

Utah Prairie Dog Recovery Efforts

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TABLE OF CONTENTS

	<u>Page</u>
LIST OF FIGURES	iii
LIST OF TABLES	iii
INTRODUCTION	1
Recovery Plan Objectives	4
METHODS	7
Annual Counts/Colony Occupancy	7
Translocation	7
Control Program	8
RESULTS	9
Population Counts	9
West Desert Recovery Area	9
Paunsaugunt Recovery Area	11
Awapa Plateau Recovery Area	11
Other:	12
Translocation	12
Control Program	15
DISCUSSION	17
MANAGEMENT RECOMMENDATIONS	20
LITERATURE CITED	22
APPENDICES	24

LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1 Map showing the three Utah prairie dog recovery areas as described in the Utah Prairie Dog Recovery Plan	5

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1 Spring counts of Utah prairie dogs by Recovery Area and land ownership	10
2 Summary of Utah prairie dog translocation efforts in 2001	14
3 Summary of the Utah prairie dog control program, 1985-2001	16

UTAH PRAIRIE DOG RECOVERY EFFORTS - 2001 ANNUAL REPORT

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Abstract - Utah prairie dog recovery efforts in 2001 consisted of conducting annual spring counts, administering the translocation and control programs, implementing the *Habitat Conservation Plan for Utah Prairie Dogs in Iron County, Utah* (HCP) and writing a county-wide HCP for Garfield County. A total of 4,217 adult Utah prairie dogs were counted rangewide, a decrease of 1,661 animals from 2000 figures. Counts on public and protected lands decreased to 981 adults, while counts on private lands decreased to 3,236. Private lands supported 77% of the total population. Counts in the West Desert Recovery Area decreased 28% from 2000, while counts in the Paunsaugunt Recovery Area decreased 21% and counts in the Awapa Plateau Recovery Area decreased 51%. In the Paunsaugunt Recovery Area, 78 Utah prairie dogs were translocated from five different colonies to the Berry Springs translocation site, and 94 Utah prairie dogs were translocated and supplemented to the East Creek colony. A total of 225 Utah prairie dogs were translocated from ten different colonies in the West Desert Recovery Area to the Dominguez-Escalante translocation site. Seventy control permits were issued to 34 individuals, allowing take of 3,719 Utah prairie dogs. Total reported take was 1,626 prairie dogs.

INTRODUCTION

The Utah prairie dog (*Cynomys parvidens*) is one of three species of white-tailed prairie dogs in the United States and is the western-most member of the genus *Cynomys*. This burrowing member of the squirrel family occurs only in arid grasslands in southwestern Utah. Utah prairie dogs were estimated to occupy about 700 sections (as delineated by cadastral mapping) in southwestern Utah and number more than 95,000 individuals in the 1920's (Turner 1979). Distribution of Utah prairie dogs had been greatly reduced by the 1960's due to intensive control campaigns, disease (sylvatic plague), and loss of habitat (U.S. Fish and Wildlife Service 1991a). Studies by Collier and Spillett (1972) indicated that Utah prairie dogs had declined in, or had been eliminated from, major portions of their historic range. They estimated only 3,300 Utah prairie dogs remained in 37 separate colonies, and that the species would be extinct by the year 2000 (Collier and

Spillett 1973, U.S. Fish and Wildlife Service 1991a). Due to the dramatic decline in numbers and distribution, the Utah prairie dog was classified as an endangered species on June 4, 1973 (38 F.R. 14678). The total number of prairie dogs and number of colonies subsequently increased to a point that prairie dogs were causing appreciable damage on private lands and were considered a nuisance. Because of the improved status of the species and large increases of prairie dog numbers on private lands, the U.S. Fish and Wildlife Service (Service) reclassified the species from endangered to threatened on May 29, 1984 (U.S. Fish and Wildlife Service 1984). A recovery plan for delisting Utah prairie dogs by the year 2000 was approved by the U.S. Fish and Wildlife Service in 1991 (U.S. Fish and Wildlife Service 1991a).

A high percentage of prairie dogs (77% in 2001) inhabit privately owned lands, resulting in a large number of complaints from landowners suffering damage due to prairie dogs. In 1972, the Utah Division of Wildlife Resources (Division) initiated a translocation program to move Utah prairie dogs from private lands to areas of historical occupancy on public lands. It was felt that reestablishment of prairie dog populations on public lands, where greater protection is afforded, was crucial to the continued viability and eventual recovery of the species. Specific guidelines were developed for translocation methods and selection of translocation sites (Jacquart et al. 1986, Coffeen and Pederson 1993). These guidelines are modified as new information becomes available. Translocations continued annually each summer from 1972 through 1992, were halted in 1993 and resumed in 1996. From 1972 through 2001, over 19,073 Utah prairie dogs were removed from private lands and translocated to lands managed by the Bureau of Land Management (Bureau), U.S. Forest Service, National Park Service, and State of Utah.

The Division has been censussing adult Utah prairie dogs at every known colony site each spring since 1976. Counts are conducted in the spring between mid-March and June 1, before young

are above ground, so that only adult animals that survive the winter are counted. Crocker-Bedford (1975) indicate that only 40 to 60% of the total prairie dog numbers are above ground at any one time. Thus, the spring population counts may underestimate the total population by as much as 60%. Approximately 2/3 of the spring adult population is female (Wright-Smith 1978). The skewed sex ratio is thought to be due to a high mortality rate for juvenile males resulting from conflicts with adult males and greater dispersal. Females generally give birth in April to litters averaging 4.1 young (Wright-Smith 1978, Mackley et al. 1988). Therefore, the summer population of Utah prairie dogs approximately triples once the young are born and emerge from their dens.

The large population explosion following emergence of young from their dens creates serious conflicts between Utah prairie dogs and human agricultural interests. In 1984, crop damage and damage to equipment was estimated to cost farmers more than \$1.5 million annually (U.S. Fish and Wildlife Service 1991a). The translocation program alleviated some of the nuisance complaints, but did not satisfy all landowners experiencing prairie dog problems. Therefore, in conjunction with the reclassification to threatened status in 1984, the Service enacted a special rule allowing "take" of Utah prairie dogs on agricultural lands in Cedar and Parowan Valleys in Iron County (U.S. Fish and Wildlife Service 1984). Take under this special rule was limited to 5,000 animals annually between 1 June and 31 December. Take was considered to be compensatory because juvenile Utah prairie dogs, the primary source of the nuisance complaints, experience an estimated 73% natural mortality rate over the fall and winter and most would perish anyway (U.S. Fish and Wildlife Service 1991a). The control program was considered a success because it increased cooperation between landowners and conservation agencies, provided landowners a means to alleviate localized problems, reduced the incentive to illegally kill prairie dogs, and did not appear to negatively impact the population. The rule allowing take was amended by the Service in June 1991 to include private

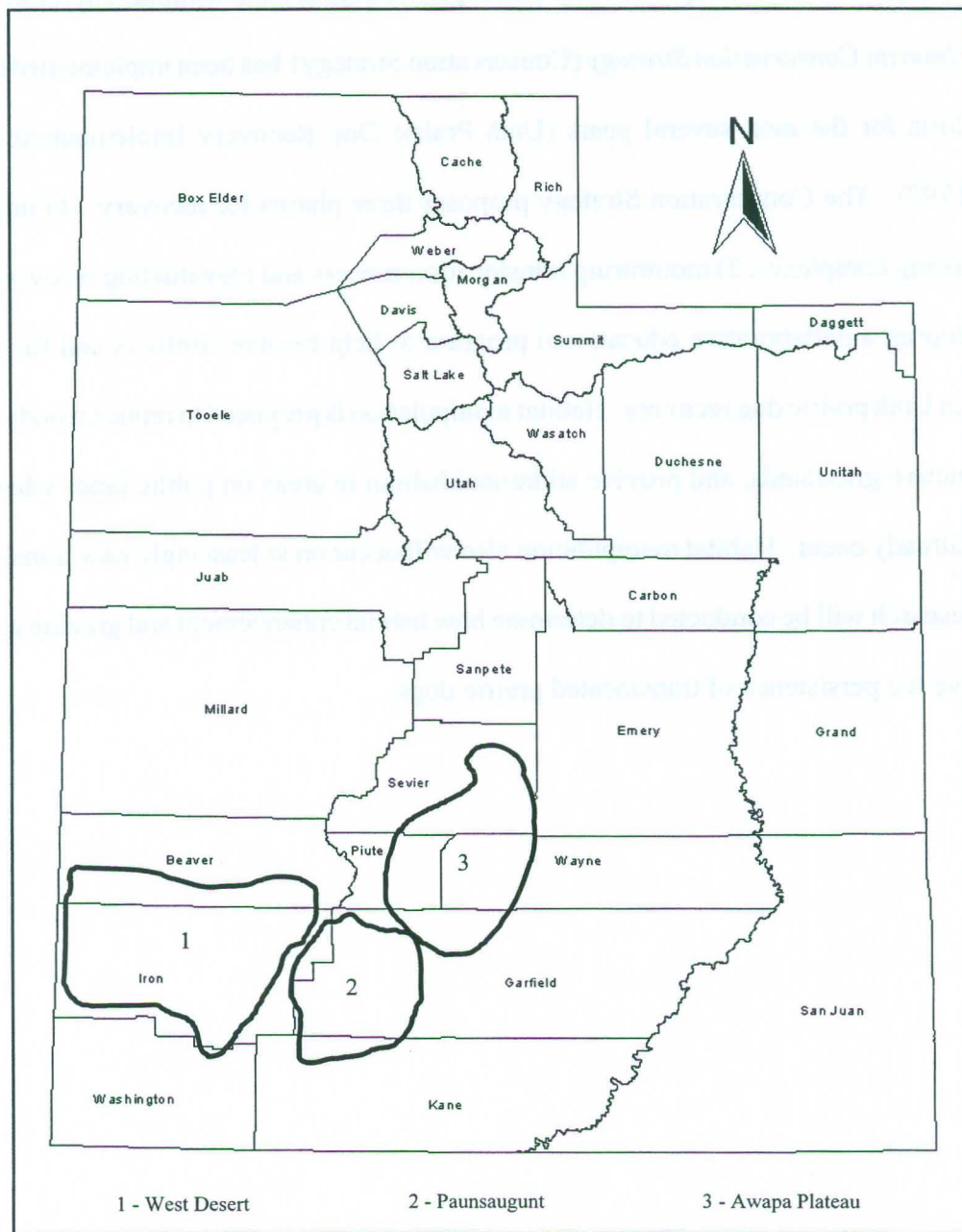
agricultural land throughout the range of the Utah prairie dog, and to increase the total annual allowable take to 6,000 animals (U.S. Fish and Wildlife Service 1991b).

Recovery Plan Objectives

The Utah Prairie Dog Recovery Plan (U.S. Fish and Wildlife Service 1991a) lists three criteria which must be met to achieve delisting. These are: 1) establishing and maintaining one population each on public lands in the West Desert, Paunsaugunt, and Awapa Plateau Recovery Areas (Fig. 1); 2) maintaining each population with a minimum number of 813 adult animals in the annual spring census for five consecutive years; and 3) establishing and implementing a formal Memorandum of Understanding for long-term management of each population, including the transfer of animals between populations for genetic purposes. It was felt that these steps would be necessary to establish and maintain the species as a self-sustaining, viable unit with retention of 90 percent of its genetic diversity for 200 years.

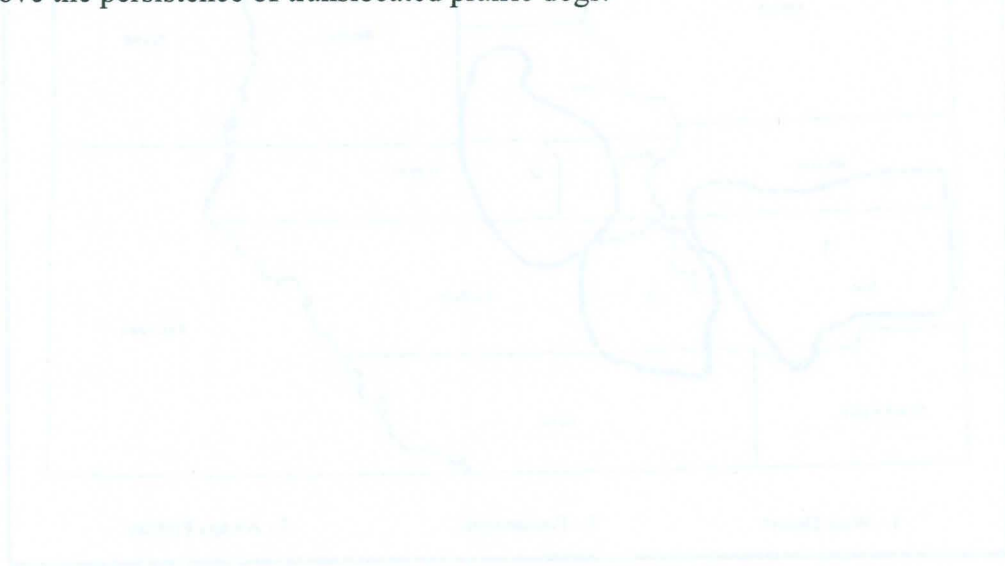
Analyses of recovery efforts, the transplant program, and population trends have led to recommendations that recovery goals and programs be revised (McDonald 1993, Ritchie 1995). For example, the recovery plan calls for maintaining a minimum of 813 adult prairie dogs in each recovery area for five consecutive years. However, it is unclear whether this should be one complex of 813 animals, or if it can be 27 separate complexes of 30 animals. Also, the recovery plan does not take into consideration the juxtaposition of colonies and complexes or frequent fluctuations in local population numbers (McDonald 1993). Preliminary results of an analysis of count data suggest that local populations of Utah prairie dogs exhibit nonlinear density dependence and experience population fluctuations that are not related to colony size (Richie 1995). Colonies exhibit frequent extinctions that appear to be primarily deterministic, rather than stochastic. In light

Fig. 1 Map showing the three Utah prairie dog recovery areas as described in the Utah Prairie Dog Recovery Plan (U.S. Fish and Wildlife Service 1991a).



of these questions and findings, Ritchie (1995) suggests recovery goals be revised to more fully incorporate metapopulation theory and its application to Utah prairie dog population dynamics and recovery.

Data on specific habitat requirements of Utah prairie dogs are still lacking. Therefore, a *Utah Prairie Dog Interim Conservation Strategy* (Conservation Strategy) has been implemented to direct recovery efforts for the next several years (Utah Prairie Dog Recovery Implementation Team (UPDRIT) 1997). The Conservation Strategy proposes three phases for recovery: 1) improving habitat at existing complexes, 2) monitoring translocation success and reevaluating recovery goals, and 3) developing a collaborative educational program to help resolve conflicts and foster local cooperation in Utah prairie dog recovery. Habitat manipulation is proposed to reduce woody shrubs, restore productive grasslands, and provide additional habitat in areas on public lands where Utah prairie dogs already occur. Habitat manipulation also will occur on at least eight new translocation sites where research will be conducted to determine how habitat enhancement and grazing practices might improve the persistence of translocated prairie dogs.



METHODS

Annual Counts/Colony Occupancy

Adult Utah prairie dogs are counted annually in April and May. Censussing begins first at lower elevation sites in the West Desert and progress in elevation to the Paunsaugunt and Awapa Plateau thereafter. Counts involve driving or hiking to all known colonies, scanning the colony with binoculars or a spotting scope, and taking the highest number of at least three counts of all visible adult prairie dogs. Colonies are mapped by hand on 1:24,000 USGS topographical maps or through use of GPS equipment. Count data is recorded by colony location. Land ownership is determined for each colony. Counts are conducted on clear, calm days, and are discontinued on cloudy or excessively windy days.

Translocation

Recovery of Utah prairie dogs is based upon establishment of new Utah prairie dog colonies on public lands (USFWS 1991a). To accommodate this, Utah prairie dogs are translocated annually from agricultural, recreational, and sensitive (e.g., cemetery) areas where they are causing damage and from approved development areas to sites previously prepared by the Bureau and the Forest Service. Each translocation site may receive up to 200 Utah prairie dogs annually for three consecutive years. Prairie dogs are captured in Tomahawk live traps baited with peanut butter and oats. Captured prairie dogs are sexed, weighed, and tagged with #1 monel ear tags. Prairie dogs are then transported to release sites mid- to late afternoon on the same day, unless weather conditions prevent release until the following day, where they are released into previously prepared cages. Release cages measure 0.6 x 1.0 x 1.2 meters (2' x 3' x 4'). These cover either paired, two meter deep holes drilled into the ground at a forty five degree angle using a portable hydraulic auger

or double-entrance artificial burrows made of plastic tubing buried in the ground. The release cages and holes, which provide temporary shelter for transplanted Utah prairie dogs, are supplied with alfalfa pellets and water. Additional dispersal holes are drilled outside of the outer perimeter of cages. Five-gallon poultry guzzlers are also placed in the release area to provide a source of water for prairie dogs that disperse from their release cages.

In 2001, as part of a cooperative study of sylvatic plague and Utah prairie dog dispersal, USGS Biological Research Division (USGS BRD) researchers performed the majority of processing of captured prairie dogs. In addition to normal measurements and evaluation, all Utah prairie dogs were sedated with Isoflurane (1 cc per animal in gallon container) and combed to collect fleas. Some animals were also fitted with radio transmitters. They were then released into three different types of 3-acre plots: visual barrier, electric containment and no containment. Plots were designed to test the efficacy of containment fencing for restricting Utah prairie dog dispersal from the release area. Half of each release plot was mowed to test whether prairie dogs display a site preference based on vegetation height.

Control Program

Landowners suffering agricultural damage due to Utah prairie dogs are able to obtain a Certificate of Registration at the Division's Southern Region Office in Cedar City, Utah allowing them to kill nuisance prairie dogs on their agricultural land by lethal trapping or shooting (Appendix VIII). Permits are available beginning 1 June and can be obtained through December. Complainants are required to come to the Division office, identify the specific location where prairie dog caused damage is occurring, and then sign a permit agreeing to all rules of the control program. Permits allow landowners to control only the number of Utah prairie dogs specified and are issued

for a 30-day period. At the end of this period, a report indicating the number of prairie dogs killed must be submitted to the Regional Office. Upon completion of the take report, landowners may request another permit for additional prairie dog control if damage is still occurring and their take limit has not been reached. The total number of prairie dogs which can be taken from a colony does not exceed the estimated production for that year. The Division determines the estimated production from the current year's annual spring count of a colony.

RESULTS

Population Counts

Prairie dog counts were conducted in 665 separate colonies spanning the three different recovery populations during 2001. Rangewide counts of Utah prairie dogs in 2001 totaled 4,217 adults, a 28% decrease from the 5,878 adults counted in 2000 (Table 1, Appendices I-VII). Populations on School and Institutional Trust Lands Administration property (Trust Lands) and private lands decreased 30% (from 4,624 animals in 2000 to 3,236 animals in 2001), but accounted for 77% of the total population. Utah prairie dog numbers on public or permanently protected lands decreased from 1,254 to 981 individuals. Counts on public lands dipped below the existing recovery goal in the West Desert Recovery Area for the first time in three years, and were well below the current recovery goal in the other two recovery areas.

West Desert Recovery Area

The West Desert population (n=3,240) decreased 28% from year 2000 counts (n=4,492) (Appendix V). Prairie dogs on public lands in the West Desert Recovery Area numbered 635 adults in 22 colonies. Half (n=11) of public land colonies supported fewer than 10 animals. Only three of the remaining colonies exceeded 50 animals.

Table 1. Spring counts of Utah prairie dogs by Recovery Area and land ownership.

Recovery Area	91 Count	92 Count	93 Count	94 Count	95 Count	96 Count	97 Count	98 Count	99 Count	00 Count	01 Count
West Desert Private	1927	1204	907	1410	1620	1945	2456	2955	2868	3501	2444
West Desert Public	478	476	474	477	490	450	393	688	834	955	731
West Desert State				112	1	0	1	17	38	36	65
West Desert Total	2405	1680	1381	1999	2111	2395	2850	3660	3740	4492	3240
Paunsaugunt Private	733	795	975	974	889	994	927	880	853	706	557
Paunsaugunt Public	624	573	773	250	95	136	189	217	298	218	120
Paunsaugunt State				154	19	23	34	3	22	10	58
Paunsaugunt Total	1357	1368	1748	1378	1003	1153	1150	1100	1173	934	735
Awapa Plateau Priv.	341	417	358	201	304	109	156	114	78	291	68
Awapa Plateau Pub.	88	47	44	130	152	244	190	228	97	81	130
Awapa Plateau State					4	16	11	11	26	52	10
Awapa Plateau Total	429	464	402	331	460	369	357	353	201	424	208
Gunnson Total						43	NC	NC	NC	28	34
Borden/Millard Co.						1	NC	NC	0	0	
Total Private	3001	2416	2240	2585	2813	3091	3539	3949	3799	4526	3119
Total Public	1190	1096	1291	857	737	831	772	1133	1229	1254	885
Total State				266	24	39	46	31	86	98	133
Total All	4191	3512	3531	3708	3574	3961	4357	5113	5114	5878	4217

In June of 2001, the Service, the Nature Conservancy, Iron County and the Division purchased 180 acres of agricultural land in Parowan Valley which support a large colony of Utah prairie dogs. This property is now under permanent protection and is known as the Parowan Valley Wildlife Management Area (Parowan Valley WMA). Ninety-six Utah prairie dogs were counted on the Parowan Valley WMA during spring of 2001. These animals, along with the 635 prairie dogs counted on public lands, now apply toward recovery goals. The 2001 spring count on the Parowan Valley WMA was a decrease from previous years counts, but several consecutive drought years may contribute to the overall decrease in prairie dog numbers across the recovery area. Utah prairie dogs on Trust Lands and private lands (n=2,509) accounted for 77% of the total number counted in the West Desert Recovery Area.

Paunsaugunt Recovery Area

Utah prairie dog counts in the Paunsaugunt Recovery Area decreased 21% from 2000 (n=934) to 2001 (n=735). Counts on private lands decreased from 716 adults to 615 adults. Private lands still support the vast majority (84%) of prairie dogs found in the Paunsaugunt Recovery Area. Counts in 15 colonies on public lands decreased from 218 animals in 2000 to 120 animals in 2001 (Table 1, Appendix VI).

Awapa Plateau Recovery Area

Counts in the Awapa Plateau Recovery Area decreased 51% from 2000 (n=424) to 2001 (n=208) (Table 1; Appendix VII). This decrease is partially due to a large die off of prairie dogs in the Gooseberry complex. Although plague is suspected, it was not confirmed. Seventy-eight Utah prairie dogs were counted on Trust Lands and private lands in this recovery area. The remaining 130 (63%) were found in 19 colonies on public lands, an increase of 49 prairie dogs from 2000. This is the first increase on public lands since 1998, although numbers on private and state lands dropped

dramatically. Utah prairie dogs in this recovery area live in very small colonies spread out over an extensive area. This characteristic, combined with higher elevations and temperamental weather patterns, can make spring counts difficult.

Other

Thirty-four Utah prairie dogs were counted during the spring surveys in a colony located on private property at Gunnison, Sanpete County. This was an increase from 2000 spring counts when 28 prairie dogs were counted. This colony is the northern-most currently occupied and documented colony in the range of the Utah prairie dog.

Translocation

Utah prairie dogs were translocated to one site in the West Desert Recovery Area and two sites in the Paunsaugunt Recovery Area. The Dominguez-Escalante translocation site is located in the West Desert Recovery Area approximately 15 miles north of Cedar City. This site consists of native rangeland and was burned by the Bureau in 1998 to reduce shrub cover. It was approved for use from 1999 to 2001 by the Utah Prairie Dog Recovery Implementation Team in November of 1998 (Bureau, 1998 Annual Report). The Paunsaugunt Recovery Area translocation site known as Berry Springs is located approximately 7 miles northwest of Bryce Canyon National Park on land administered by Dixie National Forest. The Forest Service conducted a controlled burn here in 1999 to reduce black sage (*Artemisia nova*). The second Paunsaugunt Recovery Area translocation site is an existing colony in the East Creek area, located outside the west boundary of Bryce Canyon National Park. Transplants here were expressly to augment an existing population for the purpose of plague research conducted by USGS BRD.

Thirty-six adult male Utah prairie dogs were trapped and translocated to Dominguez-

Escalante from 11 June through 15 June to test the three different types of containment fences and the artificial burrows. An additional 189 adult and juvenile Utah prairie dogs of both sexes were captured and released at the Dominguez-Escalante site during July and August. Under the *Habitat Conservation Plan for Utah Prairie Dogs, in Iron County, Utah* (HCP), the Iron County Commission (Commission) prioritizes trapping efforts within the county. At the Commission's request, the Division removed Utah prairie dogs from the Southern Utah University Farm, cemeteries, permanent take areas, private residences and golf courses, translocating them to Dominguez-Escalante. A total of 225 prairie dogs were translocated from ten colonies within Iron County during 3,227 trap days (Table 2).

Translocation to Berry Springs translocation/research site, occurred from 22 August to 1 September and totaled 78 prairie dogs. These animals were trapped from four colonies, a fifth failed to yield any animals, near Panguitch and Hatch during 1,239 trap days (Table 2). Two pairs of three-acre release plots were established at Berry Springs. One plot of each pair was dusted with Deltamethrin (a pyrethroid insecticide) to eliminate fleas and the other was left untreated (control). Also, one of each type of treatment was fenced with electric prairie dog containment fencing. As at Dominguez-Escalante, electric predator fencing surrounded all four plots, half of each of the release plots was mowed to reduce the vegetation height, and only artificial plastic burrows were available to transplanted prairie dogs.

Only four Utah prairie dogs were observed at the East Creek plague research site prior to translocation/supplementation. Because this number was insufficient to conduct the planned plague study, additional animals were moved into the colony. The site was dusted with Deltamethrin prior to release of 94 Utah prairie dogs trapped from a single location in Hatch from 6-12 August.

Table 2. Summary of Utah prairie dog translocation efforts in 2001.

Domingues-Escalante Translocation Site							
Trapping Location	# Days	Trap Effort	AM	AF	JM	JF	Total
New Cedar City Hospital	15	260	1	1	2	3	7
Trails West Subdivision	16	229	8	3	6	5	22
Canyon Commercial Drive	15	206	1	0	4	10	15
Storage Shed	8	70	0	0	0	0	0
Integrated Process Systems	5	76	1	0	1	2	4
Cedar City Cemetery	13	278	1	1	7	2	11
Golf Course	30	1055	9	12	35	25	81
SUU Farm	12	667	36	0	0	0	36
Private Residences	20	448	3	5	22	19	49
I-15 North Interchange, Cedar City	6	60	0	0	0	0	0
TOTAL			60	22	77	66	225

Berry Springs Translocation Site							
Trapping Location	# Days	Trap Effort	AM	AF	JM	JF	Total
Private Ranch near Hatch	4	69	0	1	0	3	4
Panguitch Ballfield	7	618	22	9	6	26	63
Panguitch Agricultural areas	7	252	2	3	3	2	10
Panguitch Hospital	7	243	1	0	0	0	1
Hillsdale	3	57	0	0	0	0	0
TOTAL			25	13	9	31	78

East Creek Translocation Site							
Trapping Location	# Days	Trap Effort	AM	AF	JM	JF	Total
Private Ranch near Hatch	7	511	28	12	22	32	94
TOTAL			28	12	22	32	94

Trap Effort = the cumulative number of traps set daily

AM = adult male

AF = adult female

JM = juvenile male

JF = juvenile female

This site had a natural burrow system intact, therefore little site preparation was necessary. No containment or predator fencing was erected at this site.

Specifics of release and monitoring activities at Berry Springs and East Creek are summarized in USGS/BRD field summary reports. These can be obtained by contacting either the Division or USGS/BDR directly.

Control Program

Seventy control permits were issued to 34 persons in 2001, allowing take of 3,719 Utah prairie dogs from 38 colonies. The West Desert Recovery Area accounted for 42 of the 70 permits (60%), the Paunsaugunt Recovery Area for 23 permits (33%), the Awapa Plateau Recovery Area for three permits (4%) and the Gunnison area for two permits (3%). Reported take in 2001 was 1,626 Utah prairie dogs; a success rate of 44%. This is an increase from the 2000 rate of 37% (Table 3). The average permitted take was 53 Utah prairie dogs per permit, and the average actual take was 23 prairie dogs per permit. The number of control permits has continued to increase since 1996, indicating that either Utah prairie dogs are becoming more of a nuisance on agricultural lands or that awareness and acceptance of this legal option for dealing with prairie dog depredation is rising. However, there is no definitive correlation between issuance of control permits and Utah prairie dog population growth.

Table 3. Summary of the Utah prairie dog control program, 1985-2001.

Year	Control Permits Issued	Persons Issued Permits	Allowed Take	Actual Take	Success Rate	Location of Permittee				Location of Take			
						West Desert	Paunsaugunt	Awapa Plateau	Gunnison	West Desert	Paunsaugunt	Awapa Plateau	Gunnison
1985	8	6	845	426	50%	100%	0	0	0	845	0	0	0
1986	17	15	2040	1247	61%	100%	0	0	0	2040	0	0	0
1987	16	14	975	370	38%	100%	0	0	0	975	0	0	0
1988	23	15	2415	528	22%	100%	0	0	0	2415	0	0	0
1989	37	23	3050	838	27%	100%	0	0	0	3050	0	0	0
1990	43	25	4130	1267	31%	100%	0	0	0	4130	0	0	0
1991	59	45	4200	1632	39%	44%	56%	0	0	656	976	0	0
1992	59	43	3520	1543	44%	39%	57%	4%	0	556	937	50	0
1993	32	24	1050	599	57%	58%	29%	13%	0	266	243	90	0
1994	42	33	1190	741	62%	58%	36%	6%	0	505	198	36	0
1995	17	14	630	461	73%	40%	53%	7%	0	171	290	0	0
1996	11	9	520	436	84%	56%	33%	0	11%	253	133	0	50
1997	23	13	1065	589	55%	54%	31%	15%	0	327	187	75	0
1998	31	19	1220	717	59%	70%	15%	10%	5%	569	69	67	12
1999	59	35	2496	1233	49%	75%	17%	8%	0	1064	152	17	0
2000	68	32	3700	1386	37%	81%	18%	1%	0	1105	267	14	0
2001	70	34	3719	1626	44%	60%	33%	4%	3%	1177	310	124	15

DISCUSSION

Utah prairie dog counts remained at levels well below recovery goals and were not much higher than 1984 counts, the year this species was reclassified from endangered to threatened. The Paunsaugunt and Awapa Plateau recovery populations identified in the Utah Prairie Dog Recovery Plan were well below the recovery goal of 813 adults counted on public lands. The West Desert Recovery Area, which had met recovery goal numbers for two consecutive years, dipped below 813 animals in 2001. This recovery area embraced 22 active colonies on public lands which contained an average of 29, and median of 9, adult Utah prairie dogs (range 1 to 290). These figures do not include the recently acquired Parowan Valley WMA, which supported 96 adult prairie dogs, raising the average for public and protected land to 32 with a median of 11. The Paunsaugunt population consisted of 15 active colonies on public lands containing an average of 8, and median of 4, prairie dogs (range 1 to 35). The Nature Conservancy owns a parcel of land in the Panguitch Valley which is the home to Utah prairie dogs. Eleven adult prairie dogs were counted on the property during spring counts this year. The Awapa Plateau population consisted of nineteen occupied public land colonies, containing an average of 7, and a median of 4, prairie dogs (range 1 to 25). Only four public land colonies throughout Utah prairie dog range contained more than 50 individuals and only one complex contained more than 100 (See Appendices V - VII). Although these data seem to indicate recovery successes in the West Desert Recovery Area, they point out the need for more aggressive actions in the Paunsaugunt and Awapa Plateau Recovery Areas.

Although halted in 1992, Utah prairie dog translocations recommenced in 1996 with the introduction of 430 Utah prairie dogs to the Adams Well demonstration site. Two successive years of translocations ensued at Adams Well. The prairie dog population at this site has increased annually since translocations ceased. Sixty-nine prairie dogs were observed at the Adams Well site

during the spring count of 2001. In addition, a great number of untagged prairie dogs with unscathed ears were retrapped at Adams Well in September 1998 and 1999, suggesting that Adams Well now supports a self-sustaining population. Prairie dogs have dispersed from Adams Well and have established burrow systems almost 3.2 km (two miles) away.

The Dominguez-Escalante translocation site received 225 prairie dogs during 2001, which was the third year of translocations to this site. A total of 603 prairie dogs were moved to the area between 1999-2001. The enclosure fencing, particularly the visual barrier fencing, appeared to increase the amount of burrow establishment within the enclosures, although retention of the prairie dogs was only temporary. At least one badger was able to penetrate the electric predator fencing and eight prairie dog deaths were attributed to badgers. Raptors were suspected in the death of four prairie dogs, coyotes blamed in the death of two prairie dogs, and an unidentified predator is attributed in one death. Although prairie dogs did not show a preference for mowed or non-mowed areas, or between types of enclosures surrounding the release plots, they did appear to select double-entrance artificial plastic burrows over augered burrows.

The prairie dogs released at Berry Springs, like those at Dominguez-Escalante, showed no preference for the mowed or non-mowed sites. Prairie dogs moved back and forth across the electric containment fencing showing a slight preference for control plots, which lacked this fencing. Four cases of predation were found, two attributed to badgers and two to unknown predators.

The number of control permits issued in 2001 increased for the fifth consecutive year. This was not consistent with the decrease of prairie dogs on private lands in 2001. Reported "take" numbers of Utah prairie dogs typically seems to follow the population trends as they rise and fall, although this year was not the case. The success rate increased by 7%, although private land numbers rangewide were down 30%.

Utah prairie dog habitat is jeopardized and further fragmented every year due to rapid growth and development occurring throughout prairie dog range. In July of 1998, the Service issued an incidental take permit to Iron County and the Division for implementation of the *Habitat Conservation Plan for Utah Prairie Dogs, in Iron County, Utah* (HCP). The purpose of the HCP is to allow limited development and growth in the county while protecting and preserving the Utah prairie dog and its habitat. Twenty-nine acres of prairie dog habitat were lost during development of several areas in Iron County in 2001. Although developers are encouraged to plan ahead and incorporate prairie dog removal into their schedules, many prefer not to wait and choose to pay a mitigation fee for the loss of habitat. A total of 37 Utah prairie dogs were “taken” by development at ten sites before trapping and removal could occur. Fifty-five Utah prairie dogs were trapped prior to development and translocated to public lands during July and August of 2001. There are “take” limits on both Utah prairie dogs and acres of habitat that can be approved for development within Iron County each year. The results of the Habitat Conservation Plan implementation are presented elsewhere. (Division, 2001).

MANAGEMENT RECOMMENDATIONS

1. A better understanding of habitat requirements of Utah prairie dogs is required to allow managers to identify translocation sites and manage habitat in a manner suitable for prairie dogs. Guidelines contained in the Utah Prairie Dog Recovery Plan are vague and have never been tested scientifically. The research protocol outlined in the *Utah Prairie Dog Conservation Strategy* should be implemented more aggressively. This research will allow for better understanding of habitat needs of Utah prairie dogs, particularly the preferred vegetative composition. In addition, the research should provide information useful for increasing success of translocation efforts.
2. All affected agencies should allocate the necessary personnel and resources to fully implement and complete tasks outlined in the recovery implementation schedule in the *Utah Prairie Dog Recovery Plan* and the *Utah Prairie Dog Conservation Strategy*.
3. A Habitat Conservation Plan for the Paunsaugunt Recovery Area has been prepared for Garfield County and awaits approval by the U.S. Fish and Wildlife Service. Comprehensive management for the Awapa Recovery Area should be addressed and implemented as soon as possible.
4. An agreement for long-term management of all prairie dog complexes must be developed and implemented between all affected local, state, and federal management agencies, as required in the recovery plan. The necessary resources must be allocated to carry out that agreement.
5. Populations on both public and private lands must continue to be closely monitored to ensure that dramatic declines do not occur. Populations suspected to be in decline due to human influences must be monitored closely.

6. All aspects of recovery implementation must involve public participation to garner the necessary local support for recovery to occur.
7. Utah prairie dogs should be released the same day they are trapped to reduce stress on the animals. Efforts should be made to release family groups together.

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APPENDICES

Appendix I. Counts of Utah Prairie Dogs by Recovery Area and Land Ownership, 1976-2001.

Appendix II. Counts of Utah Prairie Dogs on Private and Public Lands, 1981-2001.

Appendix III. Counts of Utah Prairie Dogs on Private Lands, 1981-2001.

Appendix IV. Counts of Utah Prairie Dogs on Public Lands, 1981-2001.

Appendix V. Counts of Utah Prairie Dogs in the West Desert Recovery Area.

Appendix VI. Counts of Utah Prairie Dogs in the Paunsaugunt Recovery Area.

Appendix VII. Counts of Utah Prairie Dogs in the Awapa Plateau Recovery Area.

Appendix VIII. Example of Utah Prairie Dog Certificate of Registration (Control Permit)

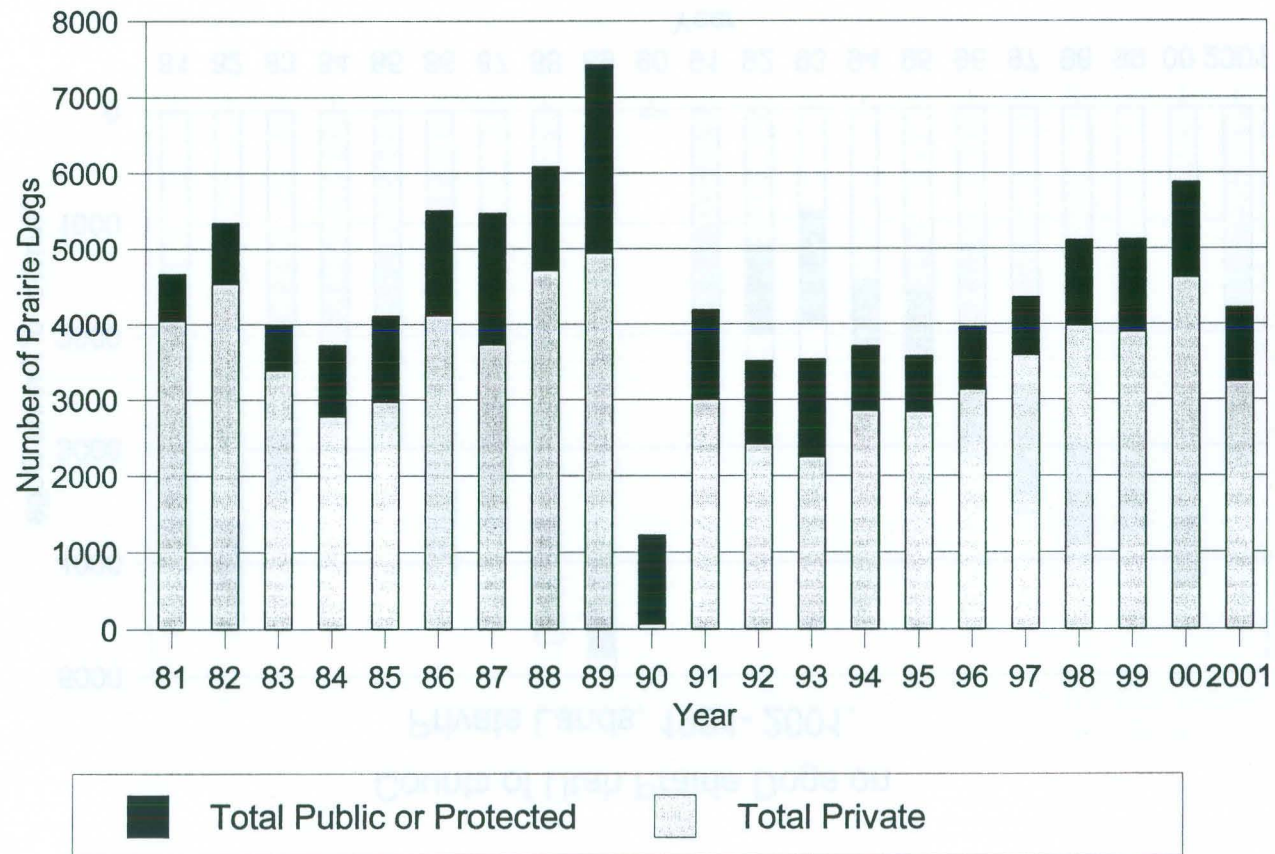
Appendix I. Counts of Utah Prairie Dogs by Recovery Area and Land Ownership, 1976-2001.

Recovery Area	76 Count	77 Count	78 Count	79 Count	80 Count	81 Count	82 Count	83 Count	84 Count	85 Count	86 Count	87 Count	88 Count
West Desert Private	605	890	1854	1692	1871	3003	3672	2825	2239	2097	3028	2195	3601
West Desert Public	306	170	63	31	99	125	312	194	273	277	413	580	688
West Desert State													
West Desert Total	911	1060	1917	1723	1970	3128	3984	3019	2512	2374	3441	2775	4289
Paunsaugunt Private	754	680	500	411	626	897	726	528	479	744	931	1431	977
Paunsaugunt Public	17	94	326	215	197	315	250	246	426	598	635	758	406
Paunsaugunt State													
Paunsaugunt Total	771	774	826	626	823	1212	976	774	905	1342	1566	2189	1383
Awapa Plateau Priv.	173	103	79	73	99	145	138	31	60	126	157	102	131
Awapa Plateau Pub.	95	315	466	457	220	181	246	170	243	271	344	408	282
Awapa Plateau State													
Awapa Plateau Total	268	418	545	530	319	326	384	201	303	397	501	510	413
Gunnsion Total													
Borden/Millard Co.													
Total Private	1532	1673	2433	2176	2596	4045	4536	3384	2778	2967	4116	3728	4709
Total Public	418	579	855	703	516	621	808	610	942	1146	1392	1746	1376
Total State													
Total All	1950	2252	3288	2879	3112	4666	5344	3994	3720	4113	5508	5474	6085

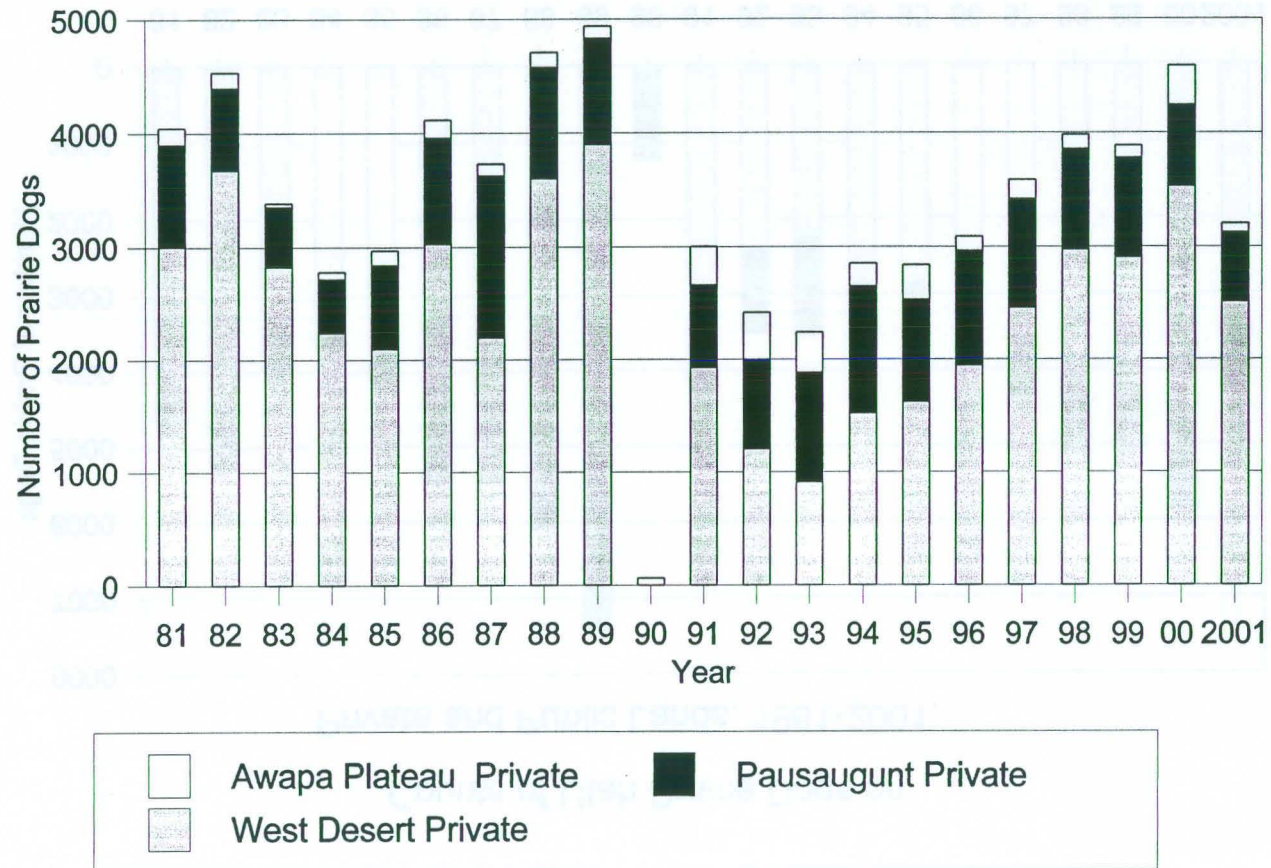
Appendix I. (Continued)

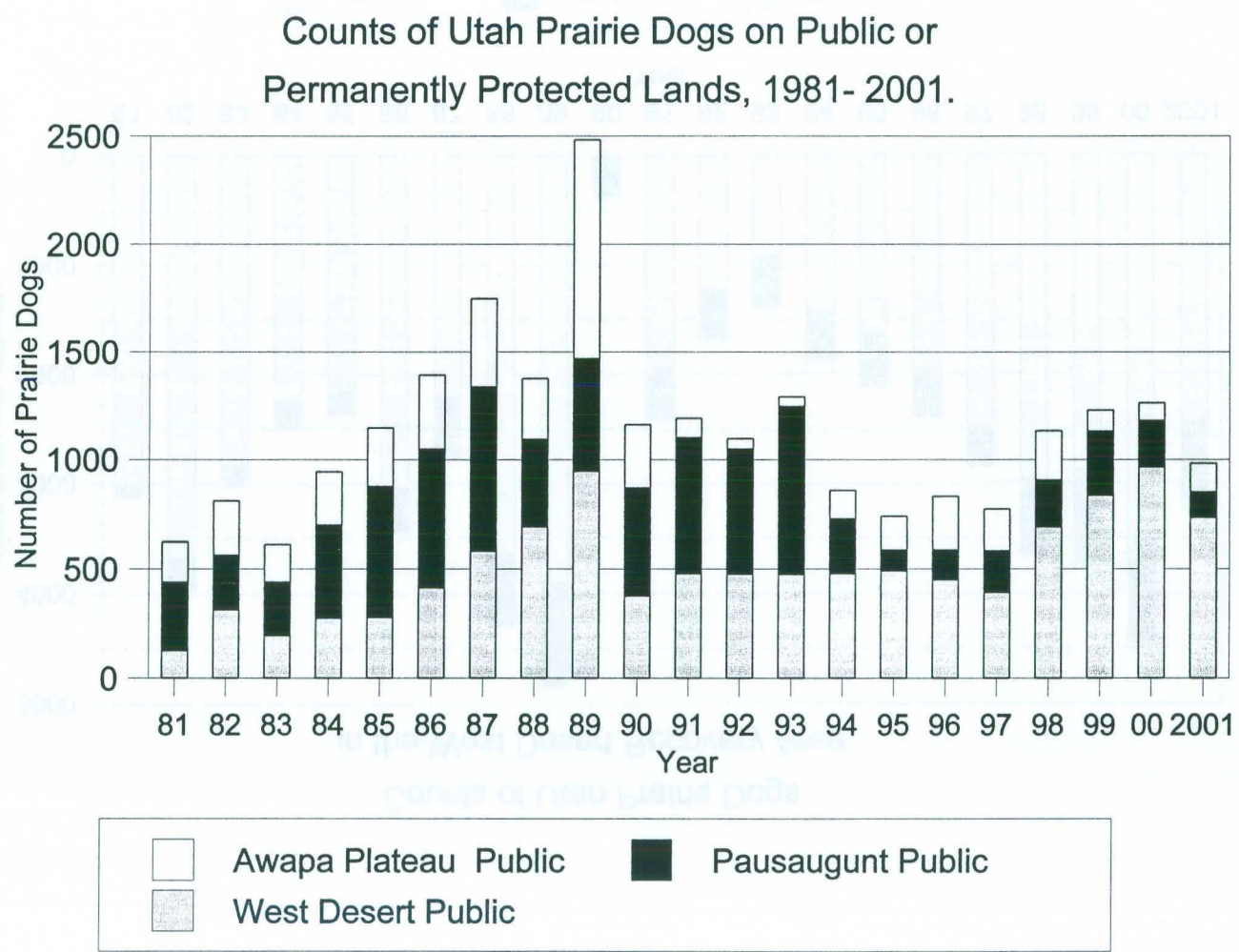
Recovery Area	89 Count	90 Count	91 Count	92 Count	93 Count	94 Count	95 Count	96 Count	97 Count	98 Count	99 Count	00 Count	01 Count
West Desert Private	3898		1927	1204	907	1410	1620	1945	2456	2955	2868	3501	2444
West Desert Public/ Protected	945	375	478	476	474	477	490	450	393	688	834	955	731
West Desert State						112	1	0	1	17	38	36	65
West Desert Total	4843	375	2405	1680	1381	1999	2111	2395	2850	3660	3740	4492	3240
Paunsaugunt Private	936		733	795	975	974	889	994	927	880	853	706	557
Paunsaugunt Public	524	494	624	573	773	250	95	136	189	217	298	218	120
Paunsaugunt State						154	19	23	34	3	22	10	58
Paunsaugunt Total	1460	494	1357	1368	1748	1378	1003	1153	1150	1100	1173	934	735
Awapa Plateau Priv.	106	65	341	417	358	201	304	109	156	114	78	291	68
Awapa Plateau Pub.	1013	292	88	47	44	130	152	244	190	228	97	81	130
Awapa Plateau State							4	16	11	11	26	52	10
Awapa Plateau Total	1119	357	429	464	402	331	460	369	357	353	201	424	208
Gunnsion Total								43	NC	NC	NC	28	34
Borden/Millard Co.								1	NC	NC	0	0	
Total Private	4940	65	3001	2416	2240	2585	2813	3091	3539	3949	3799	4526	3103
Total Public/ Protected	2482	1161	1190	1096	1291	857	737	831	772	1133	1229	1254	981
Total State						266	24	39	46	31	86	98	133
Total All	7422	1226	4191	3512	3531	3708	3574	3961	4357	5113	5114	5878	4217

Counts of Utah Prairie Dogs on
Private and Public Lands, 1981-2001.

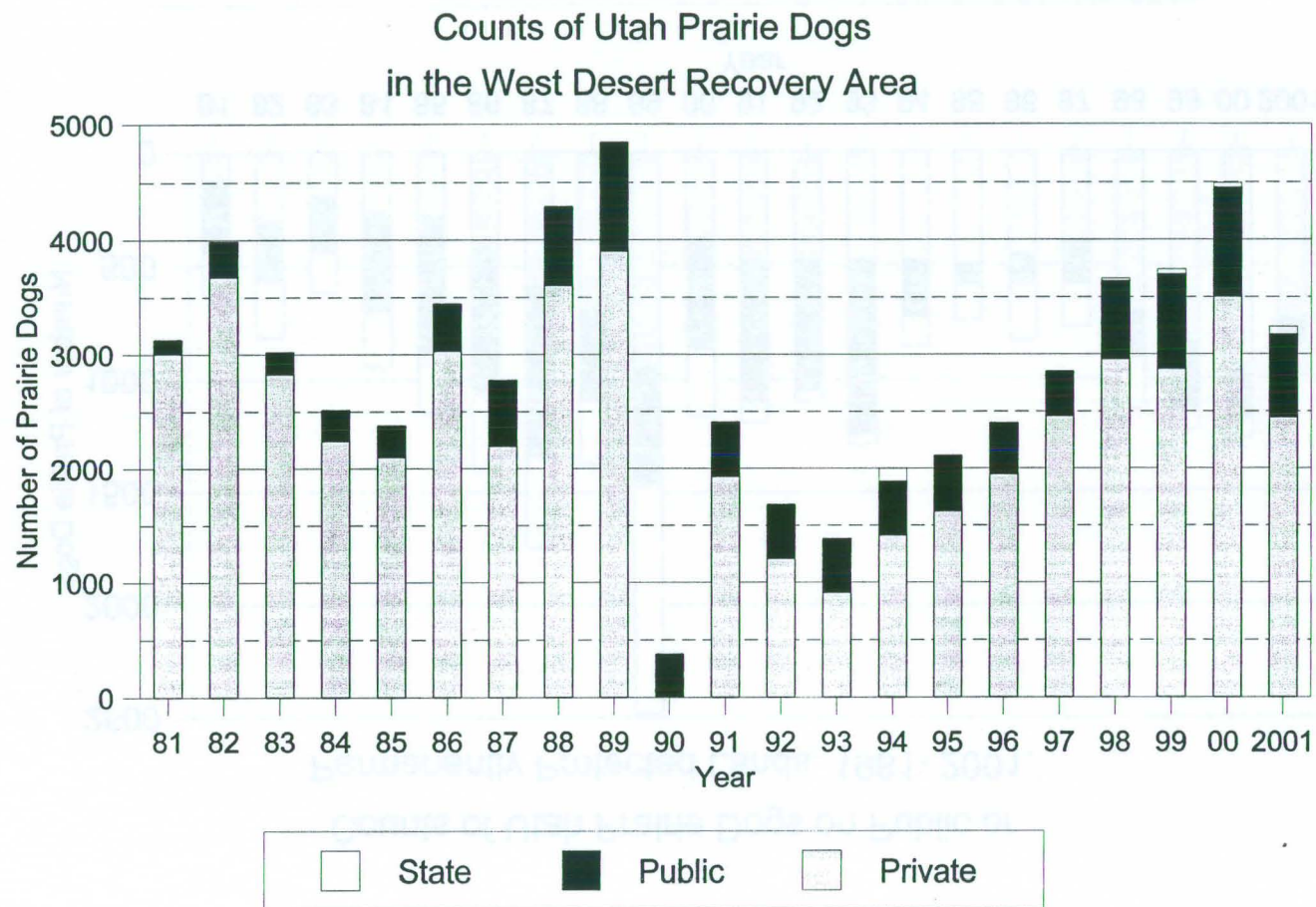


Counts of Utah Prairie Dogs on
Private Lands, 1981- 2001.





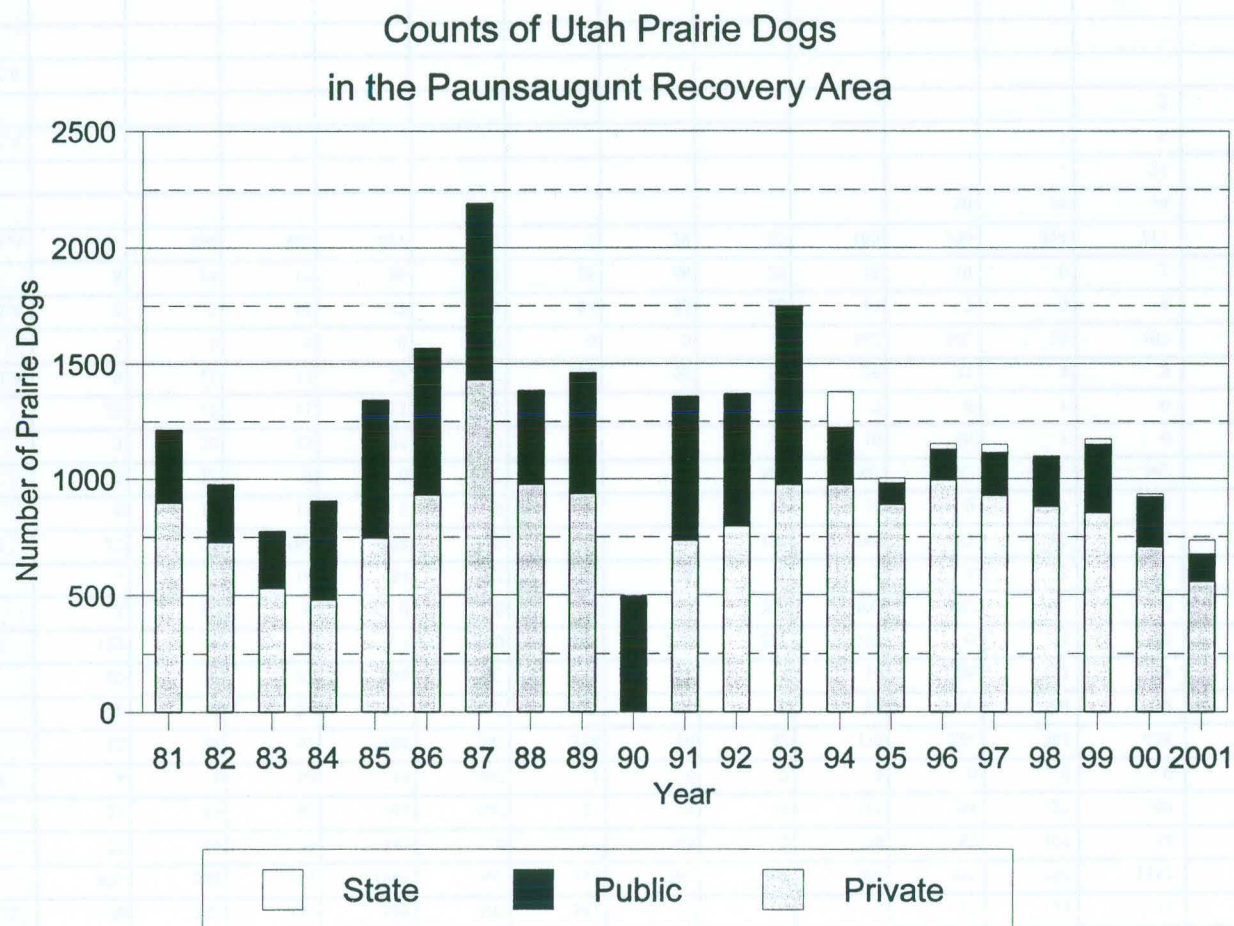
Appendix V.



Appendix V. Counts of Utah Prairie Dogs in the West Desert Recovery Area, 1986-2001.

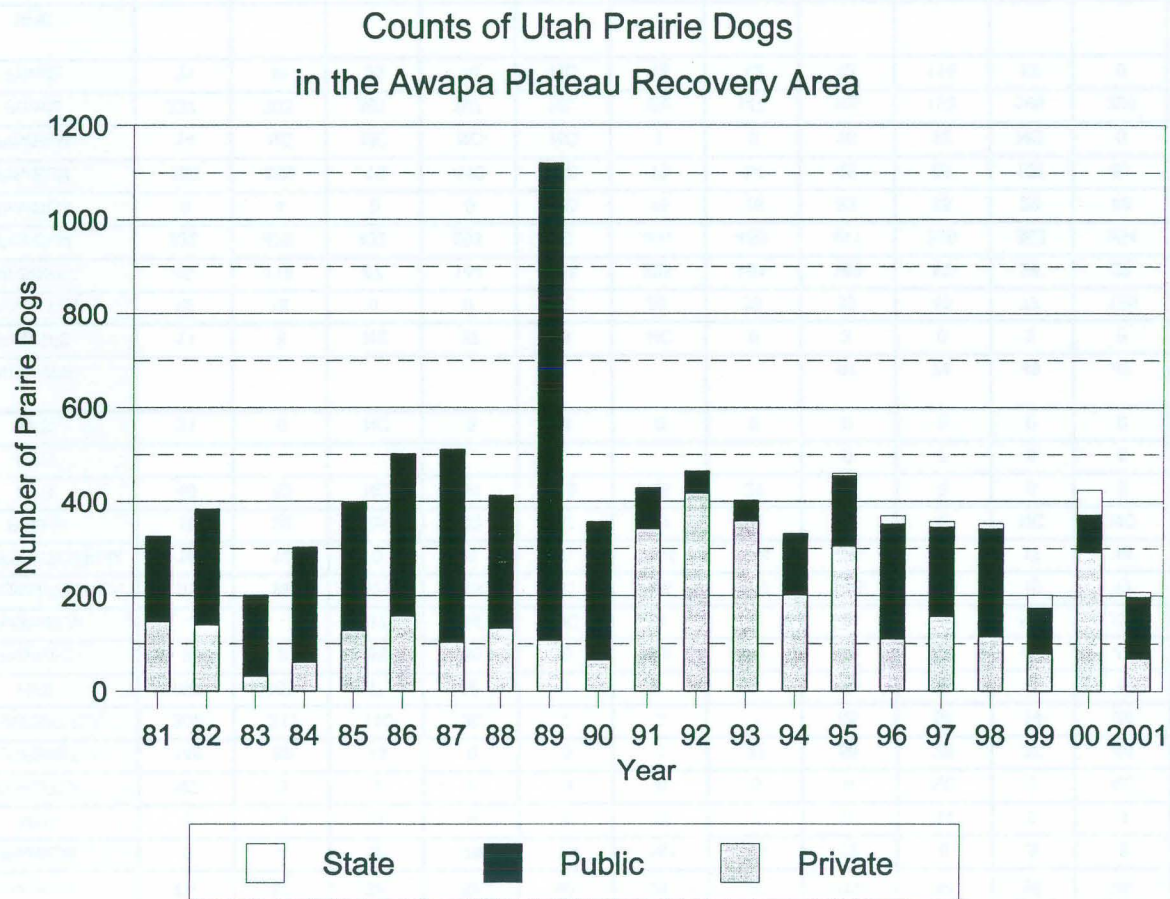
Complex	Complex Location Name	Ownership	Spring'86	Spring'87	Spring'88	Spring'89	Spring'90	Spring'91	Spring 92	Spring 93	Spring 94	Spring 95	Spring 96	Spring 97	Spring 98	Spring 99	Spring 00	Spring 01
0100	Rest Stop-Kanarra	Private	26	10	22	18	NC	37	48	40	6	5	1	14	20	58	64	75
0101	Kanarraville	Private	83	205	90	564	NC	267	143	65	38	42	49	76	90	80	84	68
0102	Duncan Creek-Quichipah	Priv/SITLA	770	363	551	569	NC	342	73	7	2	17	21	37	68	73	81	34
0103	CEDAR CITY - ENOCH	Private	877	862	1114	1993	NC	734	700	492	788	856	996	1352	1634	1536	1847	1476
0104	RUSH LAKE	Private	27	10	79	141	0	55	45	2	39	84	103	54	114	117	105	116
0105	South Summit	Private	27	10	61	105	NC	23	13	41	115	94	127	160	111	81	119	77
0106	Roadside	Priv/BLM	4	2	10	13	NC	1	0	2	3	0	0	0	0	0	1	0
0107	Mortenson's	Private	12	24	62	281	NC	374	16	42	172	224	381	418	545	556	755	468
0108	Parowan Airport	Private	10	16	34	NC	NC	37	36	76	82	76	104	32	82	108	165	28
0109	Paul Miller	Private	69	14	97	124	NC	2	85	19	10	86	121	188	183	124	182	119
0110	Buckskin	Priv/BLM	133	9	0	13	110	165	216	232	199	0	31	52	101	95	3	7
0111	Rocky Reservoir	NFS	5	17	9	0	0	3	0	NC	NC	NC	NC	0	NC	0	0	0
0112	Shurtz Canyon	Private	-	-	14	34	NC	44	19	6	5	4	5	11	9	22	16	12
0113	Buckhorn Flat	Priv/BLM	67	32	164	128	NC	41	45	123	265	157	52	52	72	108	123	89
0114	Long Hollow	BLM	6	10	11	7	9	33	15	13	10	9	17	11	10	12	4	2
0115	Willow Spring	BLM	6	12	9	0	NC	0	0	NC	NC	NC	NC	NC	NC	0	0	0
0116	Horse Hollow	BLM	3	20	43	35	27	36	18	23	30	68	1	0	9	19	17	16
0117	Three Peaks	BLM	23	17	11	13	6	10	14	11	7	6	1	0	0	0	0	0
0118	Jockey Springs	BLM/SITLA	9	13	37	39	57	33	56	54	29	21	4	3	3	5	0	0
0119	Bear Valley	Priv/NFS	7	5	6	0	0	0	0	0	NC	NC	20	107	66	34	29	27
0120	Pine Valley	BLM/SITLA	2	7	11	37	96	64	43	25	17	7	0	4	14	10	16	15
0121	West Lund	Priv/BLM	8	19	12	36	47	85	66	23	13	19	0	2	43	35	31	44
0122	Minersville #3	BLM/SITLA	117	384	308	627	23	4	29	85	169	306	324	211	367	424	579	332
0123	West of Rush Lake	Priv/BLM										30	34	34	49	80	86	75
0124	Adams Well	BLM											-	21	40	76	81	69
0125	Wild Pea Hollow	BLM/SITLA											3	9	19	46	83	75
0126	Horse Valley	BLM												2	1	3	2	2
0127	Water Hollow	BLM/SITLA													8	15	9	12
0128	Lower Bear Valley	Private													2	C	0	0
0129	Coyote Pond	BLM														13	9	0
0130	Domingus Escalante (DE)	BLM														C	0	0
0131	Tebbs Pond	BLM														C	0	0
0132	Minersville Highway	BLM															1	1
0133	Steer Hollow	BLM																1
OTHER	OTHER	Private	1014	521	981	0	0	15	0	0	0	0	0		2955	2868	3501	2444
OTHER	OTHER	Public	90	65	199	66	0	0	0	0	0	0	0		688	834	955	731
OTHER	OTHER	SITLA													17	38	36	65
TOTAL	WEST DESERT RECOVERY AREA		3395	2647	3935	4843	375	2405	1680	1381	1999	2111	2395	2850	3660	3740	4492	3240

Appendix VI.



Appendix VI. Counts of Utah Prairie Dogs in the Paunsaugunt Recovery Area, 1986-2001.

Complex	Complex Location Name	Ownership	Spring 86	Spring 87	Spring 88	Spring 89	Spring 90	Spring 91	Spring 92	Spring 93	Spring 94	Spring 95	Spring 96	Spring 97	Spring 98	Spring 99	Spring 00	Spring 01
0201	Dog Valley	Priv/BLM	0	4	38	79	75	181	89	12	0	3	8	2	0	1	9	15
0202	Ahlstrum Hollow	NFS	4	4	0	4	0	10	7	3	14	0	3	0	0	0	0	0
0203	John's Valley North	Priv/SITLA	NC	0	0	0	0	0	0	0	NC	0	NC	NC	NC	NC	NC	39
0204	John's Valley-W&E of hwy	Priv/NFS/SITLA	146	89	43	0	0	1	27	56	28	37	44	62	12	38	0	12
0205	Pine View/Widtsoe	Priv/NFS/SITLA	302	311	110	30	0	3	1	85	54	14	24	18	37	26	3	6
0206	Tom Best Springs	NFS	100	153	37	86	0	0	7	3	0	0	5	10	23	90	14	16
0207	Panguitch Lake	Priv/NFS	9	8	38	30	0	13	12	65	64	49	47	80	112	102	73	64
0208	Coal Pit Wash	Public-BLM	-	-	17	44	NC	8	0	0	0	NC	NC	NC	NC	NC	NC	NC
0209	SR 12-22 Bryce Airport	Priv/BLM/NFS/SITLA	97	89	121	88	51	68	117	345	190	10	17	46	69	141	33	37
0210	Coyote Hollow	Priv/NFS/SITLA/BLM	16	10	0	0	0	104	144	38	6	17	44	109	19	16	49	38
0211	Tropic	Private	10	38	25	42	37	21	21	0	0	NC	NC	NC	0	0	0	0
0212	Berry Springs	NFS	40	53	NC	51	38	35	27	8	0	0	0	2	8	12	17	2
0213	Bryce Canyon NP	NPS								0	7	6	6	3	2	1	7	1
0214	Dave's Hollow	NFS	21	0	NC	0	0	0	0	0	0	0	0	NC	NC	NC	NC	NC
0215	Bryce Canyon NP Visitor Center	NFS/NPS								91	76	49	47	29	66	61	94	48
0216	Blue Springs Valley	Priv/NFS	11	5	NC	27	8	NC	0	3	0	2	0	0	0	0	0	0
0217	County Line/Castle Cnyn	Priv/SITLA	12	18	0	0	NC	25	30	30	43	77	165	178	241	200	60	18
0218	BCNP-East Creek	NFS/NPS	45	116	67	144	165	223	181	188	83	28	23	26	58	77	20	1
0219	Panguitch	Priv/BLM	232	475	432	503	10	444	450	441	396	362	354	332	246	239	130	213
0220	SR12 near SR89	Priv/BLM	0	4	0	0	NC	15	16	83	35	29	48	39	41	30	8	20
0221	Y Town-and north	Priv/BLM	133	359	16	110	NC	12	54	46	86	107	81	38	51	43	186	94
0222	Old Cabin	Priv/BLM	14	NC	NC	NC	NC	1	0	10	12	NC	0	0	0	0	0	NC
0223	Hatch	Private	337	303	391	187	NC	150	147	190	153	198	228	172	100	66	231	111
0224	UE I&II	Private	31	44	33	14	NC	12	12	12	116	15	9	4	15	13	0	0
0225	Bryce Canyon NP- East Fork	NPS																
0226	Deer Creek	BLM																0
0227	Podunk Guard Station	NFS																0
OTHER	OTHER	Public	0	0	13	0	165	0	0	0	0	0	NC			298	218	120
OTHER	OTHER	Private	0	0	0	0	0	0	0	0	0	0	0			853	706	557
OTHER	OTHER	SITLA	0	100	0	0	0	0	0	0	0	0	0			22	10	58
TOTAL	PAUNSAUGUNT RECOVERY AREA		1560	2189	1383	1460	549	1357	1368	1748	1378	1003	1153	1150	1100	1173	934	735



Appendix VI. Counts of Utah Prairie Dogs in the Awapa Plateau Recovery Area, 1986-2001.

Complex	Complex Location Name	Ownership	Spring'86	Spring'87	Spring'88	Spring'89	Spring'90	Spring'91	Spring'92	Spring'93	Spring'94	Spring'95	Spring'96	Spring'97	Spring'98	Spring'99	Spring'00	Spring'01
0300	Pollywog/Top	NFS	10	7	17	6	1	0	5	2	16	20	25	30	25	31	34	5
0301	Lost Knoll E.	NFS	10	8	NC	18	4	0	1	0	0	4	0	0	NC	NC	0	0
0302	Dry Lake	NFS	2	4	8	9	14	0	0	0	0	0	NC	NC	NC	NC	0	0
0303	Big Lake	NFS								0	0	0	0	0	NC	NC	0	0
0304	Doctor Ck.	NFS	0	4	2	16	6	32	12	2	0	0	0	0	0	NC	NC	0
0305	Pelican Pt.	NFS	0	0	11	10	3	0	0	1	0	0	0	NC	0	9	0	0
0306	Square Reservoir Road	BLM/SITLA	5	5	10	35	2	0	0	0	0	0	NC	0	0	0	4	0
0307	Hunt's Reservoir	BLM/SITLA	32	50	88	322	65	0	2	2	5	16	54	26	67	13	5	6
0308	Dog Lake	SITLA	0	0	NC	0	0	0	NC	0	0	4	NC	NA	NC	NC	0	NC
0309	Forshea Res.	SITLA	45	44	NC	68	70	35	3	0	0	0	NC	NC	NC	NC	0	0
0310	Flossie Lake	SITLA	14	14	4	38	21	0	3	2	0	0	2	0	4	5	0	10
0311	Hare Lake-Rock Reservoir	BLM/SITLA	21	12	18	3	0	0	2	1	1	2	0	0	0	10	12	4
0312	The Tanks/Cedar Pk.Dr.	BLM/SITLA	6	17	9	26	13	14	0	0	0	15	7	5	9	27	53	7
0313	Mud Lake	BLM	-	-	NC	12	0	0	0	0	4	2	12	2	10	0	0	2
0314	Smooth Knoll	BLM	-	-	NC	12	4	0	0	0	0	0	0	0	NC	NC	NC	NC
0315	Sage Hen Draw	BLM/NFS	-	-	NC	8	2	5	0	0		0	0	0	0	NC	NC	0
0316	Big Hollow-Flat Top	BLM/SITLA	31	86	86	308	78	2	9	15	98	84	129	134	116	27	17	88
0317	Terza Flat	BLM/SITLA	124	117	NC	77	9	0	3	14	2	5	14	0	4	0	8	8
0318	Moroni Pk.Res.	BLM/SITLA	0	0	NC	NC	0	0	0	0	0	0	0	0	NC	NC	0	0
0319	Horse Valley	Priv/BLM	95	37	28	26	40	81	85	47	90	143	15	NC	0	0	0	0
0320	LOA-BICKNELL-LYMAN	Private	37	42	11	14	15	3	14	8	54	34	7	27	14	20	7	6
0321	Greenwich-Koosharem	Private	20	5	81	66	0	46	4	21	7	62	39	26	53	44	33	26
0322	Tidwell Slope	NFS	44	40	29	39	0	0	7	5	2	2	1	4	4	NC	0	3
0323	Gooseberry	Priv/NFS	-	-	11	NC	10	208	223	242	NC	7	18	79	36	NC	231	9
0324	So.Koosharem	Priv/BLM	-	-	NC	NC	0	3	91	40	50	54	30	20	10	10	20	11
0325	Burrville	Priv/BLM	5	10	NC	0	0	0	0	NC	0	0	NC	NC	0	0	0	16
0326	Capitol Reef N.P.	NPS	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
0327	Hare Valley	Private	-	-	-	-	-	-	-	-	-	4	15	4	1	4	0	0
0328	Forsyth Reservoir	NFS	-	-	-	-	-	-	-	-	2	2	0	0	0	0	0	0
0329	Giles Hollow	NFS	-	-	-	-	-	-	-	-	-	0	1	0	0	1	0	7
0330	Deer Peak	BLM/NFS	-	-	-	-	NC	NC	NC	NC	NC	NC	NC	NC	0	NC	0	0
0331	Angle	Private																new
OTHER	OTHER	Private											0				291	68
OTHER	OTHER	Public				6							0				81	130
OTHER	OTHER	SITLA															52	10
TOTAL	AWAPA PLATEAU RECOVERY AREA		501	502	413	1119	357	429	464	402	331	460	369	357	353		424	208

Certificate No. UPDCR-SRO _____

State of Utah
Division of Wildlife Resources

Utah Prairie Dog Control
Certificate of Registration

This *Certificate of Registration* authorizes _____
(Name of Registrant)

of _____ (Phone: _____)
(Complete Address)

to remove no more than _____ prairie dogs by the following method(s):
(Maximum number)

_____ (shooting [during daylight hours] or trapping)
during the period _____ through _____

The property situated in Township _____, Range _____, Section _____

Town Name _____ has been evaluated by _____
(Name of DWR Personnel)

who has authorized removal for the purpose of _____

This property is owned by _____
(Property Owner)

of _____ (Phone: _____)
(Complete Address)

1. The above *Certificate of Registration* may be issued on private lands throughout the range of the Utah prairie dog. Taking of Utah prairie dogs on lands other than described on this *Certificate of Registration*, including all public lands, will be deemed to be a violation of state and/or federal laws.
2. The following information must be reported to Utah Division of Wildlife Resources (DWR) every thirty (30) days: name and address of Certificate holder, *Certificate of Registration* number, location and method of take of all Utah prairie dogs taken during the thirty (30) day period, and any other information requested from time to time by DWR.
3. The use of any chemical toxicant including, but not limited to, gas and poison is strictly prohibited.
4. This *Certificate of Registration* is nontransferable, is valid only in the area and for the period specified above, and must be in possession of registrant when exercising any privileges hereunder. Renewals or changes dates and/or area(s) will require obtaining a new *Certificate of Registration*.
5. It is the responsibility of the Certificate holder to abide by all local ordinances.

Issued this _____ day of _____, 19_____, under authority granted by *Wildlife Resources Code of Utah* and through the Director, Utah State Division of Wildlife Resources, 1596 W. North Temple, Salt Lake City, Utah 84116.

By _____
(Name)

(Title)

I have read and understand the control restrictions as stated above and in the State of Utah Proclamation of the Wildlife Board for Taking and Possessing Utah Prairie Dogs (*Cynomys parvidens*) and understand that any violation of these regulations may result in the immediate revocation of the Utah prairie dog control *Certificate of Registration* and criminal prosecution under the Endangered Species Act.

White - Registrant's Copy
Green - Nongame
Yellow - Regional Office

(Signature of Registrant)