitoring of both species earns the state an A.

Conserve (A). Arizona has a draft management plan for black-tailed prairie dogs (Underwood & Van Pelt, 2008). The goal of the plan was to restore 7,100 acres by 2011, 1,000 of those acres on BLM-administered public lands (Underwood & Van Pelt, 2008, p. 30). This goal is far from being met, though the Department is actively restoring black-tailed prairie dogs and their habitat. The Department also used relocation instead of lethal methods to remove dispersing black-tailed prairie dogs from private lands; all dispersing individuals were successfully trapped and relocated.

Arizona has a completed management plan for Gunnison's prairie dogs. The goal of the plan is to recover 75 percent of the area occupied in the early 1900s before major poisoning campaigns began (Underwood, 2007, p. 27). The Department provided resources to several entities relocating Gunnison's prairie dogs in 2015, including Liberty Wildlife Rehabilitation, who translocated 29 Gunnison's prairie dogs from Iberdrola Renewables Wind Farm to the White Mountains Grassland Wildlife Area, and the Kaibab National Forest, who translocated 415 Gunnison's prairie dogs from an activity field at Williams School District to abandoned colonies within the Forest.

The Arizona Gunnison's Prairie Dog Working Group completed a translocation protocol, which provides guidance to those considering translocating prairie dogs. The protocol includes information on disease management, trapping procedures, and permitting.

The AZGFD funded the University of Arizona (UA) to conduct survivorship and genetics research on black-tailed prairie dogs. Survivorship research provides the AZGFD with information to guide future management decisions for successful re-establishment. UA researchers have been collecting genetic samples from black-tailed prairie dogs across their range to create a comprehensive genetic analysis; this analysis will help pick future donor sites in order to more closely mimic the genetic variability of black-tailed prairie dogs that historically occurred in Arizona before extirpation. UA researchers have collected samples across the range and from Arizona museums so historic genetic material from Arizona can be included. Due to their reintroduction work and genetics research for black-tailed-prairie dogs, Arizona receives an A in this category.

Habitat (B). The AZGFD established a new black-tailed prairie dog reintroduction site on Sands Ranch near Sonoita. In partnership with Pima County, the AZGFD removed invasive mesquite and restored the grasslands in fall 2015. They installed 25 artificial burrow systems, and the site is ready to accept prairie dogs when translocation plans are finalized. The AZGFD anticipates reestablishment of black-tailed prairie dogs at the new site before fall 2016.

The three existing black-tailed prairie dog colonies in Arizona are restricted in size by invasive mesquite. The AZGFD and the BLM continue work to restore nearly 700 acres of grassland surrounding the colonies by removing mesquite, rehabilitating the soil, and managing prescribed burns. The BLM has so far restored 329 acres and is scheduled to complete restoration of the remaining acreage by June 2017. Because of active habitat restoration for black-tailed prairie dogs, the state receives a B in this category.

Plague (B). AZGFD dusts the entire black-tailed prairie dog population on a semi-annual basis to prevent plague.

The Espee Ranch is home to the only field trial site for the sylvatic plague vaccine in Arizona. 2015 was the third year of the vaccine trial at a pair of 50-acre sites on Gunnison's prairie dog colonies on the Ranch. A fourth year of field trials will be conducted in 2016 as well as research on bait distribution patterns and timing of bait delivery.

Plague has been detected at Espee Ranch; ~170 acres were dusted in 2015. An additional 29 acres were dusted on the White Mountains Grassland Wildlife Area. Plague has also been detected at Picture Canyon Nature Preserve northeast of Flagstaff. The Department donated DeltaDust to Coconino County to aid in the dusting of 102.62 acres in Picture Canyon in 2015.

The combination of dusting to prevent plague in both species and hosting an SPV trial site earned Arizona a B in this category.

Policies (C). Black-tailed and Gunnison's prairie dogs are both designated "non-game" and "species of greatest conservation need" by the AZGFD. The state gets an average grade in this category as there are no known policies particularly injurious or beneficial to prairie dogs.

Poison (B). Poisoning black-tailed prairie dogs is prohibited. The state does not limit poisoning of Gunnison's prairie dogs. However, the AZGFD does not participate in poisoning and prohibits the use of anticoagulants including Rozol and Kaput-D. Limitations on or prohibition of Gunnison's prairie dog poisoning could raise the state's grade to an A in this category.

Shooting (B). Shooting black-tailed prairie dogs in Arizona is prohibited. Shooting Gunnison's prairie dogs in Arizona is allowed with the exception of a spring closure during the breeding season from April 1 to June 15. The combination of a seasonal closure on one species and a total closure on the other earned Arizona a B in this category.

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

Background. Colorado once had between three million and seven million acres of black-tailed prairie dogs, which shrank to a historic low of 96,000 acres in 1961 (USFWS, 2009, p. 63,346). There were about 6 million acres of Gunnison's prairie dogs in Colorado in 1916; by 1961 there were just 116,000 acres (USFWS 2008, pp. 6,664-6,665). In 2002, Colorado supported ~151,547 acres of Gunnison's prairie dogs (USFWS 2013, p. 68,668). No estimate of historic white-tailed prairie dog range is available (USFWS, 2010, p. 30,342).

Monitoring (A). Colorado Parks & Wildlife (CPW) reported the state had ~800,000 active acres (plus or minus ~80,000 acres) of black-tailed prairie dogs in 2006 using aerial surveys. The next survey is planned for summer 2016.

White-tailed prairie dog. Photo: Sam Parks.

Surveys were completed in 2005, 2007, and 2010 for Gunnison's prairie dogs, showing a stable statewide occupancy rate (these occupancy model results are not comparable to counts of occupied acreage; see the Glossary for more details). CPW conducted surveys for white-tailed prairie dogs in 2004, 2008 and 2011. The results from the 2004 and 2008 surveys showed that populations were stable across the state, and the analysis for 2011 data suggest stability except in the northwestern portion of the study area, where the population appears to have decreased due to plague (Seglund, 2012, p. 8). The next occupancy surveys for Gunnison's and white-tailed prairie dogs will be completed in 2016.

Colorado's monitoring grade took a hit in the past due to controversies around the accuracy of the 2006 black-tailed prairie dog estimate (*see* White et al., 2005a *and* 2005b; Miller et al. 2005); the argument was particularly heated because the new high estimate contributed to the USFWS' denial of a 2007 petition for listing. However, for the past decade Colorado has been developing monitoring strategies for all three species, and continues to consistently implement statewide surveys for all three species. It therefore gets high marks in this category with an A.

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

Colorado is not a signatory to the 1999 Multi-state Conservation Plan for the Black-tailed Prairie Dog; rather. However, Colorado signed an intrastate Memorandum of Understanding for Prairie Dog Management with several federal agencies in 2000. Colorado follows the Conservation Plan for Grassland species in Colorado (which supports the goals of the Multi-state Plan), finalized in November 2003 (USFWS, 2004, p. 25).

Colorado has also been involved in genetic research; in collaboration with the University of Colorado at Boulder, CPW determined that there is strong scientific support for the conclusion that there are two subspecies of Gunnison's prairie dog: *Cynomys gunnisoni gunnisoni* and *C. g. zuniensis* (*see* Sackett et al., 2014).

Habitat (B). In 2014, the USDA's Natural Resources Conservation Service introduced a Black-footed Ferret Incentive Program in Colorado, which pays private landowners a per-acre fee to manage their rangeland for black-footed ferrets and conserve prairie dog towns. Three new applications were approved in 2015, raising the enrolled acreage to 17,500 acres, of which 12,000 acres are active prairie dog towns. Enrolled acres are closed to poisoning and shooting. Colorado has six active black-footed ferret release sites in black-tailed prairie dog range; two were newly established in 2015, and ferrets were released into five sites. The large amount of habitat conserved via this program earns the state a B.

Plague (A). There is no statewide monitoring program for plague in black-tailed prairie dogs; however, CPW manages plague at black-footed ferret release sites. In 2015, CPW partnered with the City of Fort Collins to dust over 1,000 acres of black-tailed prairie dog colonies at the Soapstone Prairie Natural Area black-footed release site. CPW also partnered with USDA-APHIS and USFWS to dust an additional ~2,500 acres at two black-footed ferret release sites in southeastern Colorado.

CPW continues to proactively manage plague on Gunnison's prairie dog colonies. In 2015, CPW dusted over 2,927 acres in South Park, Gunnison, San Luis Valley, and the southeast portions of the Gunnison's prairie dog range.

In 2015, CPW continued sylvatic plague vaccine trials on three pairs of study areas (six sites) on black-tailed prairie dog colonies. Trials were also continued on three pairs of study sites on Gunnison's prairie dog colonies. This third year of the study appears successful; trials will continue into 2016 and will be expanded to include landscape-scale adaptive plague management experiments, testing both dusting and the vaccine on larger scales and testing methods of vaccine distribution.

In coordination with the plague vaccine trials mentioned above, CPW's Avian Research Group initiated a study in 2013 on the impacts of plague management on avian species associated with both Gunnison's and black-tailed prairie dog colonies. The Group has collected three years of data on a variety of birds, plants, and mammalian carnivores. These data will support short-term goals of determining avian species associations with Gunnison's prairie dogs and documenting the responses of associated species to plague outbreaks. Additional years of monitoring will allow the Group to detect changes in the avian community caused by plague management, particularly if vaccinated and un-vaccinated prairie dog colonies begin to show differences in survival.

Due to proactive plague dusting and management, as well as hosting vaccine trials in several locations and conducting plague research, Colorado gets an A in this category.

Policies (C). The three prairie dog species calling Colorado home are designated as "small game" by the state. Under the state's Comprehensive Wildlife Conservation Strategy, all prairie dog species are listed as "species of greatest conservation need." In contrast, the Colorado Department of Agriculture designates prairie dogs "destructive rodent pests."

Colorado's unique relocation law, SB99-111, requires anyone wishing to relocate prairie dogs across county lines to obtain the approval of the receiving county commission as well as a permit from CPW. Because county commissions can and do deny permission, this law complicates and inhibits relocation of (mainly black-tailed) prairie dogs from areas slated for development. This law was passed by the Colorado General Assembly in 1999 and continues to inhibit prairie dog relocation. The state gets an

average grade in this category, which could be improved by, for example, repealing or revising SB-99-111.

Poisoning (D). Colorado Parks and Wildlife (CPW) does not have regulatory authority over the poisoning of prairie dogs. The Colorado Department of Agriculture regulates poisons, and there are few restrictions on poisoning in the state. Rozol and Kaput-D are legal for use in Colorado.

Shooting (B). Colorado prohibits prairie dog shooting on public lands from the end of February through June 15 for all three species of prairie dogs in the state to protect pregnant females and newborns. The seasonal closure for all species earns Colorado a B in this category.

C- Kansas *(black-tailed prairie dogs)*

Background. Kansas historically had 2 million to 7.5 million acres of black-tailed prairie dogs (USFWS, 2009, p. 63,347). That number decreased to ~57,000 acres in 1958, mainly due to poisoning programs and land development; two-thirds of the 33 million acres of Kansas within prairie dog range was converted to cropland and other uses post-European settlement. Once extermination efforts lessened, occupied acreage increased to ~130,000 acres by 2002, which became the population maintenance goal for the Kansas Department of Wildlife, Parks, & Tourism (KDWPT) (*see* KSPDWG, 2002). Kansas is primarily private land, which limits the KDWPT's management options compared to states with large amounts of public land.

Monitor (B). Kansas' most recent prairie dog survey, conducted in 2008, found 148,000 acres of prairie dogs. KDWPT used the spring 2015 National Agriculture Imagery Program (NAIP) aerial images for Kansas to survey for prairie dog occupied acreage as recommended by U.S. Geological Survey. The results are still preliminary and will likely be available within the year. Kansas expects to resurvey approximately every five years.

Conserve (B). KDWPT produced a prairie dog conservation plan in 2002 (KSPDWG, 2002). The state's goal was to maintain 130,000 occupied acres of prairie dogs and increase the number to 150,000 acres by 2012 if incentive programs were developed at the federal level (KSPDWG, 2002, p. 10); no federal incentive programs have been developed. The acreage objective is less than the objective of 148,569 acres proposed in the Multi-state Conservation Plan for the Black-tailed Prairie Dog. As the acreage objective in the 2002 plan is currently exceeded, KDWPT is not taking any specific actions to conserve or expand prairie dog acreage. Lack of any proactive conservation led to a grade of F in the past, but since the state close to meeting the objectives of the Multi-state Plan, Kansas receives a final grade of B in this category.

Habitat (C). As most land in Kansas is privately owned, KDWPT and other state agencies have little authority over land management. In order to foster landowner acceptance of prairie dogs in the state, an important next step would be creating, funding, and promoting incentive programs that subsidize prairie dog presence on rangelands in Kansas, either on the federal or state level. The state gets an average grade in this category, as it is maintaining the status quo.

Plague (C). Plague has impacted ~3,000 acres in Kansas but so far the impacts are minimal. The KDWPT does not take actions to prevent or mitigate disease outbreaks; the disease has not expanded in distribution in the state. As plague only appears to impact about two percent of the states'

population, mitigation is a low priority for the KDWPT. The state therefore earns an average grade in this category.

Policies (D). The black-tailed prairie dog is listed as a species of "greatest conservation need" in the Kansas Comprehensive Wildlife Conservation Strategy, which provides some management guidance but no regulatory protection. KDWPT classifies black-tailed prairie dogs as a "nongame wildlife" species. Antiquated state statutes regarding poisoning have been used to undermine conservation (*see below*), earning the state a D.

Poisoning (F). The KDWPT does not have authority over the use of toxicants and poisons are widely used in the state to exterminate prairie dogs. State laws give 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.

These poisoning policies were used to undermine black-footed ferret conservation on the Haverfield ranch. Logan County tried to use the statute to force the extermination of prairie dogs on the Haverfield/Barnhardt/Blank Complex, a ranch property where landowners worked 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 enjoined the county, preventing them from poisoning prairie dogs on the properties (*see* Stumpe, 2010) and Logan County Commission's appeal of the ruling was denied in July 2012 (Klataske, 2012, p. 42). Though speculative, it appears that the reaction of many state entities (*e.g.* counties and individuals) to the potential ESA listing of the black-tailed prairie dog in 2007 was to increase poisoning efforts.

Shooting (F). Kansas enforces no limit or seasonal closure on prairie dog shooting. Non-residents need a license to shoot prairie dogs while residents are not required to have a license to shoot prairie dogs, moles, or gophers. Lack of shooting regulations, including seasonal closures to protect mothers with dependent pups, earns Kansas an F in this category.

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

Background. Montana once had ~1.5 million to ~10.7 million acres of black-tailed prairie dogs, which shrunk to a historic low of 28,000 acres in 1961 (USFWS, 2009, p. 63,347). Montana is at the northern edge of white-tailed prairie dog distribution. No historic estimate of occupied acreage exists, but white-tailed prairie dogs were likely restricted to a triangular area on the central southern border of the state (Seglund, 2004, p. 38).

Monitoring (C). A 2008 survey found ~191,000 acres of occupied colonies and ~32,000 acres of inactive colonies in the state (Rauscher et al., 2013, pp. 4-5). In 2010 and 2011, four black-tailed prairie dog complexes located in southeastern and central Montana were identified as potentially having at least 5,000 acres of occupied habitat by mapping efforts using NAIP aerial images. During May and June of 2012, Montana Fish, Wildlife & Parks (MFWP) mapped 175 colonies within these complexes, covering 7,329 acres. Results are complex-specific and permission for ground-truthing was denied in many areas on private land. However, the results are useful in guiding ongoing discussions about where to focus conservation efforts and siting of potential black-footed ferret relocation sites. The date of the next survey is uncertain; the state is working with the Western Association of Fish & Wildlife Agencies (WAFWA) to coordinate the planned large-scale survey of black-tailed prairie dogs.

As of 2009 there were an estimated 227 acres of white-tailed prairie dogs in Montana (USFWS, 2010, p. 30,342). White-tailed prairie dog colonies in Montana are not mapped annually and the current acreage is uncertain, though a small population is believed to persist in Carbon County.

Conserve (C). The state has a conservation plan for both black-tailed and white-tailed prairie dogs. The plan's acreage goal for black-tailed prairie dogs is significantly less than the 10-year objectives in the Multi-State Conservation Plan for the Black-tailed Prairie Dog; the state objective is 125,000 to 145,000 acres of occupied habitat and the Multi-State Plan objective is 240,367 acres (USFWS, 2004, p. 26; *see also* MPDWG, 2002). The goal for white-tailed prairie dogs is enhancing populations with the aim of preventing extirpation from the state (MPDWG, 2002, p. 27). Montana re-established a white-tailed prairie dog colony through translocation, but funding for further re-establishment projects expired. MFWP has advocated for landowner incentive programs with stockgrowers and in Washington D. C., and maintains annual meetings of prairie dog and black-footed ferret working groups.

Habitat (C). MFWP is working with the USFWS, Natural Resources Conservation Service (NRCS), and non-governmental organizations to develop an incentive program that would encourage private landowners to allow or maintain prairie dogs on their lands. MFWP has participated in efforts to formalize the NRCS program initiated by the USFWS and WAFWA. Incentive programs would include enrollment of landowners in Safe Harbor agreements with the USFWS to allow for ferret releases onto suitable acreages. Once the incentive program is finalized and funded, the state's grade will likely improve.

Plague (C). Though MFWP does not specifically monitor plague, the most recent survey efforts revealed active plague throughout the state. In 2014 MFWP contracted Wildlife Services to dust 1,100 acres on tribal land at Fort Belknap in preparation for a black-footed ferret release. MFWP contributes funding and supplies to dusting efforts. There is one sylvatic plague vaccine trial site in Montana, on the Charles M. Russell NWR. The USFWS monitors plague on refuge lands. The state gets the average grade of C in this category.

Policies (F). MFWP classifies prairie dogs as a "nongame species" and Montana's Comprehensive Wildlife Conservation Strategy lists both resident prairie dog species as high priority "species of concern." The Montana Department of Agriculture designates both black-tailed and white-tailed prairie dogs as "vertebrate pests." The state conservation plan only applies in situations outside of Department of Agriculture authority. MFWP works with the Department of Agriculture as members of the Montana Prairie Dog Working Group. As the Department of Agriculture has the majority of the authority to manage prairie dogs and classifies them as a pest, the state receives an F in this category.

Poison (D). Prairie dog poisoning is unregulated, except in the Black-footed Ferret Recovery Area in the UL Bend National Wildlife Refuge where it is prohibited. If the area to be treated exceeds 80 acres in size, the Montana Department of Agriculture recommends consultation with the U.S. Fish and Wildlife Service (Montana Department of Agriculture, 2006, p. 3). The one state prohibition on poisoning in the Recovery Area and the recommendation for consultation keep the state from getting an F. Rozol and Kaput-D are legal for use in Montana.

Shooting (F). There is no prohibition on shooting either species and a license is not required (USFWS, 2010, p. 30,358), with the exception of the Black-footed Ferret Recovery Area in the UL Bend National Wildlife Refuge, where recreational shooting of prairie dogs is prohibited. Lack of any shooting regulations, including seasonal closures to protect mothers with dependent pups, earns Montana an F in this category.

F Nebraska *(black-tailed prairie dogs)*

Background. Nebraska once had an estimated six million to nine million acres of black-tailed prairie dogs (USFWS, 2009, p. 63,347). The state estimated it had ~137,000 occupied acres in 2003.

Nebraska has historically been hostile to prairie dog conservation. In 2002, the Nebraska Game & Parks Board of Commissioners ordered the state's Game & Parks department to stop all prairie dog conservation activities, including development of a conservation plan and monitoring (Johnsgard, 2005, p. xi). That ban was rescinded, but the state has so far done little in the way of research.

Monitoring (F). The state has not conducted any population surveys since 2003.

Conserve (F). The Nebraska Game & Parks Board has been actively hostile to developing a prairie dog conservation plan. Nebraska Game & Parks developed a draft plan before being told to cease work (USFWS, 2004, p. 26) The state allowed reintroduction of prairie dogs onto 40 acres of a private nature sanctuary in 2011.

Habitat (C). The state has no specific practices that are particularly detrimental or beneficial to prairie dog habitat, and gets an average grade in this category.

Plague (F). The state does not manage for plague.

Policies (D). The state rejoined the Grassland Initiative in 2014, with the intent of resurveying prairie dog range in the near future. With the exception of rejoining the Grassland Initiative in 2014, the state has not promulgated any conservation plans or policies beneficial to prairie dogs, and poisoning policies require prairie dog control.

Poisoning (F). The Black-tailed Prairie Dog Management Act (LB473), passed in March 2012, gives counties the power and the duty to control prairie dogs on private and non-federal public land. In February of 2014, Sheridan County instituted a Black-tailed Prairie Dog Management Plan under the Act. State Senator Ernie Chambers submitted a measure (LB673) in January 2014 that would repeal the Black-tailed Prairie Dog Management Act; the hearing on that bill was delayed indefinitely.

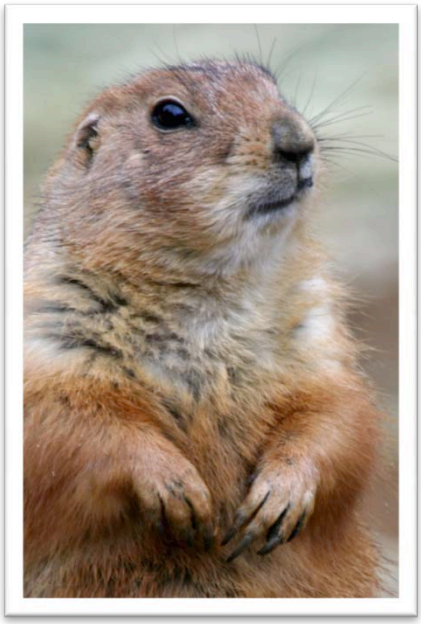
Shooting (F). Nebraska has no limits on shooting prairie dogs, except that non-residents must obtain a license.

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

Background. Historically, black-tailed prairie dogs occupied 6.6 million to nine million acres in New Mexico, dropping to a historic low of 17,000 acres in 1961 (USFWS, 2009, p. 63,347). In 1916, there were 11 million acres of Gunnison's prairie dogs in New Mexico; by 1961, that number had dropped to 355,000 acres (USFWS, 2008, pp. 6,664-6,665).

Monitoring (B). The New Mexico Natural Heritage program (NMNH) used NAIP aerial images from 2005 to estimate the area of prairie dog disturbance over the historical range of the black-tailed prairie dog. The NMNH estimated 40,000 acres of active black-tailed prairie dog towns in the study area, an apparent increase from an estimate based on 1996-1997 imagery (these estimates should be considered

approximate). It also appears that prairie dog disturbance increased in the northern part of the study area and decreased in the southern part (Johnson et al., 2010a, p. 24). Using a similar method—aerial imagery and a model—the NMNH estimated the area of active Gunnison's prairie dog towns on the Navajo Nation and Reservation of the Hopi Tribe at ~254,000 acres (only a portion of this acreage is in New Mexico; the remaining area of the Navajo Nation falls within Utah and Arizona, and the Reservation of the Hopi Tribe is entirely within Arizona) (Johnson et al., 2010b, p. 18). The NMDGF has conducted some limited population surveys for Gunnison's prairie dogs on BLM-administered public land in the Cebolla Wilderness and on the Rio Grande del Norte National Monument, which hosts a large colony. The next statewide occupancy survey for Gunnison's prairie dogs is planned for 2016. The state's grade has risen from a D to a B over time due to increased monitoring efforts for both species in the state.



Mexican prairie dog. Photo: Rurik List

Conserve (D). New Mexico released a draft conservation plan for the Gunnison's prairie dog in 2008, but has yet to finalize the plan. The three-part goal of the conservation plan is to 1) establish focal areas for conservation of Gunnison's prairie dog; 2) ensure persistence of populations in each focal area; and 3) provide habitat connectivity between focal areas (NMDGF, 2008, p. 19). The only known progress toward these goals has been made on Ted Turner's Vermejo Park Ranch, where managers are translocating Gunnison's prairie dogs, dusting for plague, and reintroducing black-footed ferrets, but the presence of plague is limiting success. There is no specific acreage goal in the draft conservation plan.

The final conservation plan for the black-tailed prairie dog includes the 10-year objective for occupied habitat of 87,132 acres from the Multi-State Conservation Plan for the Black-tailed Prairie Dog (USFWS, 2004, p. 27). This goal has not been met.

Habitat (C). The Santa Fe Field Office of the Natural Resources Conservation Service currently has one Environmental Quality Incentives Program application in which a landowner is working with WildEarth Guardians and Great Plains Restoration Council to improve habitat and reintroduce Gunnison's prairie dogs into the Galisteo Basin. One of three planned prairie dog towns was established in the Southern Crescent portion of the Basin, and restoration and reintroduction work continues.

Sevilleta National Wildlife Refuge has been reintroducing and monitoring Gunnison's prairie dogs on three sites of about 40 acres each since 2005. The colony has struggled, with drought leading to low survival (*see* Davidson et al., 2014). The BLM translocated Gunnison's prairie dogs from the City of Santa Fe into an existing colony on the El Malpais National Conservation Area and is currently monitoring the project's success (*see* "BLM"). Aside from these two small projects, the state has no specific practices that are particularly detrimental or beneficial to prairie dog habitat, and gets an average grade in this category.

Plague (F). The state does not monitor or mitigate for plague in prairie dogs and thus gets an F in this category.

Policies (D). Both black-tailed and Gunnison's prairie dogs are listed as "species of greatest conservation need" in New Mexico's Comprehensive Wildlife Conservation Strategy, and are expected to remain so in the upcoming 2016 revision. However, as neither species is considered "small game," the NMDGF does not have the authority to issue regulations on prairie dog shooting such as bag limits or seasonal limitations. New Mexico has no permitting process for relocation of prairie dogs, which can lead to difficulty in tracking relocation projects. Currently there are no specific incentive programs for prairie dog conservation. Black-tailed prairie dog relocation is prohibited in Chavez and Curry counties by county ordinance. Those hostile local ordinances are somewhat offset by the Santa Fe city ordinance requiring relocation before lethal control can be used on prairie dogs at development sites.

Poison (D). The New Mexico Department of Agriculture regulates rodenticide use. Rozol and Kaput-D are legal for use on prairie dogs in New Mexico.

Shooting (F). Shooting is banned on state trust lands but is otherwise unrestricted. A highly publicized killing contest targeting prairie dogs in 2013 highlighted the state's failure to outlaw the ecologically and ethically unsound practice of high-body-count killing contests. Lack of shooting regulations, including seasonal closures to protect mothers with dependent pups, earns New Mexico an F in this category.

D- North Dakota *(black-tailed prairie dogs)*

Background. North Dakota is at the northeastern edge of black-tailed prairie dog distribution, and prairie dogs are found only in the southwest corner of the state. Black-tailed prairie dogs once inhabited an area of about two million acres in North Dakota; by 1961 that acreage had shrunk to a low of 20,000 acres (USFWS, 2009, p. 63,347). In 2001, there were 33,000 acres of occupied habitat (USFWS, 2002, p. 5).

Monitoring (C). Based on the latest survey from the North Dakota Game & Fish Department (NDGFD) using aerial photos from 2012 and ground-truthing, occupied acreage has decreased to ~18,000 acres from ~22,600 acres in 2006. It is unclear whether this decline is due to differing survey methodology, a smaller survey area, or an actual decline in population, but it appears that the occupied is now at or below the historic low of 1961. The state's management plan calls for a statewide survey every three to five years.

Conserve (F). The state's prairie dog management plan does not support the acreage objective of 100,551 occupied acres set forth in the Multi-State Conservation Plan for the Black-tailed Prairie Dog. Instead, the state's goal is to maintain a "biologically viable" population of the species, which NDGFD defined as the amount of prairie dogs present in the state at the time the plan was written: 33,000 acres (USFWS, 2002, p. 25-26). This population has not been maintained.

Habitat (C). The state has no specific practices that are particularly detrimental or beneficial to prairie dog habitat, and gets an average grade in this category.

Plague (n/a). There have been no reported plague outbreaks, and the state does not manage for plague. This category does not apply as there is not yet any plague detected in prairie dog colonies in the state.

Policies (F). North Dakota's Comprehensive Wildlife Conservation Strategy lists the black-tailed prairie dog as a "species of conservation priority." The North Dakota Department of Agriculture

designates prairie dogs as a "pest species." Policies in the state, including shooting and poisoning regulations and inadequate management planning, are generally detrimental to prairie dogs, earning the state an F.

Poisoning (D). Poisoning is legal on private lands and illegal on public lands, although it does occur there (Hagen et al., 2005, p. 305). Rozol is legal for use on prairie dogs in North Dakota. The State Department of Agriculture and county weed boards have regulatory authority over control efforts.

Shooting (F). North Dakota has no limits on prairie dog shooting, except for requiring non-residents to obtain a license. NDGFD provides a map of the general locations of prairie dog towns in the hunting/trapping section of its website. Lack of shooting regulations, including seasonal closures to protect mothers with dependent pups, earns North Dakota an F in this category.

C Oklahoma *(black-tailed prairie dogs)*

Background. Oklahoma once had 950,000 to 4.6 million acres of black-tailed prairie dogs, which were reduced to a low of 15,000 acres in 1961 (USFWS, 2009, p. 63,347). Occupied acreage has contracted due to plague outbreaks in the panhandle, followed by ongoing drought that slowed recovery; acreage was 57,677 acres in 2006 and 42,000 acres in 2011.

Monitor (B). The most recent surveys of prairie dog range, using statewide aerial photos and ground-truthing in 2013 estimated 18,000 to 22,000 occupied acres remaining. The next survey will take place within the next five years. Oklahoma gets a B in this category.

Conserve (C). Oklahoma has a completed black-tailed prairie dog conservation plan (Hoagland, 2001) which supports the 10-year objective of 68,657 occupied acres set forth in the Multi-state Conservation Plan for the Black-tailed Prairie Dog (USFWS, 2004, p. 27; Luce, 2003, p. 28). This objective is not met.

In 2015 the Oklahoma Department of Wildlife Conservation (ODWC) carried out two relocations and constructed a barrier around a cemetery in Cimarron County (*see* "Wildlife Services"). Oklahoma gets an average grade in this category.

Habitat (C). Until recently, landowners with 10 or more occupied acres could enroll in a Landowner Incentive Program and receive an annual incentive payment for conserving prairie dogs on their land. Only shooting was allowed for control on enrolled acres. At the peak of the program, over 19,000 acres were enrolled. Unfortunately, funding for the program expired at the end of September 2014, and enrollment has dropped to 1,900 acres. The state is focusing most incentive program funding on lesser prairie-chicken conservation, and a new source of funding for the prairie dog program has not been identified. This program earned the state a B most years, but since it is shrinking and unfunded, the grade drops to a C.

Plague (C). The state monitors, but does not mitigate for plague. Plague has only been recorded in the three panhandle counties. Approximately 75 to 80 percent of the colonies in those counties have been impacted by plague, but populations are showing recovery. The state is not prioritizing plague mitigation because the impacted populations appear to be rebounding. The state gets a C for monitoring but not mitigating.

Policies (B). The ODWC classifies prairie dogs as "nongame wildlife" and lists them as a "species of concern" in the state's Comprehensive Wildlife Conservation Strategy. Oklahoma is the only state that prohibits killing of prairie dogs with explosives.

Poisoning (B). Oklahoma is the only state that requires a permit for prairie dog poisoning on private lands. Moreover, the state will not issue permits to private landowners to poison prairie dogs in counties that have fewer than 1,000 prairie dogs or fewer than 100 occupied acres. Poisoning in the state is relatively rare and usually occurs when colonies shift into agricultural areas due to drought. Over the last year fewer than 100 acres were poisoned. The Oklahoma Department of Agriculture approves toxicants use for prairie dog poison control, and the ODWC comments on any prairie dog control toxicant approvals. In 2015, permits were issued to 14 landowners to control prairie dogs on 508 acres. Rozol and Kaput-D are legal for use in Oklahoma. Oklahoma's restrictive poisoning regulations earn them a B in this category.

Shooting (F). Prairie dog shooting is unlimited on most land (a license is required), but is prohibited on wildlife management areas owned or managed by the ODWC. However, most of the prairie dog acreage in Oklahoma is on private lands. Written permission from landowners is required to shoot prairie dogs on private land. General lack of shooting regulations, including seasonal closures to protect mothers with dependent pups, earns Kansas an F in this category.

C- South Dakota *(black-tailed prairie dogs)*

Background. Approximately 1.8 million to 6.4 million acres of black-tailed prairie dogs once existed in South Dakota, contracting to a low of 33,000 acres in 1961 (USFWS, 2009, p. 63,347). South Dakota Game, Fish, & Parks (SDGFP) estimated there were 630,849 colony acres in 2008; the most recent estimate from 2012 is 526,641 colony acres.

South Dakota has historically resisted prairie dog conservation; after the black-tailed prairie dog was placed on the ESA candidate list, the governor and the federal congressional delegation put considerable pressure on USFWS to remove it, and once it was removed, immediately unveiled an "emergency" prairie dog control program that poisoned over 32,000 acres in 2004 (Tri-State Neighbor, 2005). The state once had a seasonal shooting closure on public lands, but the South Dakota Legislature ended that in 2011. The state also had an incentive program for preserving prairie dogs on private land in the Conata Basin, but the grant that funded it expired and the program was cancelled in 2011.

Monitoring (B). In 2015, SDGFP completed analyzing the data from a survey of black-tailed prairie dogs using aerial imagery and ground-truthing. As of 2012, there were 526,641 acres of black-tailed prairie dog colonies in South Dakota, 222,173 acres on tribal lands and 304,468 acres on non-tribal land (Kempema et al., 2015, p. 1). Of the 52,861 acres of colonies ground-truthed, 43,791 acres (82.8 percent) were active and 9,070 acres (17.2 percent) were inactive (Kempema et al., 2015, p. 8). The next survey is contingent upon availability of NAIP imagery, but the state intends to monitor approximately every three years (Kempema et al., 2015, p. 2). New methodology and survey efforts raise the state's grade to a B.

Conserve (B). South Dakota has met the state-specific target acreage and distribution goals outlined in the Multi-state Conservation Plan for the Black-tailed Prairie Dog and is not undertaking any further management changes or efforts to expand acreage (Kempema, et al. 2015, p. 1). SDGFP is using a barrier in one area to prevent prairie dog colony expansion. Lack of proactive conservation led to low

grades in the past, but since the state has met the Multi-state Conservation Plan goals, it receives a final grade of B in this category.

Habitat (C). There are currently no habitat incentive programs in the state and no policies that are particularly injurious or beneficial to prairie dog habitat; the state gets an average grade of C in this category.

Plague (C). The plague bacterium is likely present in most if not all counties west of the Missouri River. The National Park Service, U.S. Forest Service, U.S. Fish and Wildlife Service, and World Wildlife Fund are undertaking measures to counteract plague in parts of the Conata Basin. Badlands National Park dusts in cooperation with the adjacent Buffalo Gap National Grassland. There are three field trial sites for the sylvatic plague vaccine in South Dakota: on tribal land in the Lower Brule, on Wind Cave National Park, and on the Wall Ranger District of the Buffalo Gap National Grassland.

There is currently no statewide plague monitoring effort through the SDGFP. On a smaller scale, there have been thorough efforts to monitor movement of the disease on Forest Service and National Park Service managed lands in and around the Conata Basin (Kempema et al., 2015, p. 10). Vaccine trial sites, mitigation, and small-scale monitoring efforts earn the state an average grade in this category.

Policies (C). SDGFP classifies the black-tailed prairie dog as a "predator/varmint species" for hunting license purposes, and as a "species of management concern," meaning the state believes it may require either control or protection depending on variables including climate, disease, and population viability.

Poison (F). Unlike many other state Fish and Wildlife agencies, SDGFP poisons prairie dogs. Under state law, SDGFP may control prairie dogs as "pests" if: 1) sylvatic plague is reported in any prairie dog colony east of the Rocky Mountains; 2) SDGFP determines that the population of prairie dogs within the state, including tribal lands, exceeds the 145,000 acre level; 3) prairie dogs are colonizing lands where they are unwanted by the landowner; 4) lands adjacent to the impacted owner's land do not have a maintained one-mile buffer zone, or other mutually agreed border, in which prairie dog control is applied; and 5) the owner of the impacted land has filed a written complaint of encroachment requesting mitigation or abatement with the South Dakota Department of Agriculture and served a copy upon the owner of the lands from which the prairie dogs are encroaching, or filed a written complaint with the county weed and pest board. In 2015, SDGFP controlled prairie dogs on 3,400 colony acres. Counties also poison colonies, but it is difficult to obtain an estimate of acreage controlled. Rozol and Kaput-D are legal for use on black-tailed prairie dogs in South Dakota. SDGFP, however, does not use anticoagulant poisons.

Shooting (F). A prairie dog shooting season is open statewide year-round, with no limitation on shooting hours and no daily or possession limits (with the exception of the Black-footed Ferret Recovery Area in the Conata Basin, which is closed to shooting). Lack of shooting regulations, including seasonal closures to protect mothers with dependent pups, earns South Dakota an F in this category.

D Texas *(black-tailed prairie dogs)*

Background. At one time, Texas had 16.7 million to 57.6 million acres of black-tailed prairie dogs, which shrunk to a low of 26,000 acres in 1961 (USFWS, 2009, p. 63,347). Currently, the average colony size in Texas is fewer than one hundred acres, but the state has at least two colonies larger than 5,000

acres. The Texas Parks & Wildlife Department (TPWD) is in charge of general management and research, while Texas Wildlife Services handles lethal control and dusting for plague prevention.

Monitoring (C). The TPWD estimated 115,000 acres occupied by prairie dogs in its last survey in 2006. A re-survey of priority areas completed in 2011 indicated that while some areas have grown and others have shrunk, overall acreage in priority areas decreased between 2005 and 2010. Texas usually earned B's due to surveys of priority areas, but this grade is being lowered to a C; the state is not planning another statewide survey due to other priorities.

Conserve (D). Texas' management plan, introduced in 2004, set a goal of 293,129 acres of occupied habitat by 2011 (TXPDWG, 2004, p. v), which was the same goal set by the Multi-state Conservation Plan for the Black-tailed Prairie Dog. The goal was not met. Most of the state is private land, making acreage goals more difficult to achieve. The state put plans for black-footed ferret reintroduction on hold indefinitely while it focuses resources on conserving species currently present in Texas. The Forest Service continues to manage for reintroduction potential on the Rita Blanca National Grassland.

Habitat (C). The TPWD has some incentive and conservation programs that could benefit black-tailed prairie dogs, thought they are not directed at the species specifically. These include the state's Landowner Incentive Program, the Candidate Conservation Agreement for the lesser prairie-chicken, and the state's work with the USFWS and other partners to draft a Safe Harbor Agreement for the black-footed ferret which would support reintroduction.

The TPWD established two black-tailed prairie dog colonies in Caprock Canyons State Park, which are expanding. The State Park is removing invasive plant species from its prairies as part of a restoration program.

Plague (D). Two colonies on the Rita Blanca, 515 acres altogether, are test sites for sylvatic plague vaccine trials, and therefore are closed to shooting. Plague has been detected in the state; there is no estimate of affected acreage available, but the impact is "probably significant" according to TPWD staff. The state gets a D in this category because no agencies are monitoring what could be serious impacts to the remaining prairie dogs.

Policies (C). The TPWD designates black-tailed prairie dogs as nongame and a "species of concern." The state allows live-collecting of fewer than 25 prairie dogs for the pet trade 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 receives an average grade in this category.

Poison (F). The state Agriculture Department distributes poison to control prairie dogs, but requests made for the poison are decreasing. There are few regulations limiting poisoning. The TPWD itself does not poison prairie dogs, and if appropriate may facilitate relocation. Rozol and Kaput-D are legal for use in Texas.

Shooting (F). Texas allows unlimited prairie dog shooting with a license. Lack of shooting regulations, including seasonal closures to protect mothers with dependent pups, earns Texas an F in this category.

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

Because the management situation for Utah prairie dogs is so unique, we have graded management of the species separately from the other two species in Utah this year. The state's overall grade is the average.

Gunnison's and white-tailed prairie dogs

Background. Estimates put the Gunnison's prairie dog at 700,000 occupied acres in Utah around 1916; by 1961, the occupied area shrunk to 100,000 acres (USFWS, 2008, pp. 6,664-6,665). Historical acreage of white-tailed prairie dogs is difficult to determine, but in 2002 and 2003 there were 141,808 acres of occupied white-tailed prairie dog habitat, mostly in Uintah and Duchesne Counties. Smaller population areas were found in Emery and Grand Counties (26,856 acres), and in Rich County (180 acres). This is an underestimate, as surveys did not include private land (USFWS, 2010, p. 30,343).

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

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

Conserve (C). Utah adopted the Gunnison's Prairie Dog and White-tailed Prairie Dog Conservation Plan in 2007, planning for 2008 through 2017 (*see* Lupis et al., 2007). The population goal of the plan is maintaining populations above 60 percent of the 2008 population baseline; it is unclear if this goal still applies now that occupancy modeling is being used exclusively for Gunnison's and white-tails as opposed to occupied acreage counts.

Habitat (C). There are no specific programs or policies protecting or restoring Gunnison's and white-tailed prairie dog habitat in Utah, but also no specific policies encouraging habitat destruction.

Plague (D). Plague was confirmed in white-tailed prairie dogs and suspected in Gunnison's prairie dogs during 2015. There is no estimate of affected acreage. Neither species is dusted for plague. The state does not use or recommend relocation for white-tailed or Gunnison's prairie dogs because of disease concerns. The state hosts three vaccine trial sites, one of which—Coyote Basin—is on a white-tailed prairie dog colony (BFFRIT, 2014, p. 7).

Policies (C). Gunnison's and white-tailed prairie dogs are identified as "species of greatest conservation need" in the 2015 Utah Wildlife Action Plan. The UDWR has assigned both species a NatureServe rank of "vulnerable," meaning that they are at "moderate risk" of extirpation within the state.

Poisoning (C). White-tailed and Gunnison's prairie dogs are classified as "depredating animals" by the Utah Department of Agriculture & Food, which has regulatory authority over poisoning through the Agriculture & Wildlife Damage Prevention Board. UDWR did not undertake any control efforts on state or federal land in 2015. Rozol and Kaput-D are not legal for use in Utah.

Shooting (B). Utah bans shooting of Gunnison's and white-tailed prairie dogs on public lands during the breeding season from April 1 to June 15. This closure does not apply to private lands. Shooting of white-tailed prairie dogs is not permitted in the Coyote Basin Black-footed Ferret Recovery Area.

Utah Prairie Dogs

Background. The situation of Utah prairie dogs is unique, as they are the only prairie dog species in United States listed under the Endangered Species Act (ESA). The species only occurs in Utah, but because they are listed as "threatened," the USFWS has authority over Utah prairie dog recovery efforts. USFWS works in cooperation with partners on recovery efforts and the UDWR accomplishes the majority of the fieldwork. Other federal agencies such as the USFS, BLM, and NPS work in concert with USFWS on recovery actions (translocation, dusting, and monitoring).

Utah prairie dog. Photo: James Phelps.

In the 1920's, as many as 95,000 Utah prairie dogs may have inhabited southwestern Utah. Poisoning campaigns, habitat destruction, and disease all contributed to extensive declines by the 1960's. The species was listed under the ESA in 1973 and recovery efforts began after the species reached a population low of 3,300 animals in 1972. The species was downlisted from "endangered" to "threatened" in 1984 (UDWR, 2015, pp. 4-5).

Currently, Utah prairie dogs inhabit less than 10 percent of their historic range. The majority (71 percent) occur on private land (UDWR, 2015, p. 5), making Utah prairie dog conservation a source of intense conflict in the state, particularly where Utah prairie dogs are threatened by development. The USFWS and UDWR attempted to mitigate these conflicts by creating exceptions to the strict ESA "take" prohibitions for areas of particular conflict including airports and cemeteries, and by enrolling landowners in Safe Harbor programs, creating Habitat Conservation Plans for counties, and issuing Incidental Take Permits allowing the removal of a limited number of Utah prairie dogs or destruction of a limited amount of habitat. The state, in partnership with other agencies and groups, also created a Habitat Credit Exchange Program (HCEP), a conservation banking mechanism that allows landowners to either purchase conservation credits to destroy prairie dogs or their habitat, or make money from

selling conservation credits if they conserve prairie dogs on their property. However, this was not enough for a group called People for the Ethical Treatment of Property Owners (PETPO), who filed a lawsuit against the Department of Interior challenging the ability of the USFWS to regulate Utah prairie dogs on private property.

In November 2014, a District Court judge in Utah ruled in favor of PETPO, stating that the USFWS does not have the authority to regulate the Utah prairie dog under the Commerce Clause, as the species occurs only in Utah. This ruling is contrary to a long established body of case law regarding the ESA, and both the federal government and the non-profit organization Friends of Animals are appealing the decision. In the meantime, as of November 2014, the UDWR was granted management authority on all non-federal lands. The UDWR wrote and implemented a new Utah Prairie Dog Management Plan, which now governs Utah prairie dog management on non-federal lands. The plan will be reviewed and assessed annually. If Utah prairie dogs lose their ESA protections, this management plan would apply to all lands. The UDWR works with USFWS, USFS, and BLM to carry out recovery actions, and coordinates most Utah prairie dog management efforts

In 2015, the Utah Prairie Dog Recovery Implementation Program (UPDRIP) changed its name to the Utah Prairie Dog Oversight Group (UPDOG). This working group is charged with coordinating the management of Utah prairie dogs on public and protected lands, and participants include state and federal agencies, counties, land trusts, local municipalities, and environmental interest groups.

Monitor (A). Spring counts of adult Utah prairie dogs are conducted annually from April to June. The total count for 2015 was ~12,900 adult animals. Only about 50 percent of prairie dogs are above ground (sightable) at a time. The population estimate is determined by multiplying the spring count by sightability, the percentage of females that breed, and the average litter size. The population estimate for 2015 was ~92,000 Utah prairie dogs. The UDWR mapped 802 acres of new Utah prairie dog habitat in 2015.

Conserve (B). The UDWR is working toward goals set forth in the 2012 Recovery Plan for the Utah prairie dog (*see* USFWS, 2012) which, when achieved, could start the process for removing ESA protections from Utah prairie dogs. The Recovery Plan focuses on three "Recovery Units"—the Awapa Plateau Recovery Unit, the Paunsaugunt Recovery Unit, and the West Desert Recovery Unit—that are essential to the survival and recovery of the entire species and contain high concentration of Utah prairie dogs.

After gaining management authority, the Division of Wildlife trapped 2,663 Utah prairie dogs from non-federal lands and relocated them to release sites on protected public lands in all three recovery units. Every animal trapped and translocated was dusted with DeltaDust to prevent plague. Seasonal employees were hired, trained, and supervised to conduct surveys, trapping and translocation, and plague dusting. The State of Utah provided funding for 14 seasonal technicians.

The UDWR also reached out to the public, giving presentations about Utah prairie dog management to Southern Utah University, the Iron County Home Builders Association, Cedar City Rotary Club, and Iron County Board of Realtors.

Habitat (B). One of the biggest obstacles to Utah prairie dog recovery and conservation is finding enough suitable protected habitat. Improvements on existing habitat including vegetation treatment, prescribed burning, and reseeding were carried out on 719 acres in 2015, with an additional 4,400 acres

scheduled for treatment in 2016. Lop and scatter (a thinning technique intended to prevent fire) of pinyon and juniper was carried out on 12,000 acres to benefit Utah prairie dogs.

A total of 280 acres is currently protected under the HCEP; no new properties were enrolled in 2015.

The UDWR management plan removes restrictions on all unoccupied private lands, which could lead to loss of habitat including unoccupied former colonies (UDWR, 2015, p. 12).

Plague (A). There were no documented cases of plague in Utah prairie dogs in 2015. One large colony collapsed, but there was no evidence to support plague as the cause.

Most dusting takes place on federal lands, and is conducted by USFS and BLM. Approximately 7,908 acres were dusted in 2015, including the Dixie and Fishlake National Forests, the Cedar City BLM Field Office, and parts of Iron County. Active sites will be dusted every other year past 2015.

There are three field sites for sylvatic plague vaccine trials in Utah, in Iron County, the Awapa Plateau (Utah prairie dogs) and Coyote Basin (white-tailed prairie dogs) (BFFRIT, 2014, p. 7). 2015 was the third year of the field trials, and they will continue for at least one more year.

Policies (D). The Utah prairie dog is federally listed as a "threatened" species. However, due to the recent court case and subsequent administrative rules which came into effect in May of 2015, the state of Utah, via the UDWR, has full management authority over Utah prairie dogs on non-federal land, where they are no longer subject to the ESA. For removing the strong protections of the ESA from vast swathes of Utah prairie dogs, the state as a whole gets a D. However, the UDWR should be commended for responding quickly to the management change with a new plan limiting and regulating "take" of Utah prairie dogs on non-federal lands, though the new plan includes problematic provisions. Incidental take is permitted through Certificates of Registration (CORs) issued by Utah Division of Wildlife Resources, following the guidelines of previously established HCPs (UDWR, 2015, p. 9). Total take for development and agriculture is capped at 6,000 prairie dogs rangewide; however if the spring count on private property exceeds 6,000 then the cap will be raised by one-half of the excess amount (UDWR 2015, p. 13). Ninety-eight agricultural take permits were issued in 2015, and 16 Utah prairie dog take permits were issued for development projects under the State Management Plan. Prior to the application of the new management plan, the Division of Wildlife issued two CORs to Iron County for development projects in place of the 1998 Habitat Conservation Plan and Low-effect Habitat Conservation Plan.

The new management plan also puts in place a voluntary incentive program for agricultural landowners to conserve prairie dogs. Agricultural landowners or lessees with more than 50 prairie dogs in the currently year's spring count may be eligible to receive compensation for crop losses and damage caused by prairie dogs. Participants must agree to not control the prairie dogs until UDWR has completed trapping efforts for the year, and after that, allowed "take" follows guidelines set forth in previous ESA rules (UDWR, 2015, p. 14). The purpose of the program is to compensate landowners for damage associated with prairie dog foraging, and to allow the UDWR to translocate those prairie dogs to federal and protected lands. About 400 acres of mapped Utah prairie dog habitat are enrolled in the voluntary incentive program.

Poisoning (A). There are no poisons or toxicants legal to use on Utah prairie dogs.

Shooting (D). There is currently no recreational shooting or open season on Utah prairie dogs. Lethal control of Utah prairie dogs is only allowed with prior authorization from the UDWR, or because of an immediate safety situation. As of December 14, 2015, 2,942 Utah prairie dogs were reported lethally controlled in safety concern, unmapped, and agricultural areas. The cap on lethal control is now 6,000 or more animals, differing from the 2012 ESA rule limiting take to 10 percent of the current annual population count (UDWR, 2015, p. 13).

D Wyoming (black-tailed and white-tailed prairie dogs)

Background. Wyoming once had approximately six million to 16 million acres occupied by black-tailed prairie dogs, which shrunk to a low of 49,000 acres in 1961 (USFWS, 2009, p. 63,347). The Wyoming Game & Fish Department (WGFD) surveyed black-tailed prairie dog populations in 2006 and estimated 229,607 occupied acres (Grenier et al., 2007). Historical acreage numbers for white-tailed prairie dogs are not available; the WGFD conducted a statewide white-tailed prairie dog aerial survey in 2008 and estimated approximately two million occupied acres (USFWS, 2010, p. 30,343).

Management of prairie dogs is the responsibility of the WGFD, while control efforts are administered by the Department of Agriculture and county weed and pest boards. The USFS manages conservation efforts on Thunder Basin National Grasslands.

Monitor (B). The WGFD contracted with a private company (WEST, Inc.) for a black-tailed prairie dog acreage survey in summer 2015. Results should be available in winter 2015-2016 or spring 2016. The Department contracted with the Wyoming Natural Diversity Database for statewide white-tailed prairie dog surveys and conducted a pilot survey in summer 2015. Statewide surveys will be carried out in 2016. These surveys use the same occupancy survey protocols as Utah and Colorado. The state's grade is raised to a B this year for increasing efforts to survey both species.

Conserve (F). Wyoming does not have a statewide prairie dog management plan, as the Wyoming Game Commission rejected the draft plan developed in 2001 (USFWS, 2004, p. 29).

Habitat (C). The state has no specific practices that are particularly detrimental or beneficial to prairie dog habitat, and gets an average grade in this category.

Plague (D). Plague is present in prairie dog colonies in Wyoming. No estimate of affected colony acreage is available, but no recent reports indicate epizootic outbreaks. The WGFD does not currently dust for fleas, but the USFS dusts on Thunder Basin National Grassland (*see* "USFS").

Wyoming is currently conducting plague vaccine trials on 160 acres of white-tailed prairie dog colonies near Meeteetse, Wyoming, and an expanded trial will continue for a fourth year in 2016. The USGS is the lead on the vaccine project and is in charge of compiling and analyzing results. WGFD participated in a media day to highlight this multi-agency effort in 2015. For minimal monitoring and mitigation, the state gets a D in this category.

Policies (D). Both white- and black-tailed prairie dogs are designated as "non-game species of special concern" by WGFD and a "pest" by the state's Agriculture Department. As of 2010, black-tailed prairie dogs are no longer classified as a "species of greatest conservation need" in the state wildlife action plan. In early 2012, the Wyoming Game and Fish Commission approved a relocation policy for the

entire state. Under this policy, an annual request to relocate must be made, and the commission must approve relocations.

Poisoning (F). Similar to counties in Nebraska and Kansas, the Department of Agriculture Weed & Pest Districts in Wyoming can require landowners to control prairie dogs as pests (Department of Agriculture Statute 11-5-109).

Shooting (F). Wyoming has no limits on shooting.

Conclusion

Much remains to be done to recover the prairie dog empire to even a fraction of its former glory. The native grassland ecosystem is one of the most endangered in our country (Noss et al., 1995, Fig. 2). Many of the incredible natural phenomena associated with grasslands—prairie dog colonies millions of acres across, massive herds of bison migrating across the plains, lesser prairie-chickens dancing on their leks, the eyes of black-footed ferrets shining in the night—have vanished or are nearly gone. Prairie dogs and their interactions with other species once shaped vast landscapes in the American West. Protections for prairie dogs will be key to recovering America's grasslands.

State and federal agencies can contribute to prairie dog conservation by restricting and eliminating recreational shooting, emphasizing non-lethal management techniques, prohibiting use of toxic poisons, preventing habitat destruction, restoring degraded habitat, mitigating plague, and promoting landowner incentive programs to conserve the species. WildEarth Guardians is working on many fronts to ensure the protection and restoration of these incredible ecosystems, and we will continue to do so until prairie dogs are protected and respected as a key part of the grasslands.

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Ranges of the Five Prairie Dog Species


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