

Utah Prairie Dog

(Cynomys parvidens)

Status of the Species: June 2015

U.S. Fish and Wildlife Service

Utah Field Office



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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. 2015. Utah Prairie Dog (*Cynomys parvidens*) Status of the Species: June 2015. U.S. Fish and Wildlife Service, West Valley City, Utah. 15 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 12 to 14 inches (in) long (Hollister 1916) and weigh 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 (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. The rule was amended in 1991 to increase the amount of regulated take and it was revised again in 2012. The revised 4(d) rule August 2, 2012, expanded the rule to include lethal take where prairie dogs “create serious human safety hazards or disturb the sanctity of significant human cultural or human burial sites”. The revised 4(d) rule August 2, 2012 expanded the rule to allow lethal “take on agricultural lands and properties within .5 mi of conservation lands”, and it set the annual take limit under the revised rule to 10 % of the annual range-wide population estimate instead of a “fixed” annual limit.

In November 2014, the U.S. District Court for the District of Utah held that the 2012 4(d) Rule for the Utah prairie dog is unconstitutional to the extent it regulates Utah prairie dog take on non-federal lands. That decision is currently on appeal. After the decision, the UDWR assumed management authority for Utah prairie dogs on non-federal lands. The UDWR generated a new State management plan, effective May 8 2015, which allows for increased levels of lethal take (minimum 6,000 which is upwards of 20-30% of estimated total population) on non-federal lands than previously authorized under the 4(d) rule (10% of estimated total population). Additionally under the State Plan, lethal take is authorized on all unmapped Utah prairie dog habitat and there is no mitigation for the loss of occupied habitat due to development activities. Long-term, the State Plan would remove all take restrictions when a Recovery Unit reaches 2,000 adult animals on protected lands whereas our Recovery Plan takes a broader view of what is needed before delisting is considered, including assurances that the Utah prairie dog population is spatially distributed to provide sufficient connectivity and gene flow. It is too early in the implementation of the State Plan to assess any positive or negative effects of that plan. However, the relative recovery contribution of each individual Utah prairie dog on Federal land may change depending on how the State Plan (above) is implemented. As data from the implementation of the new State Plan is reported (we generally receive annual reports of prairie dog actions from the Utah Division of Wildlife Resources), our evaluations of the Status of the Species and future Environmental Baselines will be updated accordingly in new biological opinions, and reinitiations of section 7 consultations would occur as needed.

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 0.35 mile (mi), long-distance dispersal events of up to 0.75 mi, and unusually long-distance dispersals of 4 mi (Mackley *et al.* 1988; Brown *et al.* 2011). In the summer of 2014 the Utah Division of Wildlife Resources documented a recently translocated individual traveling upwards of 10 miles, though unusual this drastically changes our understanding of their dispersal potential.

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 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 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 of 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 and exhibit genetic differences. 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 units (RU; 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 Iron County, with a few isolated colonies existing in mountain and desert valleys in Iron and Beaver Counties (Pizzimenti and Collier 1975).

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

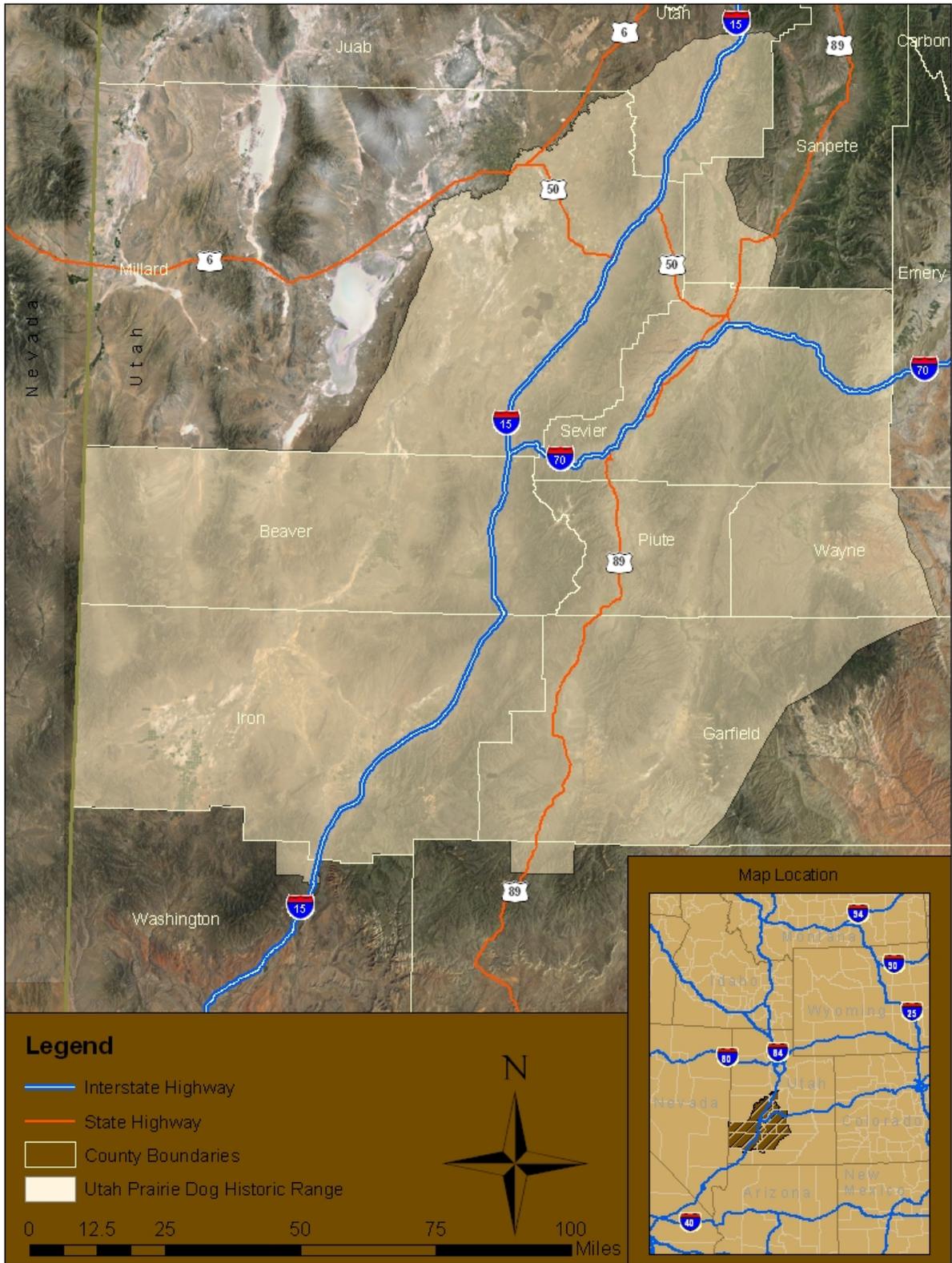


Figure 1. Utah prairie dog historic range.

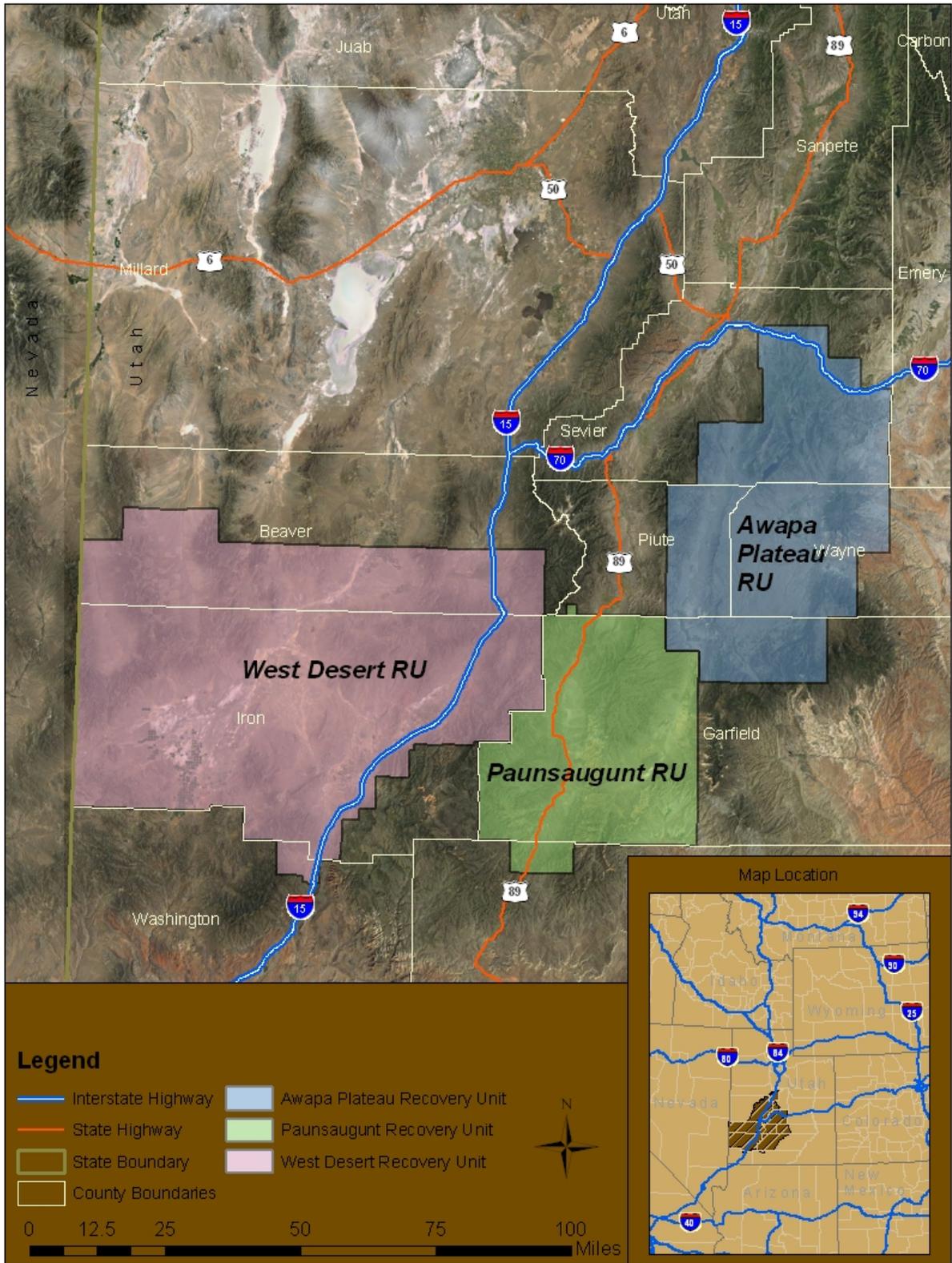


Figure 2. Utah prairie dog recovery unit boundaries.

Rangewide adult counts were as high as 11,431 in the 2014 spring census count (Utah Division of Wildlife Resources (UDWR 2010a, UDWR 2015) with a low count of 1,866 in 1976 (Figure 3). We use established survey protocols for counting Utah prairie dogs and determining population trends. 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 2010 to 2014 are 5,642; 6,640; 7,979; 7,270; and 11,431 respectively (5 year average= 7,792) (Figure 3) (UDWR 2010a, UDWR 2012, UDWR 2014, UDWR 2015). 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.

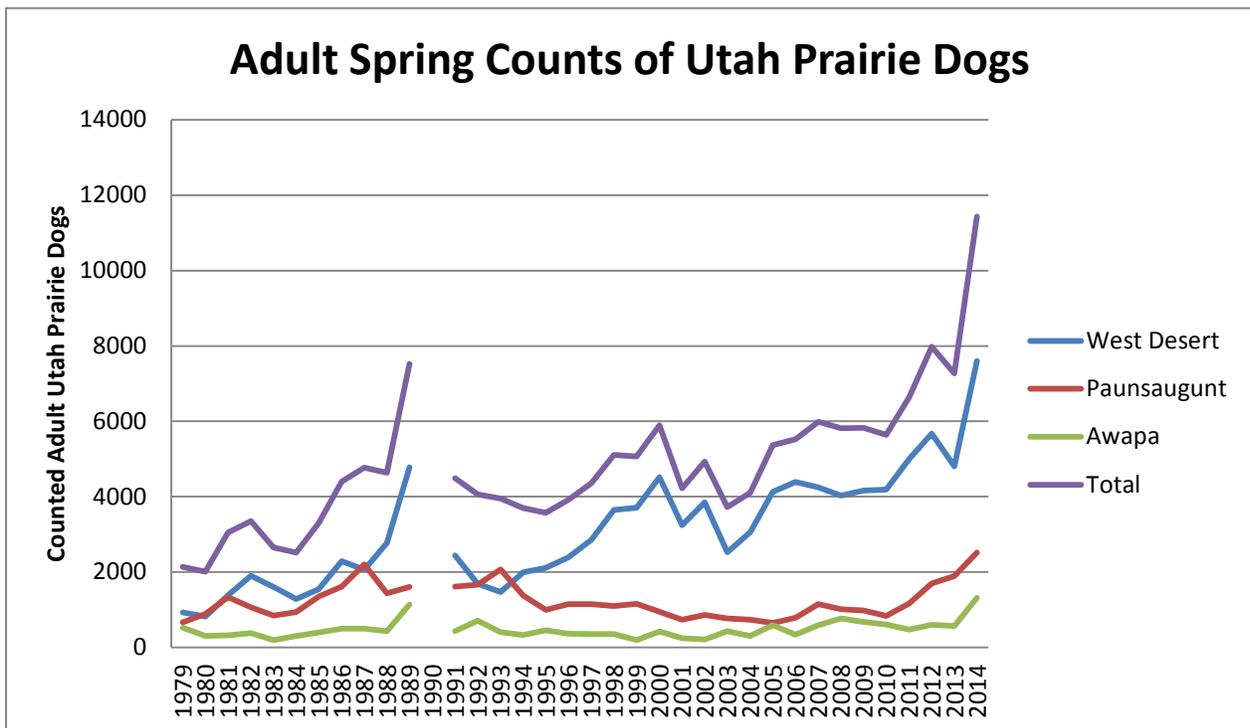


Figure 3. Graph of Adult Utah Prairie Dog Counts (1976-20014)¹.

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 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

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

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)	400 (est)	0	0
Total Habitat Remaining	16,775	15,620	27,195

Recovery Efforts

The 2012 Utah Prairie Dog Revised Recovery Plan (USFWS 2012) calls for the three recovery units (RU) to each contain 2,000 adult animals for 5 consecutive years (based on annual spring counts), and to maintain these population goals by protecting populations from habitat loss (i.e., development) and managing the threat of plague. Our recovery strategy for the Utah prairie dog focuses on the need to address colony loss and disease through a program that encompasses threats abatement, population management, research, and monitoring. We emphasize: conserving existing colonies; establishing additional colonies on federal and protected non-federal lands via habitat improvement or translocations; controlling the transmission of plague; and monitoring habitat conditions. Recent successes include the protection of over 1,200 acres of non-federal lands through habitat acquisitions and conservation easements with willing landowners; increased translocation successes on United States Forest Service (USFS) lands near Bryce Canyon National Park, due in part to increased plague management efforts; and the encouraging field trials and early success an oral plague vaccine.

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

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

coordination efforts and is preparing action 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. In 2015 UDRIP changed its name to the Utah Prairie Dog Oversight Group (UPDOG).

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. We believe that the Utah prairie dog is a very recoverable species, particularly if we can successfully garner resources, cooperation, and dedication from all involved.

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