

Utah Prairie Dog

(Cynomys parvidens)

Status of the Species: May 2012

U.S. Fish and Wildlife Service

Utah Field Office



2369 West Orton Circle, Suite 50

West Valley City, Utah 84119

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Executive Summary

The purpose of this report is to summarize the status of the Utah prairie dog, a federally threatened species. For more information regarding the species, please contact the Utah Field Office by mail at 2369 West Orton Circle, Suite 50, West Valley City, Utah 84119, or by telephone at (801) 975-3330.

Literature Citations

Literature Citations should read:

U.S. Fish and Wildlife Service. 2012. Utah Prairie Dog (*Cynomys parvidens*) Status of the Species: May 2012. U.S. Fish and Wildlife Service, West Valley City, Utah. 14 pp.

Status of the Species / Critical Habitat

Species/Critical Habitat Description

The Utah prairie dog (*Cynomys parvidens*) is the smallest species of prairie dog. Individuals are typically 305 to 360 millimeters (mm) (12 to 14 inches (in)) long (Hollister 1916) and weigh about 640 to 1410 grams (1.4 to 3.1 pounds) (Wright-Smith 1978). Utah prairie dogs range in color from cinnamon to clay. The Utah prairie dog is distinguished from other prairie dog species by a relatively short (30 to 70 mm / 1.2 to 2.8 in) white- or gray-tipped tail and a black “eyebrow” above each eye (Pizzimenti and Collier 1975; Hoogland 2003).

The Utah prairie dog was listed as an endangered species on June 4, 1973 (38 FR 14678), pursuant to the Endangered Species Conservation Act of 1969. At the time of listing, the species was threatened with extinction due to habitat destruction, modification or severe curtailment of habitat, over exploitation, disease, and predation. The species was reclassified as threatened on May 29, 1984 (49 FR 22330), with a special rule to allow take of prairie dogs on agricultural lands. On June 2, 2011, we proposed revisions to our 1991 special 4(d) rule. These proposed revisions included identifying maximum allowed take, locations where take is allowed (agricultural lands and properties near conservation lands), timing of allowed take, and methods of allowed take. Based on comments received, we are considering changes to the proposed rule.

Critical habitat has not been designated for this species.

Life History and Population Dynamics

Utah prairie dogs spend four to six months underground each year during harsh winter months (Hoogland 2001). Some observations suggest that Utah prairie dogs hibernate. However, other evidence suggests that at lower elevations Utah prairie dogs may enter torpor more intermittently at the beginning and end of the hibernation season and may be seen above ground in mild weather (Collier and Spillet 1975; Hoogland 1995, 2001; Lehmer and Biggins 2005). Torpor patterns of Utah prairie dogs might be influenced by environmental conditions, and may differ across the species’ range (Lehmer and Biggins 2005).

Adult males usually cease surface activity during August and September, followed by adult females several weeks later (lactating females enter hibernation later than non-lactating females) (Hoogland 2003). Juvenile prairie dogs remain active as late as November. Temperature is thought to trigger emergence from hibernation beginning in mid-March to mid-April. Mating occurs soon after emergence.

One half to two thirds of Utah prairie dog’s adult population is female (Mackley *et al.* 1988). Approximately 67 percent of females wean a litter each year (Hoogland 2001). Each female

produces an average of 3.88 pups which are born in April after a 30 day gestation period (Pizzimenti and Collier 1975; Wright-Smith 1978; Mackley *et al.* 1988; Hoogland 2001). Young appear above ground at five to seven weeks of age, are full grown by October of their first year, and reach sexual maturity at one year. Less than 50 percent of both males and females survive the first year (Hoogland 2001). Only about 20 percent of females and less than 10 percent of males survive to age 4 (Hoogland 2001). Due to their limited reproductive rates, short life span and high mortality rates, numbers of individuals counted within a colony can fluctuate greatly throughout the year with low points in the spring and peaks in the late summer when adults and pups are above ground.

Traditionally, it was thought that natal dispersal (movement of first year animals away from their area of birth) and breeding dispersal (emigration of sexually mature individuals from the area where they copulated) were male-biased, leading to higher mortality rates to young males from predation (Hoogland 2003). However, recent genetic work in a range wide study showed that of the Utah prairie dogs that dispersed, 25 percent were adult females (Brown 2009).

Young male Utah prairie dogs disperse in the late summer with average dispersal events of 0.56 kilometer (km) (0.35 mile (mi)), long-distance dispersal events of up to 1.2 km (0.75 mi), and unusually long-distance dispersals of 6 km (4 mi) (Mackley *et al.* 1988; Brown *et al.* 2011).

Utah prairie dogs are organized in social groups, or clans, consisting of an adult male, several females, and their young (Wright-Smith 1978). Clans are loosely organized with no observable dominance hierarchy. Geographic boundaries of clans remain fairly constant within a colony, and young prairie dogs are the only ones to regularly cross boundaries. Utah prairie dogs will use common feeding grounds, but still maintain elements of territoriality in those areas (Wright-Smith 1978). The typical home range of the Utah prairie dog is 229 meters (m) (750 feet (ft)) (Crocker-Bedford 1975; Wright-Smith 1978) and the distance at which disturbance affects a prairie dog's normal behavior is estimated to be 107 m (350 ft) (Ashdown 1995). Social behaviors, especially socially facilitated vigilance and warning vocalizations, are important to survival of individuals in colonies and to the overall well-being of the colony. The adult females play the major role in caring for young, they are also the primary ones that provide warning of danger (Wright-Smith 1978).

Utah prairie dogs forage primarily on grasses and forbs, and tend to select those with higher moisture content (Crocker-Bedford 1976). They often select colony sites in swales where the vegetation can remain moist even in drought conditions (Collier 1975; Crocker-Bedford and Spillet 1981). Vegetation must be short stature to allow the prairie dogs to see approaching predators as well as have visual contact with other prairie dogs in the colony (Collier 1975; Crocker-Bedford and Spillet 1981). Prairie dogs will avoid areas where brushy species dominate, and will eventually decline or disappear in areas invaded by brush (Collier 1975; Player and Urness 1983). Well-drained soils are a habitat requirement for Utah

prairie dogs to excavate burrow sites. Burrows must be deep enough to protect the prairie dogs from predators and environmental and temperature extremes.

Predators of Utah prairie dogs include: badgers (*Taxidea taxus*), coyotes (*Canis latrans*), raptors, fox, and weasels. In an established prairie dog colony, predators do not have a significant impact; conversely, they have a huge impact on translocation sites where an established social system or burrow system is not present.

Utah prairie dog populations are susceptible to sylvatic plague (*Yersinia pestis*), a bacterium introduced to the North American continent in the late 1800's (Cully *et al.* 1993). There is a limited understanding of the variables that determine when sylvatic plague will impact prairie dog populations. Fleas are the vectors that spread the disease and can be brought into the vicinity of a prairie dog colony by a suite of mammals. Plague outbreaks generally occur when populations increase to high densities causing increased stress among individuals and easier transmission of disease between individuals.

Status and Distribution

There are five species of prairie dogs native to North America (Hoogland 2003). Taxonomically, prairie dogs (*Cynomys spp.*) are divided into two subgenera: the white-tail and black-tail. The Utah prairie dog (*C. parvidens*) is a member of the white-tail group, subgenus *Leucocrossuromys*. Other members of this group, which also occur in Utah, are the white-tailed prairie dog (*C. leucurus*) and the Gunnison prairie dog (*C. gunnisoni*).

The Utah prairie dog is recognized as a distinct species (Zaveloff 1988; Hoogland 1995), but is most closely related to the white-tailed prairie dog. These two species may have once belonged to a single interbreeding species (Pizzimenti 1975). They are now separated by ecological and physiographic barriers. The type locality for the Utah prairie dog is Buckskin Valley in Iron County, Utah (Pizzimenti and Collier 1975).

The Utah prairie dog is the westernmost member of the genus *Cynomys*. Historically, Utah prairie dog colonies were found as far west as Pine and Buckskin Valleys in Beaver and Iron Counties, and may have occurred as far north as Nephi, southeast to Bryce Canyon National Park, east to the foothills of the Aquarius Plateau, and south to the northern borders of Kane and Washington Counties (Figure 1) (Pizzimenti and Collier 1975). Factors that resulted in the historical decline of Utah prairie dogs were poisoning; drought; ecosystem conversion (agriculture, overgrazing, urbanization); shooting; and disease (Collier and Spillet 1972).

The Utah prairie dog currently occurs in three areas within southwestern Utah, which are designated as recovery areas (figure 2):

- 1) the Awapa Plateau;
- 2) the Paunsaugunt region, along the east fork and main stem of the Sevier River; and,
- 3) the West Desert region of eastern Iron County, with a few isolated colonies existing in mountain and desert valleys in eastern Iron and Beaver Counties (Pizzimenti and Collier 1975).

Utah prairie dogs are found in elevations from 1,646 m (5,400 ft) on valley floors up to 2,896 m (9,500 ft) in mountain habitats. For more information on these recovery areas, refer to our recovery plan for the species (USFWS 2012).



Figure 1. Utah prairie dog historic range.

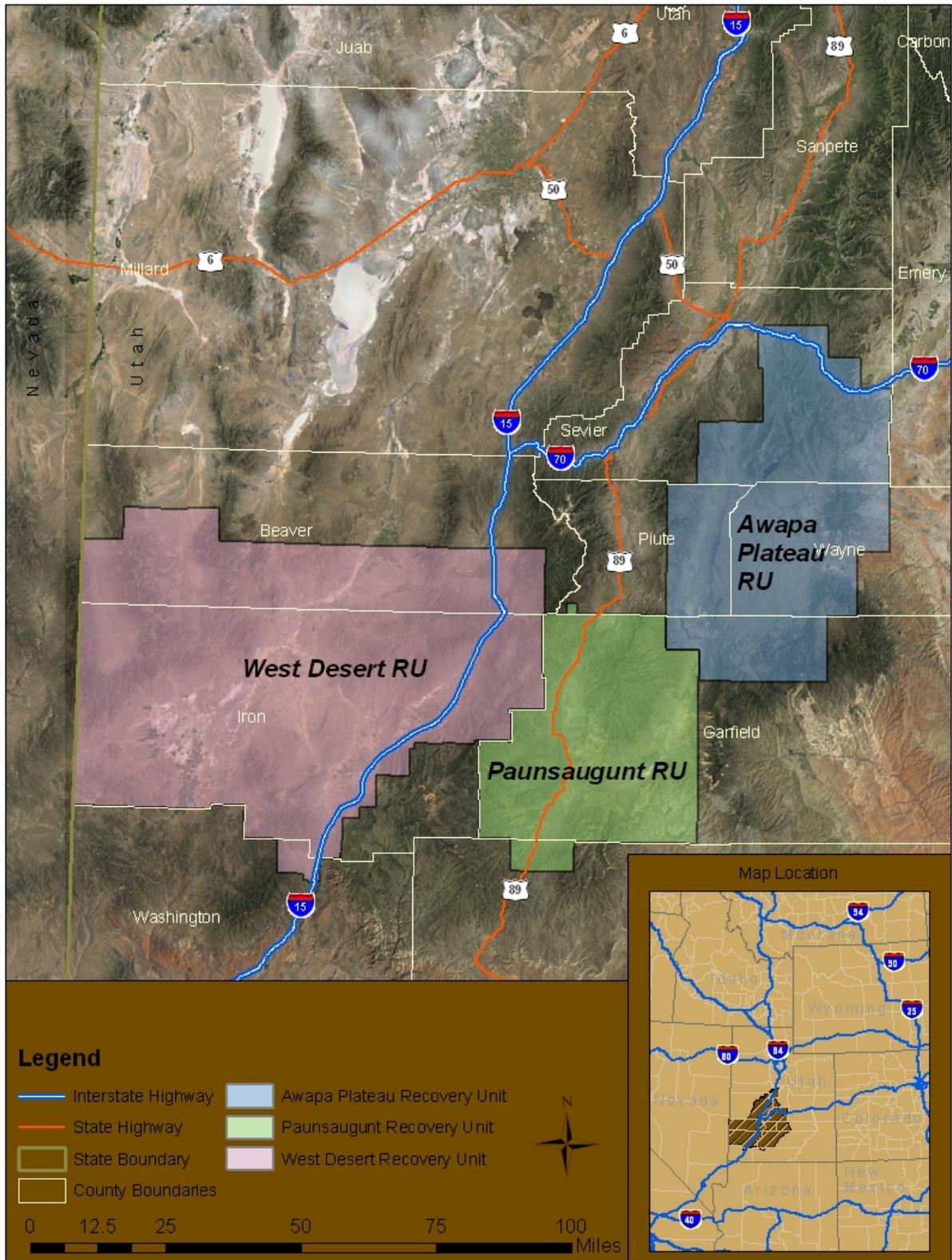


Figure 2. Utah prairie dog recovery unit boundaries.

Rangewide adult counts were as high as 7,527 in the 1989 spring census count (Utah Division of Wildlife Resources (UDWR 2010a) with a low count of 1,866 in 1976 (Figure 3). We use established survey protocols for counting Utah prairie dogs and determining population numbers. Counts are made in the spring before juveniles emerge and we estimate that only 50 percent of all adults within the colony are seen at any one time (Crocker-Bedford 1975). Counts of adult Utah prairie dogs from 2005 to 2011 are 5,375; 5,524; 5,991; 5,816; 5,827; 5,642; and 6,570 respectively (Figure 3) (UDWR 2010a, UDWR 2012). Total population estimates are calculated using a formula that accounts for the adult population estimate derived from spring counts and the estimated reproduction:

$$\text{Population estimate} = [(2 \times \text{Spring Adult Count}) \times 0.67 (\text{proportion of adult females}) \times 0.97 (\text{proportion of breeding females}) \times 4 (\text{average number of young per breeding female})] + (2 \times \text{Spring Adult Count})$$

Overall, spring counts from the past 30 years show considerable annual fluctuations, but stable to increasing long-term trends in adult Utah prairie dog numbers.

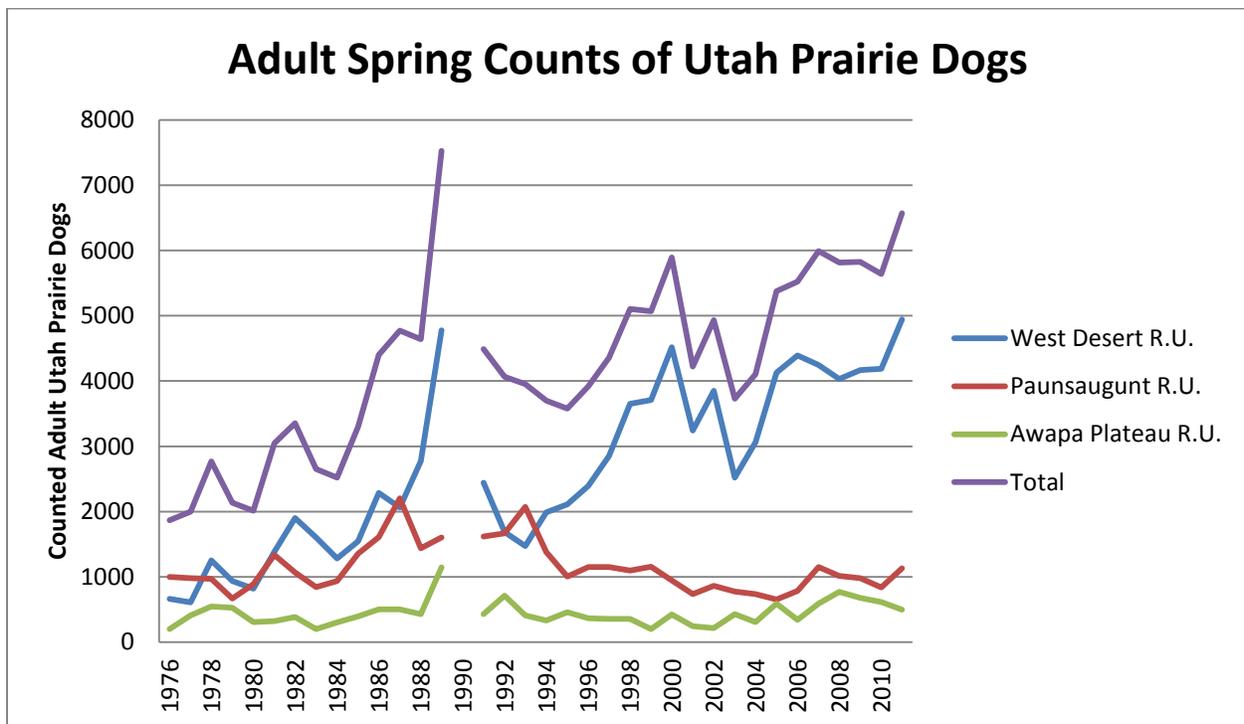


Figure 3. Graph of Adult Utah Prairie Dog Counts (1976-20011)¹.

In 1972, the UDWR began mapping occupied Utah prairie dog habitat throughout their range (USFWS 2012). The UDWR has mapped 59,656 acres as Utah prairie dog habitat (UDWR

¹ The 1990 count has been removed because none of the private lands colonies were counted due to staffing and budget limitations.

2010b). Mapped Utah prairie dog habitat includes any and all areas within the species' range that were mapped since 1972 as currently or historically occupied by Utah prairie dogs. Official maps of mapped Utah prairie dog habitat are maintained by the UDWR and updated annually. Occupied habitats are areas of known Utah prairie dog habitat that, at the time in question, support Utah prairie dogs. There are 16,841 acres of mapped habitat in the West Desert Recovery Area; 15,620 acres of mapped habitat in the Paunsaugunt Recovery Area; and 27,195 acres of mapped habitat in the Awapa Recovery Area (Table 1) (UDWR 2010b).

Table 1. Mapped Utah Prairie Dog Habitat by Land Ownership (acres).

LAND OWNERSHIP ²	RECOVERY UNITS		
	West Desert	Paunsaugunt	Awapa
U.S. Forest Service	140	3,776	8,591
Bureau Land Management	6,372	602	9,367
National Park Service	0	301	60
Protected Habitat	266	0	566
Utah School and Institutional Trust Lands Administration Lands	428	4,778	6,850
Private	9,969	6,163	1,761
Total	17,175	15,620	27,195
Habitat Removed (Developed)	334	0	0
Total Habitat Remaining	16,841	15,620	27,195

Recovery Efforts

The primary objective of the 1991 Utah prairie dog Recovery Plan (USFWS 1991) was to reestablish Utah prairie dog populations on public lands and ensure the continued existence of the species. In 1972, the UDWR initiated a transplant program to move animals from private agricultural lands to areas of historical occupancy on public lands. Over a 39-year period from 1972 to 2011, over 25,000 Utah prairie dogs were translocated to public land sites. Despite efforts to establish new Utah prairie dog colonies on federal lands, in 2009 approximately 80% of Utah prairie dogs still occurred on private lands (UDWR 2010a).

In 2006, a Recovery Team was established to oversee a revision of the 1991 Recovery Plan and implement recovery actions. A revised Recovery Plan was published in 2012 (USFWS 2012). While establishing prairie dogs on federal lands remains a priority, our revised 2012 Utah Prairie Dog Recovery Plan also emphasizes increased conservation efforts on non-federal lands where the majority of the species' occupied habitat occurs. For example, efforts are underway to encourage the conservation of existing colonies on private lands – e.g., safe harbor agreements

² The definitions used in these tables for public, protected, and State Institutional Trust Lands Administration lands are found in the glossary.

and conservation banks (USFWS 2012). Other recovery actions in the 2012 revised recovery plan include continued habitat improvements and research to improve success of translocations on federal lands, plague research and management, adaptive management strategies to respond to unpredictable threats such as changing climate conditions, and expanding public education and outreach efforts. There have been recent successful translocation efforts on United States Forest Service (USFS) lands near Bryce Canyon National Park. The USFS has launched a comprehensive flea control program on active translocation sites and their adjacent colonies. The translocation success rate is increasing in these areas. Working with researchers at the United States Geological Survey, agency biologists will be conducting field trials of an oral plague vaccine in the coming years.

A rangewide public-private partnership called the Utah Prairie Dog Recovery Implementation Program (UPDRIP) was initiated in 2010 (<http://www.suu.edu/ad/regional/updrip/>). There is currently limited funding available to pursue landscape-level conservation efforts for recovery of the species. However, the Program has already become a valuable tool for increasing coordination efforts and is making initial strides to formulate annual and long-range work plans for Utah prairie dog conservation. In addition, the support of UPDRIP partners has already proven important in obtaining some funding from various grant programs. All Recovery Team and Recovery Program members are involved in efforts to conserve and recover the Utah prairie dog using the best available information and adaptive management practices.

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