

REPORT FROM  
THE BURROW

Forecast of the  
Prairie Dog



WILDEARTH  
GUARDIANS

# WILDEARTH GUARDIANS

## MISSION STATEMENT

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

Prairie Dog Day  
February 2, 2008

## About this Report

This report assigns a letter grade to each federal agency and state responsible for managing prairie dogs. The Report Card is based on the most accurate and current scientific data. Scientific documents along with information provided directly from the federal and state governments formed the basis for determining grades.

The Report Card focuses on the United States, which has 4 prairie dog species: black-tailed prairie dogs, Gunnison's prairie dogs, Utah prairie dogs, and white-tailed prairie dogs. Mexico, which has black-tailed and Mexican prairie dogs, and Canada, which has a small population of black-tailed prairie dogs, are also included.

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(Reviewers are independent scientists who verified factual accuracy.

Review does not constitute an endorsement of the 2008 Report from the Burrow.)

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# REPORT FROM THE BURROW | Forecast of the Prairie Dog

## INTRODUCTION

Unique to North America, the five species of prairie dogs are a vital part of our rich natural heritage. A member of the Prairie Dog Coalition, Dr. Jane Goodall, DBE, founder of the Jane Goodall Institute and U.N. Messenger of Peace, remarks, "The prairie dog is a critical component to healthy North American grasslands." But prairie dogs and the prairie dog ecosystems they sustain face unprecedented peril. In the words of renowned naturalist author Terry Tempest Williams, "If the prairie dog goes, so goes an entire ecosystem. Prairie dogs create diversity. Destroy them and you destroy a varied world."

This first annual report card is WILDEARTH GUARDIANS' effort, in conjunction with leading prairie dog biologists, to promote progress toward our vision of recovery of prairie dog populations and the diverse landscapes of life they sustain. Every year, we will report grades on the performance of federal and state agencies that are responsible for ensuring the prairie dog ecosystem does not disappear.

The report card is released on Prairie Dog Day, our western take on Groundhog Day – February 2nd. While Punxsutawney Phil may predict the length of winter, prairie dogs foretell the future of the unique ecosystems they create and sustain. Currently, the shadows prairie dogs see are in the form of bulldozers and plows destroying their habitat, humans wielding poisons and guns, and the threat of total devastation from exotic disease. Alongside these shadows is the gathering storm cloud of the climate crisis.

The biological status of prairie dogs provides an ecological and spiritual forecast of our ability as a society to accept that all wildlife are members of the community of life and that we, as their guardians, have a moral and legal obligation to protect them. It is time to take stock of the prairie dog genus as a whole, in order to assess its current straits and determine what steps must be taken to advance its recovery.

Of the federal and state agencies responsible for prairie dog management, not one received an A or a B. Grades ranged from a high of C+, earned by the state of Arizona, to several F's, earned by the states of Nebraska and South Dakota. In general, states with prairie dogs are either dragging their heels on prairie dog conservation or actively fighting it. The U.S. Fish and Wildlife Service, the agency with the most responsibility for ensuring that

prairie dogs and their ecosystems don't disappear, received a highly disappointing D-, given the Bush administration's corrupt refusal to protect all prairie dogs under the Endangered Species Act.

The state of South Dakota is the worst of the lot. On the day after the Fish and Wildlife Service announced its removal of the black-tailed prairie dog from the Endangered Species Act candidate list, Governor Mike Rounds outlined an "emergency" prairie dog control program, which amounted to a statewide massacre of prairie dogs. Using taxpayer funds, the state has poisoned tens of thousands of acres of prairie

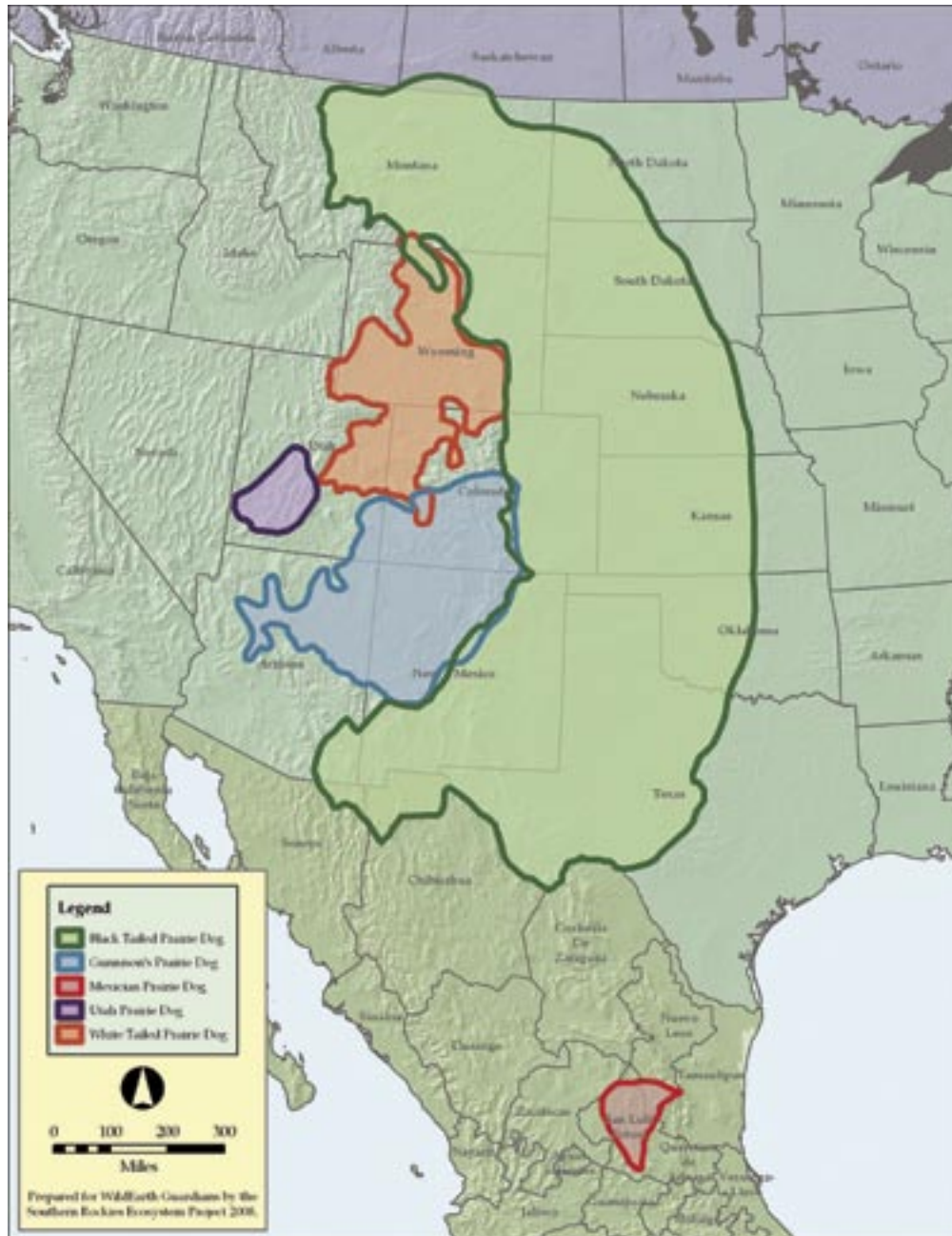
dogs, despite the cruel and inhumane nature of poisoning and the importance of prairie dog populations in South Dakota. Rounds has actively participated in efforts to destroy prairie dog populations in the Conata Basin—the best black-footed ferret recovery site in the world. These ferrets don't have a chance without their lifeline, the prairie dog.

While threats facing prairie dogs are daunting, there are many sources of hope. Shedding historic prejudices against prairie dogs, some western local governments are officially recognizing Groundhog Day as Prairie Dog Day. Citizens are mobilizing more than ever before on behalf of prairie dog ecosystems. Groups are using the rule of law—primarily in the form of the Endangered Species Act — to give prairie dogs an opportunity that the extinct passenger pigeon never had.

To provide prairie dogs and their ecosystems a



*Black-tailed prairie dog*



## Range of the Five Prairie Dog Species

fighting chance at survival and recovery, quick action is needed. We recommend the following:

Prompt federal protection of all unlisted species of prairie dogs—the black-tailed, white-tailed, and Gunnison's—under the Endangered Species Act. Increased recovery efforts for the federally Endangered Mexican prairie dog. Upgraded classification to Endangered status for the federally Threatened Utah prairie dog. Prohibition on poisoning and shooting of any prairie dogs. Active efforts to immunize prairie dogs against the exotic disease, sylvatic plague. Prohibition on destruction of occupied prairie dog habitats on

public lands. Elimination of any subsidies, particularly agricultural, that contribute to destruction of prairie dog populations and habitat. Any other steps necessary to protect and recover prairie dog populations and their habitat.

In general, prairie dogs now occupy less than 7% of their historic range. Political compromise must take a back seat to immediate steps that are biologically required to pull prairie dogs back from the brink. Time is running out for prairie dogs, and the many and diverse wildlife species they benefit.

# THE GRADES

## THE GRADING SYSTEM

We awarded each U.S. state that contains prairie dogs and primary federal agencies responsible for managing prairie dogs with a letter grade that rates performance in restoring and protecting prairie dogs and their habitat. We use the standard 4-point scale similar to that used at U.S. high schools, universities, or colleges. Our grading system includes plusses (+) and minuses (-). An "A" or 4.0 points signifies excellent performance, while an "F" or 0 is a failing grade. We tallied the grades based on combined performance in the following categories.

**Population:** The extent to which the state/federal agency is contributing to prairie dog populations going up, down, or holding steady.

**Habitat:** The degree to which the state/federal agency is working toward restoring prairie dog habitat or allowing habitat destruction.

**Poisoning policy:** The level of poisoning allowed, existence of poisoning subsidies or direct support, mandatory poisoning policies, approved poisoning, and restrictions on poisoning.

**Shooting policy:** Length of shooting season, license requirements, existence of shooting closures to protect sensitive areas and prairie dog complexes, and bag limits.

**Monitoring:** Frequency of population surveys; robustness of survey methods; records kept on shooting, poisoning, and plague epizootics; and public access to monitoring data. States or federal agencies are penalized if they do not maintain sufficient information to rate performance in the other categories.

**Conservation Activities:** To receive an above average grade in this category the state or federal agency must not only have a conservation plan but must actively work to recover and protect prairie dogs.

## PRAIRIE DOG REPORT CARD

### D- FISH AND WILDLIFE SERVICE

Between 2003 and 2007, the Service rejected citizen petitions to list the Gunnison's and white-tailed prairie dogs under the Endangered Species Act, removed the black-tailed prairie dog from the Endangered Species



JESS ALFORD

*Gunnison's prairie dogs*

Act candidate list when it issued a "not warranted" finding, and rejected a petition to upgrade the Utah prairie dog from Threatened to Endangered. The Service acknowledges that the black-tailed has lost 98% of its occupied habitat, the Gunnison's 97%, and the white-tailed at least 92%. It further notes that the Utah prairie dog is down to only 10,000 adult individuals. The Service is failing to protect and recover the listed Utah prairie dog. The Service allows shooting of up to 6,000 Utah prairie dogs every year under a rule it has admitted is biologically indefensible. Government agencies recognize that the Fish and Wildlife Service's translocation efforts often result in survival rates of only 5-10% or even lower. The Fish and Wildlife Service just missed being graded an F because it did acknowledge in 2007 that former employee and President Bush appointee, Julie MacDonald, wrongfully tampered with the white-tailed prairie dog decision. Under court order, the Service will re-examine its decision on the Gunnison's prairie dog petition by February 2008. Additionally, the Service overcame significant state and local opposition to do the right thing and reintroduce black-footed ferrets onto private land in Kansas.

### D- BUREAU OF LAND MANAGEMENT

The Bureau controls the oil and gas leasing program for most federal lands and some state and private lands

	POPULATION	HABITAT	POISONING	SHOOTING	MONITORING	CONSERVATION	FINAL GRADE
FWS	F	F	F	F	F	D	D-
BLM	F	F	I	F	F	D	D-
FS	F	F	D	D	B	D	D
AZ	C	D	B	B	B	C	C+
CO	D	D	F	B	B	F	D+
KS	F	F	F	F	B	D	D-
MT	D	D	D	F	B	D	D+
NE	F	F	F	F	F	F	F
NM	D	D	D	C	D	F	D
ND	F	D	D	F	C	F	D-
OK	C	C	B	D	I	C	C
SD	F	F	F	F	D	F	F
TX	C	D	D	F	I	C	D+
UT	D	F	D	B	C	D	D+
WY	D	D	F	F	C	D	D

(I = incomplete information)

## THE REPORT CARD

and has leased millions of acres with active prairie dog colonies or potential habitat. This agency usually fails to acknowledge the presence of prairie dogs when leasing or includes minimal restrictions to protect the animals. Only with significant public pressure did the BLM abandon one proposal to sell oil and gas leases within the Coyote Basin black-footed ferret recovery site in Utah.

# D

## FOREST SERVICE

The U.S. Forest Service chief rescinded a 2000 moratorium on poisoning black-tailed prairie dogs on National Forest System lands in 2004. Since 2004, the Nebraska National Forest and Pawnee National Grassland amended their land and resource management plans to allow poisoning. Thunder Basin and Dakota Prairie National Grasslands are in the process of developing such amendments.

# C+

## ARIZONA

*Black-tailed prairie dogs (extinct in Arizona), Gunnison's prairie dogs.*

Conservation-minded Arizona Game and Fish officials have persevered—albeit slowly—with their black-tailed prairie dog 12-step reintroduction plan and influenced resistant wildlife commissioners to go from opposing to approving the plan. Despite a spring seasonal shooting closure for Gunnison's prairie dogs, the state reported an increase in prairie dogs shot between 2002 and 2006—at

least 256,296 Gunnison's prairie dogs were shot. The black-tailed is listed as Endangered and the Gunnison's as Sensitive in Arizona.

# D+

## COLORADO

*Black-tailed prairie dogs, Gunnison's prairie dogs, white-tailed prairie dogs.*

Colorado's Department of Agriculture, Division of Wildlife, and state legislature have all undermined conservation progress with anti-prairie dog decisions. The state has a weak Conservation Plan for Grasslands Species, and it regularly monitors occupied area trends and shooting levels. Colorado has the most restrictive shooting regulations. In 1997, the state enacted a five-animal bag limit per day rule, which virtually eliminated contest killings. Wildlife officials enacted a spring shooting closure for all 3 species in 2006 but rescinded a total ban on black-tailed prairie dog shooting. The regulations allow unlimited shooting on private land. The Agriculture Department approved Rozol and Kaput-D in 2006 and 2007. In 1999, the state legislature enacted a law (SB-111) that makes relocating prairie dogs that live in habitat threatened by urban development nearly impossible. Monitoring and making plans do not equate to on-the-ground conservation. State scientists claim that black-tailed prairie dog numbers keep increasing, but their rejection of offered monitoring assistance by independent scientists and long delays in releasing published data call into question the accuracy of this claim.

## D- KANSAS

*Black-tailed prairie dogs.*

The Kansas Department of Wildlife and Parks has a black-tailed prairie dog conservation plan, monitors shooting levels, and conducts prairie dog area surveys but has made little headway in conserving the animals. The state legislature has, thus far, failed to repeal antiquated laws from the early 1900s that mandate prairie dog poisoning at the discretion of county commissioners. Commissioners can force private landowners to eradicate prairie dogs against their will and at their personal expense. The state wildlife and agriculture departments have aided Logan County in its extermination efforts, for example, by approving Rozol. Logan County hosts one of the last remaining prairie dog areas potentially suitable for black-footed ferret release. Though the Fish and Wildlife Service released ferrets on private land at the end of 2007, continued poisoning could prevent their recovery. The state did ticket The Nature Conservancy for illegally poisoning prairie dogs on its Smoky Valley Ranch.

## D+ MONTANA

*Black-tailed prairie dogs, white-tailed prairie dogs.*

In 2007, the Montana legislature voted down a proposal to give the Fish, Wildlife and Parks permanent authority to manage its black- and white-tailed prairie dogs. This removed protective status for prairie dogs, nullified several shooting closures across the state, and put conservation plans on indefinite hold. Had this not occurred, Montana may have received a B.

## F NEBRASKA

*Black-tailed prairie dogs.*

The Nebraska Game and Parks Board of Commissioners ordered the state's Game and Parks Department to stop all prairie dog conservation activities, including developing a plan and monitoring populations. The state approved the use of Rozol, effective October 1, 2004.

## D NEW MEXICO

*Gunnison's prairie dogs, black-tailed prairie dogs.*

Plague, poisoning, and habitat destruction are decimating both species. Oil and gas drilling is wreaking havoc on

habitat in the last remaining population strongholds, particularly on federal land, but also on private, state, and tribal lands. One bright spot: the New Mexico Game and Fish Department does not allow shooting on state trust lands. However, the agency does not limit shooting on other lands.

## D- NORTH DAKOTA

*Black-tailed prairie dogs.*

A survey conducted during 2005 and 2006 found 22,000 acres of prairie dogs across 607 colonies, up slightly from a 2001-2002 survey. This is just slightly over 1% of the historic estimate of 2 million acres of prairie dogs. The recent survey also determined that 43% of the active colonies had been poisoned between 2002 and the time of the survey. The North Dakota Game and Fish Department does not make prairie dog conservation a priority.

## C OKLAHOMA

*Black-tailed prairie dogs.*

At least on paper, Oklahoma has some policies that could help protect its last remaining prairie dogs. The state does not allow poisoning in counties where the total prairie dog acreage could be reduced below 1,000 acres. Oklahoma does not limit shooting.

## F SOUTH DAKOTA

*Black-tailed prairie dogs.*

Governor Rounds and the federal congressional delegation put considerable pressure on the Fish and Wildlife Service to remove black-tailed prairie dogs as an Endangered Species Act candidate species. The day after the Service announced its decision to remove the species' candidate status, the Governor unveiled his "emergency" prairie dog control program. The state doled out considerable taxpayer money to poison prairie dogs on private land. The state pressured the Forest Service to poison prairie dogs on the most successful black-footed ferret recovery site in existence, located in the Conata Basin on the Buffalo National Grassland. In 2007, South Dakota Fish, Game, and Parks released its latest survey of black-tailed prairie dogs and acknowledged that it counted inactive colonies in its total. The state enacted a spring shooting closure, though just on public land.

## D+ TEXAS

*Black-tailed prairie dogs.*

Less than 1% of Texas historic acreage of prairie dogs exists today. Yet, the state agriculture department distributes poison and recently approved Rozol and Kaput -D for use on prairie dogs. The state maintains a voluntary prairie dog colony monitoring program meant to promote conservation, but the state does not work toward conserving prairie dogs. The state enacted a ban on collecting and transporting prairie dogs as part of the pet trade in 2003.

## D+ UTAH

*Gunnison's prairie dogs, Utah prairie dogs, white-tailed prairie dogs.*  
The U.S. Fish and Wildlife Service has delegated much of its authority over Utah prairie dogs to the Utah Division of Wildlife Resources, which routinely fails to produce annual reports on the status of this highly imperiled,

listed species. Utah's prairie dogs have declined substantially due to plague, agriculture, and oil and gas development. Both Gunnison's and white-tailed prairie dogs are designated as "controlled" wildlife species by the Wildlife Department, and technically killing of them is illegal. But, the Division does not enforce this. The state has a spring seasonal closure on shooting Gunnison's prairie dogs but no restrictions on shooting white-tailed prairie dogs except for the Coyote Basin black-footed ferret recovery site, which is closed to shooting.

## D WYOMING

*Black-tailed prairie dogs, white-tailed prairie dogs.*

Rampant oil and gas development is now destroying prairie dog habitat throughout the state. The state agriculture department recently approved Rozol for use on prairie dogs. The Wyoming Weed and Pest Control Act of 1973 allows counties to control prairie dogs on private land if damage has been documented to neighboring landowners.

## POPULATION STATUS

The area occupied by prairie dogs has declined dramatically since the late 1800s. Farmers in the Great Plains destroyed millions of acres of prairie dog habitat. In the early 1900s, farmers and ranchers, in coordination with the state and federal governments, began deliberate campaigns to exterminate prairie dogs completely. Despite these efforts, prairie dog populations have hung on, though at very suppressed levels. This has given the impression that prairie dogs are impossible to drive to extinction. Poisoning, shooting, habitat loss, and plague continue to contract ranges and fragment, isolate, and shrink colonies. Most alarming today is the near total loss of sizeable prairie dog complexes. Though we do not have precise counts of historic prairie dog population sizes prior to large-scale extermination programs, we do have scientifically-based estimates of their decline.

RICH READING



*Black-tailed prairie dogs*

### BLACK-TAILED PRAIRIE DOG

Black-tailed prairie dogs once occupied approximately 100 million acres within their historic range. In 2004, the U.S. Fish and Wildlife Service estimated only 1,894,000 acres still existed. That equates to a 98% loss of occupied habitat. Black-tailed prairie dogs have disappeared from where they lived in Arizona and Sonora, Mexico.

### GUNNISON'S PRAIRIE DOG

Gunnison's prairie dogs have lost approximately 97% of occupied habitat, dwindling from 24 million acres historically to only 722,000 acres as of 2006.



JESS ALFORD



*Gunnison's prairie dog*

JESS ALFORD



*Utah prairie dog*

ELAINE MILLER BOND



*Mexican prairie dog*

THEODORE C. MANNO



*White-tailed prairie dog*

### **MEXICAN PRAIRIE DOG**

The historic range of the Mexican prairie dog spread across 321,000-371,000 acres. In the early 2000s, researchers found only 54 active colonies within 80,000 acres. In total 75-80% of the Mexican prairie dog's range has been lost over the last century. Over 50% of the remaining active colonies measured less than 250 acres, and less than 10% (5 colonies) measured more than 2,500 acres.

### **UTAH PRAIRIE DOG**

The Utah prairie dog range has dwindled from tens of thousands to a mere 7,000 acres. According to U.S. Fish

and Wildlife Service data, Utah prairie dog occupied acreage may have declined by close to 90%. Because so few Utah prairie dogs remain and their current range is so small, a real population estimate is possible. Only about 10,000 adult individual Utah prairie dogs exist in the state today.

### **WHITE-TAILED PRAIRIE DOG**

White-tailed prairie dogs occupy less than 805,000 acres. This is down from an historic estimate of 10-44 million acres. The best scientific information indicates that white-tailed prairie dog occupied acreage has declined by 92% to 98% since the late 1800s.

## COUNTING PRAIRIE DOGS

Prairie dog populations are not usually measured in absolute numbers, especially in large areas. The metrics of occupied area, occupied habitat, or acres—basically the total size of active colonies—often substitutes for population estimates. Though the report card conforms to this standard, there are significant limitations to using occupied habitat over actual population numbers. Occupied area is an imprecise measure of abundance because prairie dog densities vary considerably. Increases in areas occupied by prairie dogs may actually signal a response to the stresses of drought and livestock grazing, when less forage is available. Prairie dog expansion in conditions of drought and/or grazing can therefore give the false impression that populations are increasing when they are actually declining and less healthy.

## THREATS FACING PRAIRIE DOGS

### HABITAT DESTRUCTION

Prairie dog habitat has been converted to cropland, roads, wellpads and infrastructure for oil and gas drilling, municipalities, reservoirs, and other land uses. In addition, habitat degradation from proliferation of non-native weeds and woody shrubs, desertification, and fire suppression has reduced remaining potential habitat.

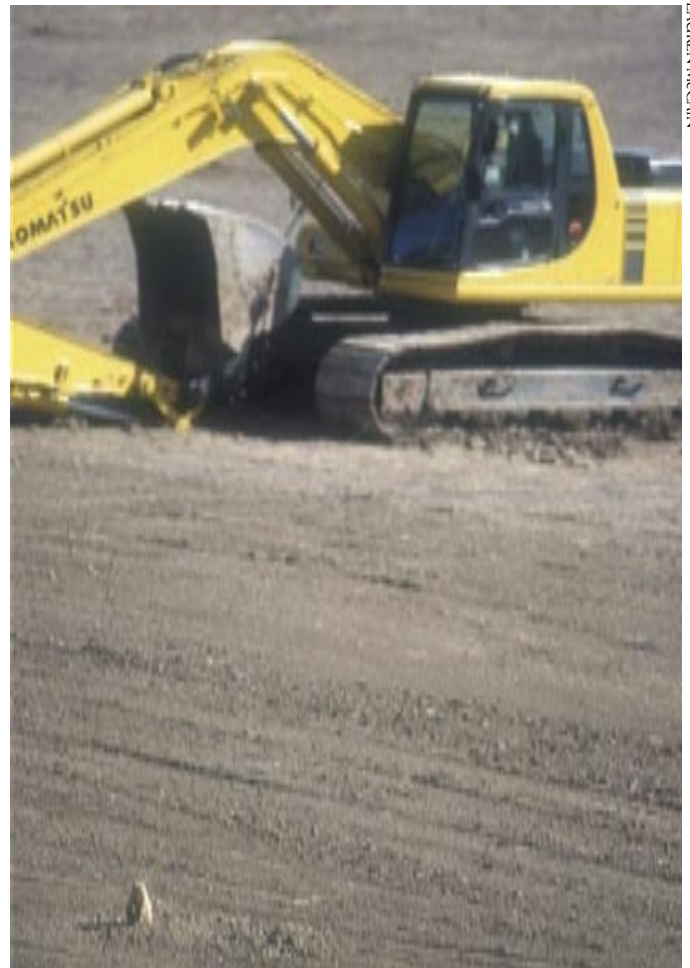
### CONVERSION OF NATURAL HABITAT TO CROPLAND

Converting native grassland to cropland directly and immediately destroys prairie dog habitat, and few farmers tolerate prairie dogs. Farming became the first major encroachment into prairie dog habitat following the Homestead Act of 1864 that catalyzed large-scale settlement and plowing of the Great Plains, the black-tailed prairie dog's primary range. Converting native prairie grasslands into cropland permanently destroyed close to 40% of black-tailed prairie dog habitat during the homesteading period, especially in the eastern part of the species' range. Cropland conversion slowed considerably once drought hit in the 1930s, causing the Dust Bowl. However, a recent push for ethanol as a vehicle fuel is increasing corn planting across the country, including black-tailed prairie dog habitat.

Farming became the biggest threat to the Mexican prairie dog recently, especially in the northern part of the species' range. In the late 1990s, scientists estimated that as much as 98% of the 80,000 acres of remaining habitat was at risk to cropland conversion, though limited capacity to irrigate may slow habitat destruction. Prairie dog surveys conducted in the early 2000s found that farmland surrounded most colonies.

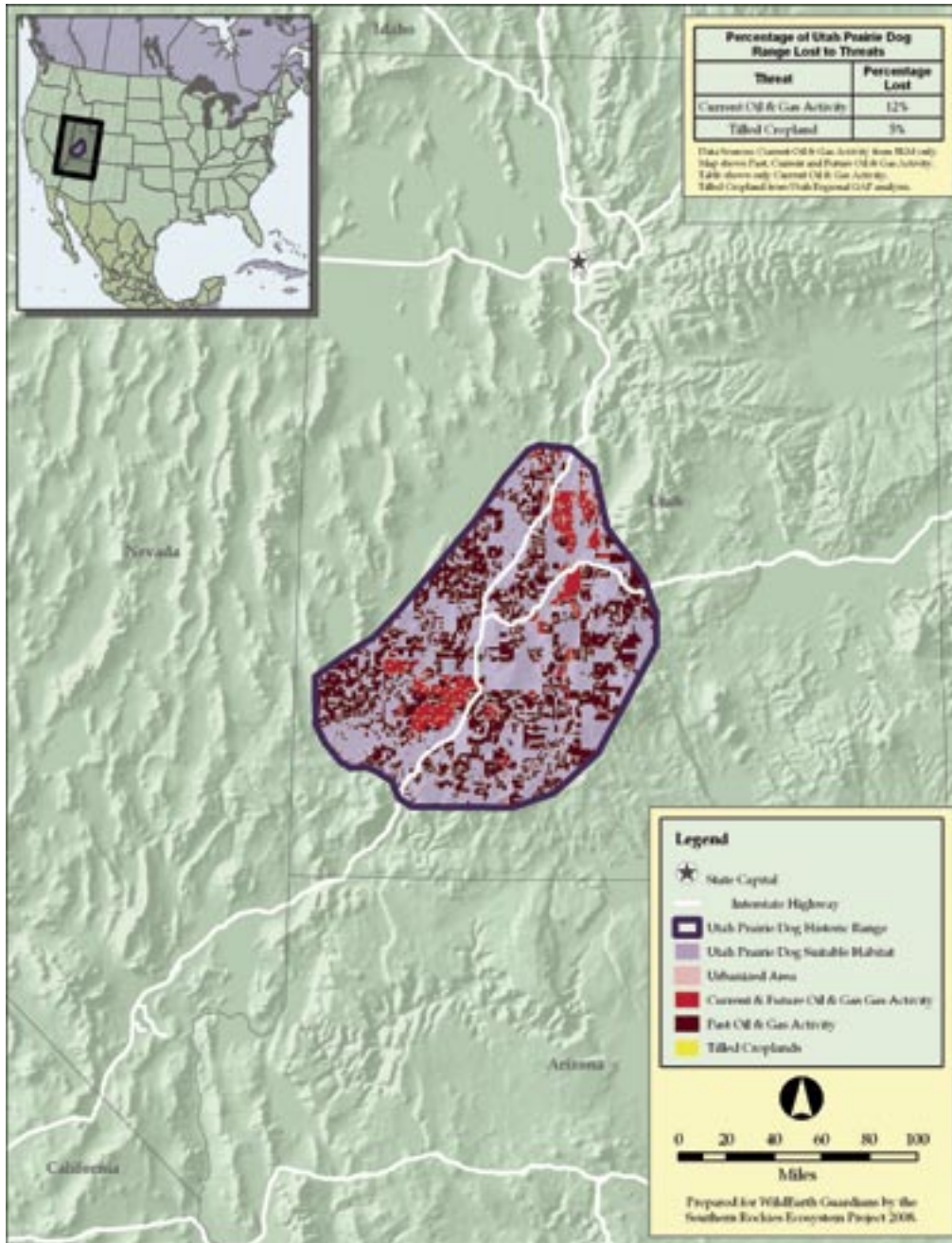
Because Utah and white-tailed prairie dogs tend to live in more arid, shrubby areas, cropland conversion is

not a primary cause of habitat loss. However, irrigated farms have destroyed habitat for these species and also the Gunnison's prairie dog, too. While Utah prairie dogs can do relatively well on irrigated areas, they are seldom tolerated.



LAUREN MCCAIN

*Prairie dogs in urban areas often succumb to poisoning, trapping, bulldozing, and vehicle mortality.*

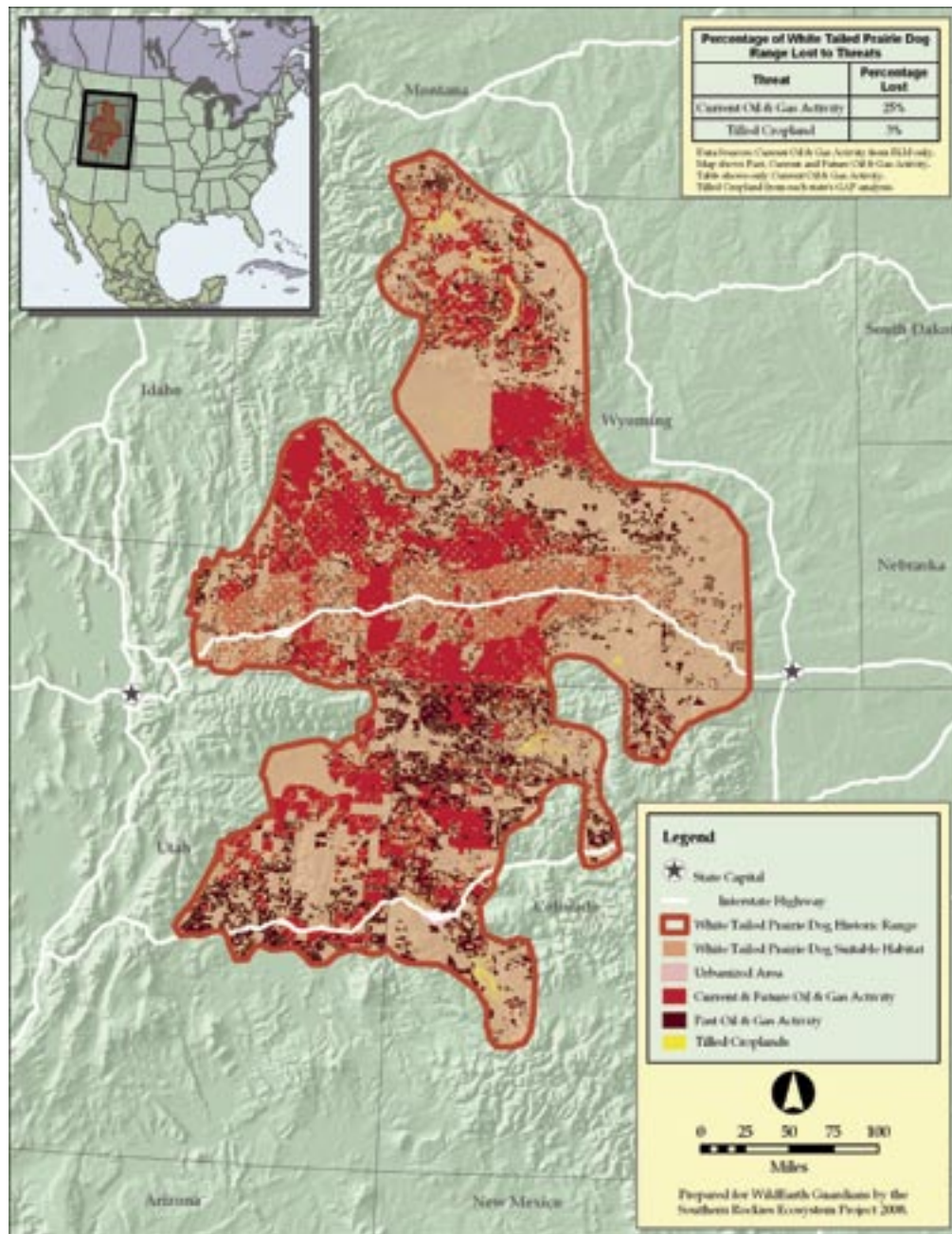


## Major Threats to Utah Prairie Dogs

### OIL AND GAS EXPLORATION AND EXPLOITATION

Rampant oil and gas development in the last few years continues to chew up prairie dog habitat in the United States. The Bureau of Land Management (BLM) is the agency responsible for selling oil and gas leases on most federal lands and some state and private lands. The BLM generally places few restrictions on drilling in occupied prairie dog habitat, and these restrictions can often be waived. Especially alarming is the speed at which our public lands are being exploited for oil and gas interests,

including BLM lands, National Forests and Grasslands, and even National Wildlife Refuges. Most Gunnison's, Utah, and white-tailed prairie dog federal land habitat exists on BLM lands, where fossil fuel exploration, leasing, and drilling is occurring at a near exponential rate. The increased use of Categorical Exclusions by the BLM is concerning; these bypass environmental review for new oil and gas wells as required under the National Environmental Policy Act. Instead of environmental assessments, brief checklists without public comment or independent scientific reviews amount to rubberstamps on new wells and more prairie dog habitat lost.



## Major Threats to White-tailed Prairie Dogs

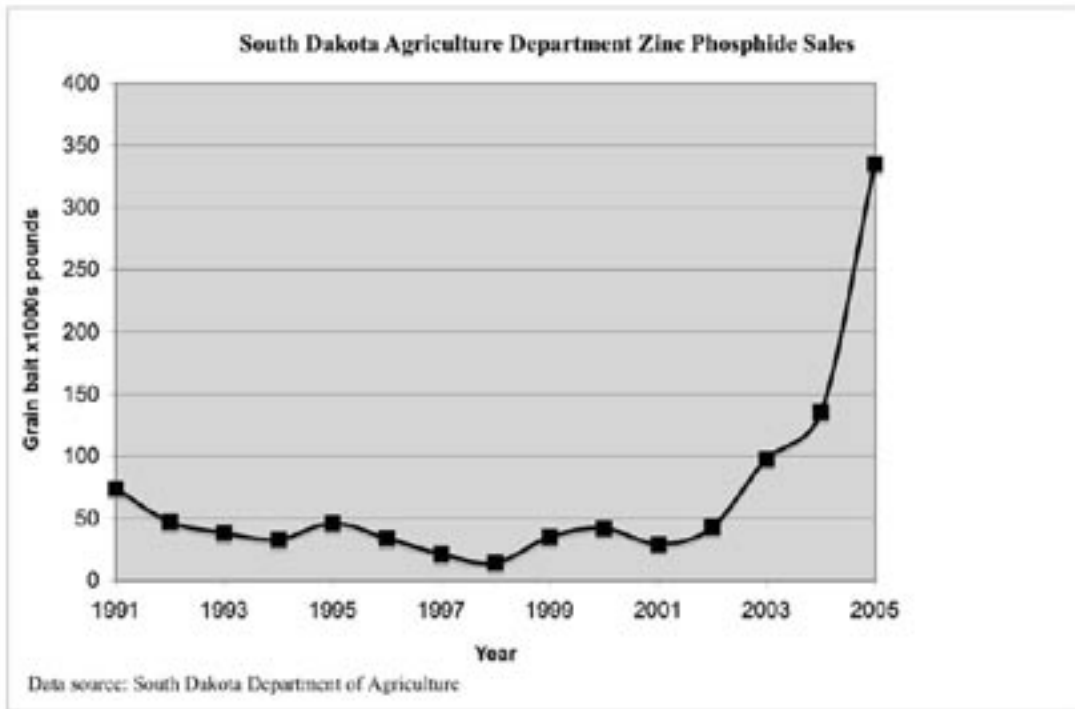
### URBAN SPRAWL

As people flock to the West, prairie dog habitat loss to urbanization becomes an increasing threat. Prairie dogs in urban areas often succumb to poisoning, trapping, bulldozing, and vehicle mortality. Though still fairly localized in most regions, habitat loss to cities and suburbs is significant. Human population expansion across Colorado's Front Range consumes black-tailed prairie dog habitat at an alarming rate, especially in towns such as Denver, Boulder, Fort Collins, Longmont, and Pueblo. Gunnison's prairie dogs are sacrificed to make

way for people in Flagstaff, Arizona, and Albuquerque, Santa Fe, and Taos, New Mexico. White-tailed prairie dogs are losing ground in Delta, Grand Junction, and Montrose, Colorado, as well as Laramie, Wyoming. For the Threatened Utah prairie dog, colonies are often removed and their habitat destroyed from municipal development and golf courses.

### HUMAN PERSECUTION

Intolerance of prairie dogs by the livestock industry, some suburban landowners, policy makers, and government



agents is driving a current trend of increasing eradication. Intolerance is driven largely by misperceptions about the effects prairie dogs have on the landscape. Ranchers tend to believe that prairie dogs compete with cattle for forage at much higher levels than research suggests and often argue that prairie dog burrows pose a significant hazard to livestock. Scientific research illustrates that prairie dogs have little impact on livestock operations when livestock are properly managed. Prairie dogs can increase the overall productivity of grasslands by preventing weed and shrub encroachment and increasing soil and plant nutrients.

Despite studies demonstrating that poisoning prairie dogs costs more than living with them, intolerance of prairie dogs leads some communities to take economically irrational actions against them.

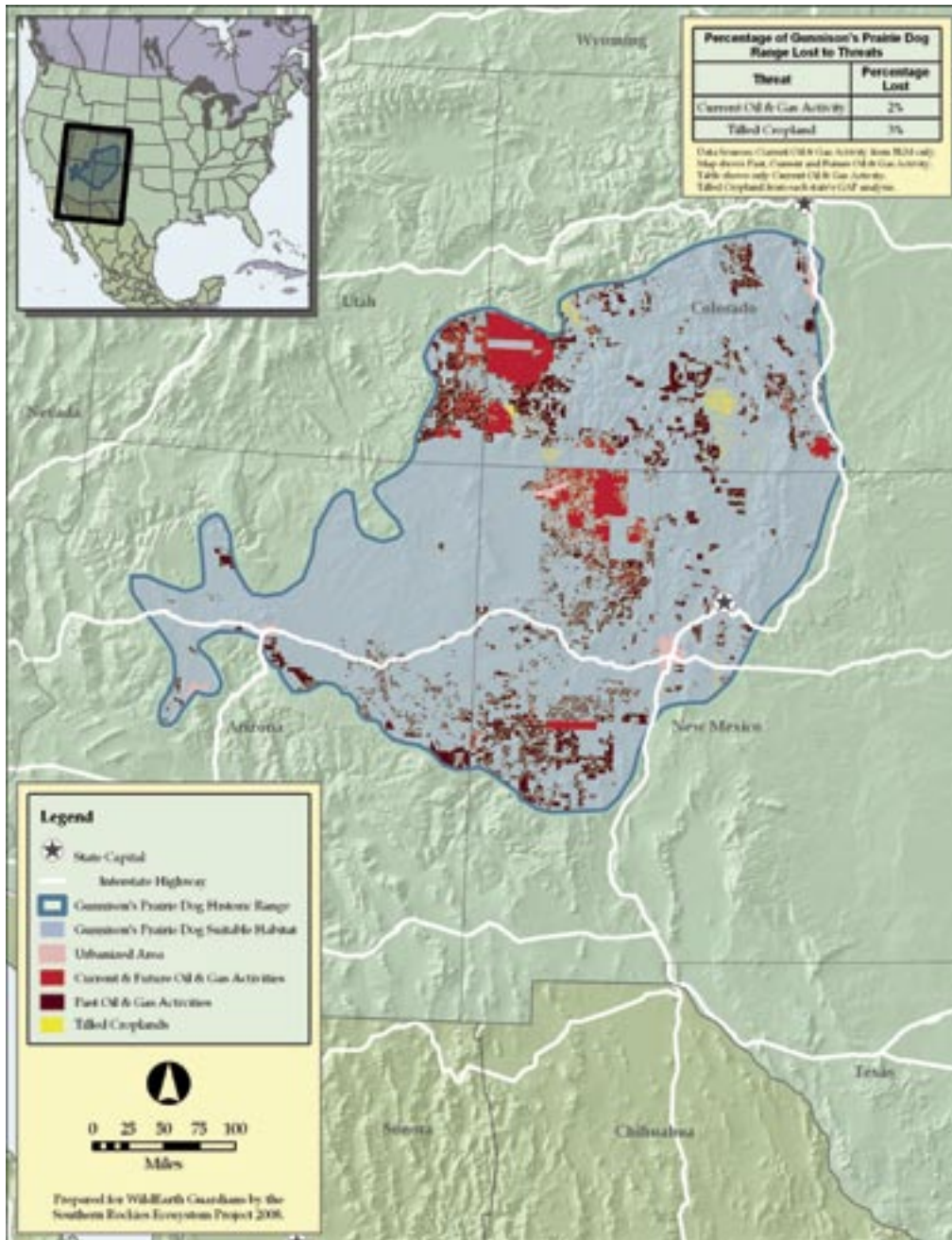
### POISONING

In the U.S., the Environmental Protection Agency (EPA) regulates prairie dog toxicants under the Federal Insecticide, Fungicide, and Rodenticide Act, but delegates implementing authority to the states. Recently, several states began seeking approval from the EPA



JESS ALFORD

*In the words of renowned naturalist author Terry Tempest Williams, "If the prairie dog goes, so goes an entire ecosystem. Prairie dogs create diversity. Destroy them and you destroy a varied world."*



## Major Threats to Gunnison's Prairie Dogs

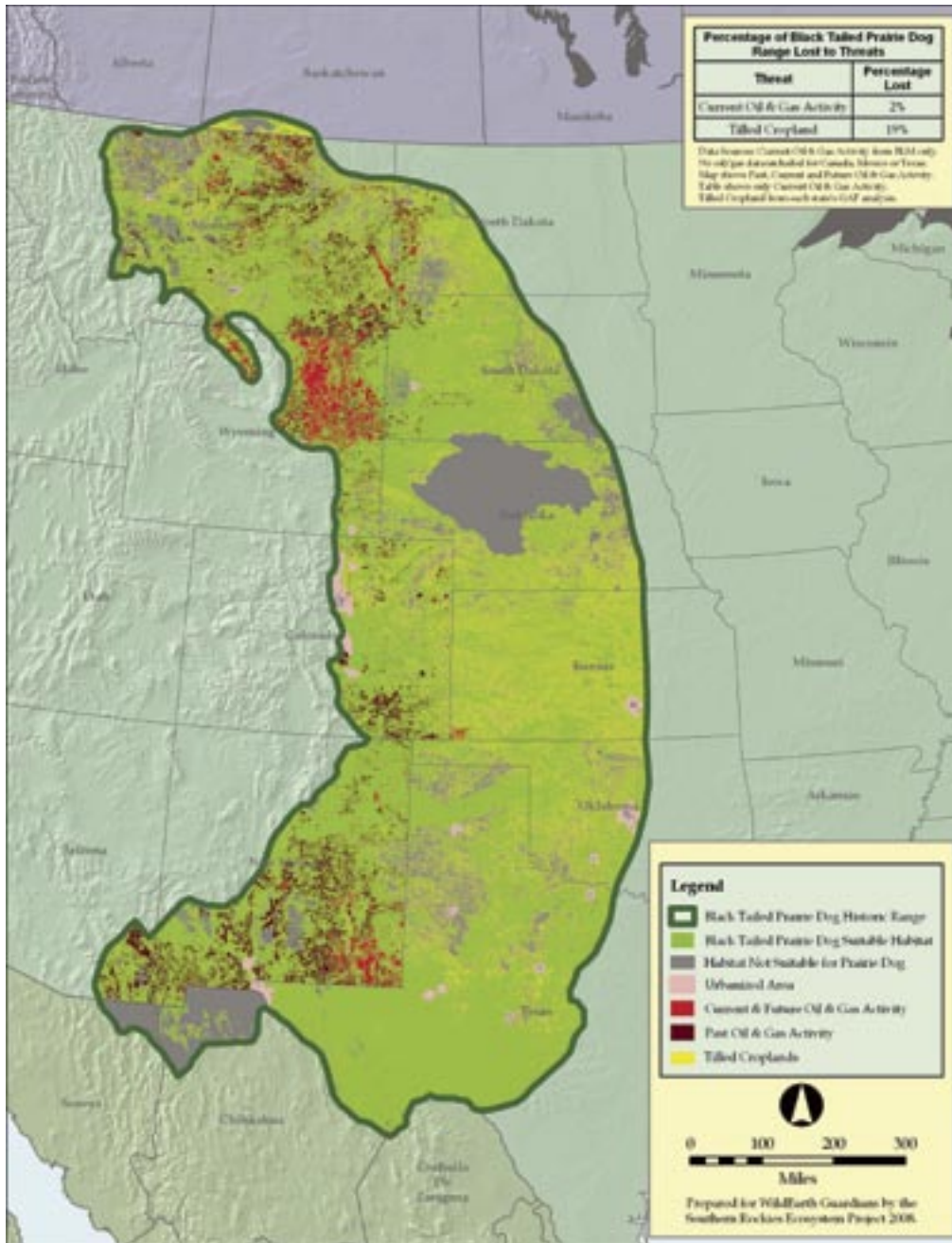


*Prairie dog killed by poison.*

to allow the use of toxicants previously banned for prairie dog extermination, including chlorophacinone (trade name Rozol), diphacinone (trade name Kaput-D), and warfarin (also known as brodifacoum).

For example, since 2004 Colorado, Kansas, Nebraska, Texas and Wyoming all received EPA approval for use of Rozol. This followed removal of the black-tailed prairie dog from the Endangered Species Act candidate list by the U.S. Fish and Wildlife Service. Despite approval of additional poisons, state wildlife officials have reported an increase in the use of illegal poisons, such as strychnine. Despite their Endangered status, prairie dog poisoning remains a severe threat to Mexican prairie dogs.

Few states that support prairie dogs monitor the number of acres treated with poison or the amount of



## Major Threats to Black-Tailed Prairie Dogs

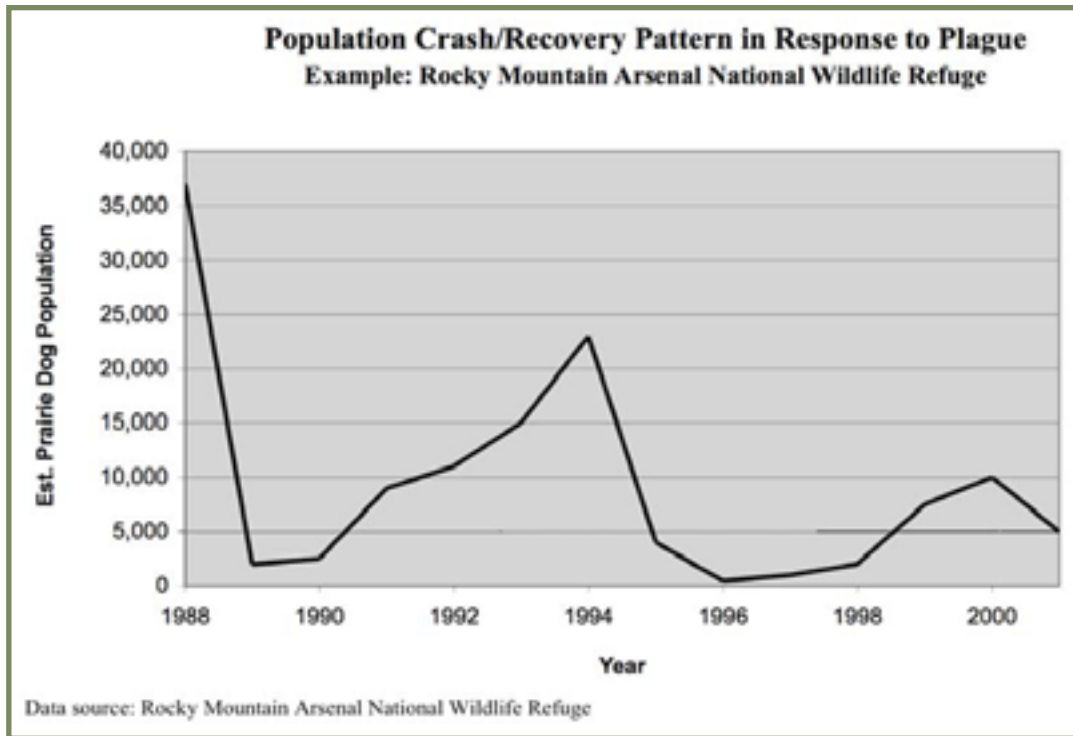
poison sold and used. Thus, the true extent of prairie dog poisoning remains elusive. Poisoning has clearly been on the rise in South Dakota [see graph, page 11] and is likely increasing in other states.

Poisoning prairie dogs causes the animals considerable pain, suffering and, of course, death. For example, zinc phosphide induces vomiting, convulsions, and paralysis that can occur within 20 minutes of ingestion, but can last 2-3 days until death. Aluminum phosphide causes acute fluid build-up in the lungs and other painful symptoms when the gas mixes with moisture in an animal's lungs.

Chlorophacinone causes internal hemorrhaging that can continue over the course of 5 or more days until death. Exterminating prairie dogs also kills non-target wildlife, causes local losses and overall declines of prairie dog associate species, and destroys rich grassland habitat—often permanently.

### SHOOTING

People shoot prairie dogs for population control and as live targets. Many hunters consider prairie dog shooting unethical because shooters do not actually "hunt" their



quarry and do not harvest the animals for food or other uses. Instead, shooters typically sit behind benches and use prairie dogs as live targets to kill, often with exploding, hollow-point bullets.

Along with direct mortality, shooting harms surviving prairie dogs, their colonies, and other wildlife that lives in colonies or feeds on prairie dogs. Shooting causes detrimental behavioral changes, loss of reproductive capacity, diminished body condition, and higher stress levels in prairie dogs. Shooting can also cause colony abandonment, changes in population structure, increased predation, decreased population density, decreased colony expansion rates, and habitat fragmentation. Birds of prey and carnivorous mammals, including the endangered black-footed ferret and the recently de-listed bald eagle, can scavenge shot prairie dogs. The exploding bullets used to shoot prairie dogs spread lead fragments

that can kill these animals.

Few states set meaningful limits on prairie dog shooting or make any attempt to monitor the number of prairie dogs shot. The U.S. Fish and Wildlife even allows shooting of the Utah prairie dog—a federally Threatened species with only about ten thousand adult individuals left. The Service enacted a special rule that allows up to 6,000 animals to be shot each year.

## TRANSLOCATION OF UTAH PRAIRIE DOGS

Many people hate prairie dogs so much that they do not tolerate the presence of any Utah prairie dogs, even though they are nearly extinct. The U.S. Fish and Wildlife Service initiated an expensive endeavor to relocate animals from private land to public. Yet, government agencies routinely recognize that their translocations often result in survival rates of only 5-10% or lower.

## PLAGUE

Today, sylvatic plague is one of the greatest threats to prairie dog survival. Plague is caused by the bacterium *Yersinia pestis* and is carried by fleas, the primary plague vector. The same bacteria causes bubonic plague in humans, including the "Black Death" pandemic in the 1300s that killed approximately 75 million people or between 30-70% of Europe's human population. Though rarely fatal in humans these days, the disease usually kills



*A prairie dog shooter takes aim.*



over 99% of prairie dogs in a colony and spreads quickly across the landscape to infect other colonies.

Plague exists throughout the ranges of the Gunnison's, Utah, and white-tailed prairie dogs. The disease also occurs throughout most of the black-tailed prairie dog range, absent only from the eastern and southern-most edges. Once, researchers believed that a "plague line" existed that prevented plague from reaching epizootic levels in black-tailed prairie dogs east of the 102nd meridian. But the disease crossed that line in the last few years, causing major die-offs in South Dakota. Climate change will likely spread plague farther south and east. The Mexican prairie dog is the only species that has not, thus far, been affected by plague.

Sailors from Asia accidentally introduced plague to North America in about 1900 when infected Norway rat

stowaways jumped ship in California. The disease spread east and by 1940 had affected all 4 U.S. species. Prairie dogs have not had time to evolve immunity to the disease. Plus, coloniality speeds transmission between animals. Compounding these problems, the continued loss of prairie dogs to poisoning, shooting, and habitat destruction makes colonies and complexes even more vulnerable and less able to recover. Preventive measures, such as insecticide treatment of burrows or vaccinations, which reduce mortality, are difficult to apply over large-scales.

While prairie dog colonies can recover even after major die-offs, long-term research demonstrates that colonies and complexes experiencing recurring epizootics never fully regain their pre-plague population sizes. Once they recover, plague usually hits again in 5-10 years [see graph, page 14].

## BACKGROUND INFORMATION ON PRAIRIE DOGS

### PRAIRIE DOG CHARACTERISTICS

Prairie dogs are rodents and members of the squirrel family. Five different species of prairie dogs live in colonies across North America's grasslands and shrublands of the Great Plains and Sagebrush Sea of the intermountain west.

The 5 species fall into 2 main taxonomic groups, or subgenera: those with white-tipped tails and those with black-tipped tails. Prairie dogs of the white-tailed group live in flat and open shrub, sagebrush, and grassy regions within the northern desert grasslands, Canyonlands, Rocky Mountains, and Great Basin. They include the white-tailed prairie dog (*Cynomys leucurus*), Gunnison's prairie dog (*C. gunnisoni*), and Utah prairie dog (*C. parvidens*). The species of this group tend to live at higher elevations and drier, or more xeric, shrubbier environments than their black-tailed cousins. The prairie dogs with black tails reside east of the Rockies. The black-tailed prairie dog (*C. ludovicianus*) is the most wide-ranging of all the species, inhabiting the short- and mid-grass prairies of the Great Plains and northern Chihuahuan Desert. Mexican prairie dogs (*C. mexicanus*) occur in northeastern Mexico in the southern region of the Chihuahuan Desert along the Mexican plateau. These species evolved in semi-arid, or more mesic, climates associated with true grasslands. The burrow density of their colonies is generally higher than the white-tailed species.

Prairie dogs reproduce relatively slowly, and this limits population recovery. Unlike many other rodents, breeding females have just 1 litter per year. Litter sizes range from 1-8 pups at birth, but the most common litter size at



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*Incredibly, studies of Gunnison's prairie dogs have found that prairie dogs have a verbal language with different dialects and new "word" formations.*

weaning, when juveniles first appear aboveground and are about 5 weeks old, is 3 or 4. Primary natural causes of mortality include predation, infanticide, and the inability to survive the winter. If they survive their first year, males average a 2-3 year lifespan and females 4-5 years.

# Wildlife Dependent upon Prairie Dogs

RICH READING



*Endangered black-footed ferrets depend on prairie dogs for up to 95% of their diet and prairie dog burrows for shelter.*

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*Western burrowing owls rarely venture off prairie dog colonies, unless migrating. They nest in burrows.*

RUSSELL GRAVES



*The diminutive swift fox uses prairie dog burrows for denning and likes the rodent hunting opportunities on colonies.*

UNITED STATES GEOLOGICAL SURVEY



*Mountain plovers seek out the short grasses of prairie dog colonies for nesting.*

ISTOCK



*Few raptors are large enough to hunt prairie dogs, but the rodents are a favorite of the ferruginous hawk.*

Incredibly, studies of Gunnison's prairie dogs have found that prairie dogs have a verbal language. For example, they use specific alarm calls to differentiate various predator types. This enables individuals to determine the best response to avoid being eaten without using excessive energy. In scientific field experiments, prairie dogs used distinctive sounds to distinguish between people wearing different colored clothing or displaying different behaviors. When faced with a new experience, they can create new "words". Prairie dogs from different regions use different dialects.

## COLONY LIFE

Prairie dogs live in colonies. Historically, large complexes (groups of nearby colonies within 4 miles of each other) were common throughout all species' ranges with a mix of smaller and larger isolated colonies interspersed among big complexes. Coloniality has its costs and benefits. Prairie dogs share responsibility for detecting predators, so everyone gets to spend more time eating. However, close proximity also facilitates the spread of disease—most notably sylvatic plague. The colonial and diurnal (active during the day) nature of prairie dogs also fosters the perception that prairie dog populations are healthy, if not thriving. Unlike most other imperiled wildlife elusive to the human eye, prairie dogs and their colonies are quite visible. Moreover, it is a common misconception that many prairie dogs live in one burrow when in reality more burrows exist within a colony than prairie dogs.

Colony complexes represent an important adaptation for prairie dog survival. This adaptation

enables repopulation, via immigration from other nearby colonies, of a colony whose inhabitants disappear due a catastrophic event. This is an example of a "rescue effect"—the ability of a healthy species' population or subpopulation to provide dispersing individuals to a poorly performing population or subpopulation, allowing it to rebound in the face disaster. Prairie dogs are losing the rescue effect capacity. Eradication programs and habitat destruction largely broke apart the pattern of colony complexes across the ranges of all 5 species. Just a few complexes remain today, and these are under threat. Thus, prairie dogs are extremely vulnerable to catastrophes, because their colonies have become isolated and fragmented.

## PRAIRIE DOGS AS KEYSTONE SPECIES

Prairie dogs are "keystone species," meaning that they have a unique impact on their biological communities that is greater than expected based on their numbers. By grazing, digging burrows, and establishing colonies, prairie dogs are "ecosystem engineers" who create habitat for other wildlife. Some scientists describe regions inhabited by prairie dogs as "prairie dog ecosystems" because they are significantly different than uncolonized areas. Prairie dog colonies are biodiversity hotspots, functioning as islands of life in a sea of open grass and sage.

Over 200 vertebrate species have been observed on prairie dog colonies. At least 9 wildlife species depend heavily on prairie dogs for their survival, and many



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*Prairie dogs live in colonies, which has both costs and benefits.*



*Political compromise must take a back seat to immediate steps that are required to pull prairie dogs back from the brink of extinction. Contact WILDEARTH GUARDIANS to get involved.*

others benefit from their existence. Black-footed ferrets, burrowing owls, ferruginous hawks, mountain plovers, and swift foxes have all declined at least in part due to prairie dog losses. Prairie dogs serve as prey for a large number of predators, including black-footed ferrets, badgers, bobcats, coyotes, ferruginous hawks, golden eagles, prairie rattlesnakes, and swift foxes. A large number of animals use prairie dog burrows for shelter, denning, and breeding, including black-footed ferrets, badgers, burrowing owls, cottontail rabbits, swift foxes, as well as many reptiles, amphibians, insects, and other rodents.

Prairie dog digging, eating, and vegetation clipping also shapes their habitat in unique ways. The process of digging and maintaining their burrows mixes, fertilizes, and aerates the soil and increases soil moisture. Prairie dogs keep colony vegetation low so they can better see approaching predators. The constant clipping and eating of grasses and forbs increases their nutrient content and makes the plants more palatable and succulent for other animals. Prairie dog grazing also helps to maintain grasslands by preventing the encroachment of woody shrubs. By protecting prairie dogs we can safeguard healthy grass- and shrublands in North America.

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# WILDEARTH GUARDIANS

## About WildEarth Guardians

WildEarth Guardians protects and restores wildlife, wild rivers and wild places in the American West. Taking initiatives to conserve prairie dogs has been a significant focus of our work for close to a decade. We employ a "focal species" approach to wildlife conservation. Because prairie dogs are keystone focal species of several grassland and sagebrush ecosystems, concentrating resources to conserve prairie dogs advances the protection and restoration of habitat for a rich diversity of associated wildlife. WildEarth Guardians officially formed in 2008 with the merging of Forest Guardians, Sinapu, and the Sagebrush Sea Campaign. WildEarth Guardians is a non-profit 501(c)(3) organization with offices in Arizona, Colorado, and New Mexico.

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