

Utah Prairie Dog Recovery Efforts

1995 Annual Report

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UTAH PRAIRIE DOG RECOVERY EFFORTS - 1995 ANNUAL REPORT

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Abstract - Recovery efforts for the federally threatened Utah prairie dog in 1995 consisted of conducting annual spring counts, calculating acreage of all colonies mapped since 1976, and administering the transplant and control programs. Rangewide, spring counts of Utah prairie dogs declined to 3,533 adults, and currently are at their lowest levels since 1980. Counts on public lands declined 26%, to 729 adults, whereas counts on private lands increased slightly to 2,804. By recovery area, counts in the West Desert Recovery Area increased slightly (11%), counts in the Paunsaugunt Recovery Area declined 34%, and counts in the Awapa Plateau Recovery Area increased by 34%, but remain dangerously low. In 1995, Utah prairie dogs occupied only 6,977 of the 27,647 acres on which they have been mapped since 1976. By recovery area, they occupied 42% of the acres on which they have been mapped in the West Desert Recovery Area, 21% of the acres on which they have been mapped in the Paunsaugunt Recovery Area, and on only 16% of the acres on which they have been mapped in the Awapa Plateau Recovery Area since 1976. Of the 6,977 occupied acres, only 2,152 (31%) were publicly owned. Of the 20,670 unoccupied acres, 49% are on public lands, 25% are on private lands, and 26% are on School and Institutional Trust Lands (State Lands). The Adam's Well site was prepared as a transplant site at which 400 prairie dogs were to be transplanted. However, the site became unavailable due to ongoing appeals. As a result, only seven prairie dogs were translocated in 1995. These were translocated from two separate colonies where incidental take was allowed. Seventeen control permits allowing take of 680 prairie dogs were issued to 15 individuals. Reported take was 460 prairie dogs, for a 68% success rate. Based on declining population numbers and distribution, as well as vague and seemingly unachievable recovery goals, it is recommended that the existing recovery plan be revised to take into consideration more current data and current principles of conservation biology. An interim Conservation Strategy has been proposed to direct recovery efforts for the next 5 years while the recovery plan is being revised.

INTRODUCTION

The Utah Prairie Dog (*Cynomys parvidens*) is a burrowing member of the squirrel family that inhabits arid grasslands and occurs only in southwestern Utah. It is one of three species of white-tailed prairie dogs in the United States and is the western most member of the genus *Cynomys*. Utah prairie dogs were estimated to occupy about 700 sections in southwestern Utah and number

more than 95,000 individuals in the 1920's. By the 1960's, distribution of Utah prairie dogs was greatly reduced due to intensive control campaigns, disease (plague), and loss of habitat (See USFWS 1991). Studies by Collier and Spillett (1972) indicated that Utah prairie dogs had declined or been eliminated from major portions of their historical range. By 1972, they estimated only 3,300 Utah prairie dogs remained in 37 separate colonies, and the species would be extinct by the year 2000 (Collier and Spillett 1973, U.S. Fish and Wildlife Service 1991). Due to the dramatic decline in numbers and distribution, the Utah prairie dog was classified as an endangered species on June 4, 1973. The total number of prairie dogs and number of colonies subsequently increased to a point where they were causing damage on private lands and were considered a nuisance. Because of the improved status of the species and large increases of prairie dogs on private lands, the U.S. Fish and Wildlife Service reclassified the species from endangered to threatened on May 29, 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 (USFWS 1991). This report covers efforts conducted by the Utah Division of Wildlife Resources in 1995 towards recovery of Utah Prairie Dogs.

A high percentage of occupied prairie dog complexes (81% in 1981, 54% in 1995) and prairie dogs (79% in 1995) are on privately owned lands, resulting in a large number of complaints by landowners suffering damage due to prairie dogs. In 1972, the Utah Division of Wildlife Resources initiated a transplant 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 transplant methods and selection of transplant sites (Coffeen and Pederson 1993). These guidelines are continually modified as new information becomes available. Transplant efforts continued annually each summer from 1972 through 1992. There has been no active transplant program since 1992. From 1972 to 1992, over 16,740 Utah prairie dogs have been live-trapped from private lands and transplanted to public lands managed by the BLM, U.S. Forest Service, National Park Service, and State of Utah.

The Utah Division of Wildlife Resources initiated colony counts in 1976, and has been censusing adult Utah prairie dogs at every known colony site each spring since 1976. Counts are done in the spring before young are above ground, so that only adult animals that survive the winter are counted. Work by Crocker-Bedford (1975) indicates 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 higher juvenile male mortality rate 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. Crop damage and damage to equipment was estimated to cost farmers more than \$1.5 million annually (U.S. Fish and Wildlife Service 1991). The transplant program alleviated some of the nuisance complaints, but

did not satisfy all landowners having prairie dog problems. The Division felt ranchers in the area would not continue to tolerate continued losses, and a method of take was necessary. Therefore, as part of the reclassification from endangered to threatened in 1984, the problem of nuisance prairie dogs was addressed by developing a special rule for the Utah prairie dog to allow "take" of prairie dogs on agricultural lands in Cedar and Parowan Valleys in Iron County (Federal Register 1984). The number of prairie dogs that could be taken was limited to 5,000 animals annually and was confined to the period between June 1 and December 31. 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 incentive to illegally kill prairie dogs, and did not appear to negatively impact the population. The rule allowing take was amended by the U.S. Fish and Wildlife Service in June 1991 to allow take to include all private land throughout the range of the Utah Prairie Dog, and increased the total annual allowable take from 5,000 to 6,000 animals (Federal Register 1991). The justification for allowing take was that juvenile Utah prairie dogs, the primary source of the nuisance complaints, experience a high natural mortality rate over the fall and winter, estimated to be 73%, and would perish anyway (U.S. Fish and Wildlife Service 1991).

Recovery Plan Objectives

The recovery objective stated in the Utah prairie dog recovery plan (U.S. Fish and Wildlife Service 1991) is delisting by the year 2000. Criteria required to achieve delisting 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

METHODS

Annual Counts/Colony Occupancy

Adult prairie dogs were counted between March and July, 1995. Counts involved driving to all known colonies, scanning the colony with binoculars or spotting scope, and counting all visible prairie dogs. Colonies were mapped on 1:24,000 USGS topographical maps, and count data were recorded by colony location. Land ownership was determined for each colony. Counts were conducted on clear, calm days, and were discontinued on cloudy and windy days. Counting was also discontinued on days when light, wispy clouds were blowing over because the shadows from these clouds are perceived by prairie dogs to be from a raptor.

Acreage of all known Utah prairie dog colonies mapped since 1976 was calculated using a digital planimeter. Percent occupancy was derived by calculating the percent of total colonies occupied in 1995 by total acreage mapped. Acreage totals were calculated by land ownership, occupancy, and recovery area.

Transplant

There was no active transplant program during 1995. Prairie dogs were moved from two locations, the Cedar City Post Office site and West Hills Subdivision site in concurrence with biological opinions issued by the U. S. Fish and Wildlife Service. Those prairie dogs were captured in Tomahawk live traps baited with peanut butter and oats. Animals were restrained, dusted with flea powder, and ear tagged with #1 model ear tags before being released within 24-hours of capture.

Control Program

Landowners suffering damage due to prairie dogs were able to obtain a certificate of registration at the Division's Southern Regional Office in Cedar City, allowing them to kill nuisance prairie dogs on their land (Appendix IV). Permits were available beginning June 1 and could be obtained through December. Complainants were required to come to the Division's office, identify the location where damage was occurring, and then sign the permit agreeing to all rules of the control program. The permit allows the landowner to control only the number of Utah prairie dogs specified on the permit, and allows trapping or shooting as the only available control methods. Permits were issued for a 30-day period. A report indicating the number of prairie dogs killed is required at the end of a 30-day period. Landowners completing the report could request another permit for additional prairie dog control.

RESULTS

Population Counts

Prairie dog counts were conducted in 72 complexes comprising 722 separate colonies in 3 different recovery populations. Rangewide, counts declined to 3,533 from 3,674 in 1994 (Table 1, Fig. 2, Appendices I-III), and are at their lowest level since 1980. By land status, populations on private lands increased 4% from 1994 counts, but counts of Utah prairie dogs on public lands declined 26% (Table 1; Figs. 3, 4). Complexes on private lands comprised 54% of all active complexes, but contained 79% of the total number of Utah prairie dogs in 1995.

In 1995, the total acreage of all colonies in which Utah prairie dogs have been mapped since 1976 was calculated. Rangewide, Utah prairie dogs have

been mapped in colonies totalling 27,647 acres. In 1995, Utah prairie dogs occurred on only 6,977 (25%) of those acres (Fig. 5). Of the 6,977 occupied acres, only 2,152 (31%) were publicly owned. The remaining 4,825 occupied acres were privately owned (Table 1). Of the 20,670 unoccupied acres, 49% are on public lands, 25% are on private lands, and 26% are on School and Institutional Trust Lands (State Lands).

West Desert Recovery Area:

Overall, counts in the West Desert population increased slightly since 1994, from 1,860 to 2,070 (Fig. 6). Counts on public lands in the West Desert Recovery Area increased slightly from 453 to 482. However, a large decline occurred in the Buckskin Complex (Complex No. 0110), which went from 199 adults counted in 1994 to zero initially counted there during spring counts in 1995. Intensive follow-up surveys revealed the presence of approximately 22 individuals, counting juveniles. Plague is suspected as the cause of the large decline, although it was never confirmed. Flea swabbing at vacant burrows proved unsuccessful, and one coyote that was tested for presence of plague antibodies proved negative. Livestock permittees who graze the area commented about the lack of prairie dogs the previous October, so it is possible the crash occurred during summer/fall 1994.

Prairie dog colonies totalling 7,717 acres have been mapped in the West Desert Recovery Area since 1976. In 1995, Utah prairie dogs occupied only 3,266 of those 7,717 acres (42%). By land status, they occurred on 2,226 of the 5,098 private acres (43%) on which they have been mapped since 1976, on 823 of the 2,379 public acres (39%), and on 217 of the 241 State Trust land acres on which they have been mapped in the West Desert Recovery Area (Tables 1, 2).

Paunsaugunt Recovery Area:

The count of Utah prairie dogs in the Paunsaugunt Plateau Recovery Area declined 34%, from 1,511 in 1994 to 1,003 in 1995. This represents the lowest count in this recovery area since 1984, and is considerably below the 10-year average count of 1,493 Utah prairie dogs. By land status, counts on private lands declined 16%, and counts on public lands declined dramatically, from 427 in 1994 to only 95 in 1995, a 78% decrease (Table 1, Fig. 7). This represents the lowest count of prairie dogs on public lands in this recovery area since 1976, when counts first began. The large decline of prairie dogs in this recovery area can be partially attributed to a large crash in the Bryce Canyon/Ruby's Inn (Complex No. 0209) and East Creek (Complex No. 0218) complexes. Combined, counts in these two complexes went from 285 in 1994 to 38 in 1995 (Appendix II). Plague was confirmed as the cause of the large die-off in this recovery area.

Utah prairie dog colonies totalling 10,267 acres have been mapped in this recovery area since 1976. In 1995, Utah prairie dogs occurred on only 2,121 (21%) of those acres. By land status, in 1995 they occurred on 499 of the 3,394 (15%) public acres on which they have been mapped since 1976, on 1,168 of the 3,312 (35%) private acres on which they have been mapped, and on only 454 of the 3,561 (13%) of the State Trust lands on which they have been mapped in the Paunsaugunt Recovery Area (Tables 1, 3).

Awapa Plateau Recovery Area:

Counts in the Awapa Plateau Recovery Area increased slightly in 1995, from 303 counted in 1994 to 460 counted in 1995 (Table 1; Fig. 8). By land status, there were 308 Utah prairie dogs counted on private lands in this recovery area, and 152 on public lands. The counts on public lands are an

improvement over the low count of 47 in 1992, but remain dangerously low. The remaining prairie dogs in this recovery area are in very small colonies spread out over an extremely large area. The largest concentration was 18 prairie dogs in one general location. Most of the prairie dogs counted on private lands were located in 2 complexes, Nos. 0319 and 0321, which accounted for 205 of the 303 prairie dogs counted on private lands. The Gooseberry Complex (No. 0323) experienced a large crash between 1993 and 1995, declining from 242 to only 7 in 1995. Cause of the large crash is unknown, but plague is suspected.

Utah prairie dogs in 1995 occupied only 1,590 of the 9,663 acres on which they have been mapped since 1976 (16%). By land status, they occurred on 658 of the 894 private acres on which they have been mapped, on only 829 of the 6,513 public acres (13%) on which they have been mapped since 1976, and on 101 of the 2,256 (4%) of the State Trust lands on which they have been mapped in the Awapa Plateau Recovery Area (Tables 1, 4).

Table 1. Spring counts of Utah prairie dogs by recovery area and land ownership.

										Acres Occupied	Acres Unoccup.	Total Acres
		88 Count	89 Count	90 Count	91 Count	92 Count	93 Count	94 Count	95 Count			
West Desert Private		3601	3898		1927	1204	907	1407	1588	2225.9	2871.8	5097.7
West Desert Public		688	945	375	478	476	474	453	482	823	1555.8	2378.8
West Desert State										217.5	23.2	240.7
West Desert Total		4289	4843	375	2405	1680	1381	1860	2070	3266.4	4450.8	7717.2
Paunsaugunt Private		977	936		733	795	975	1084	908	1168.5	2143.4	3311.9
Paunsaugunt Public		406	524	494	624	573	773	427	95	499.3	2894.6	3393.9
Paunsaugunt State										453.7	3107.7	3561.4
Paunsaugunt Total		1383	1460	494	1357	1368	1748	1511	1003	2121.5	8145.7	10267.2
Awapa Plateau Priv.		131	106	65	341	417	358	201	308	658.5	235.2	893.7
Awapa Plateau Pub.		282	1013	292	88	47	44	102	152	829.8	5683.5	6513.3
Awapa Plateau Stat										101.4	2154.6	2256
Awapa Plateau Total		413	1119	357	429	464	402	303	460	1589.7	8073.3	9663
Total Private		4709	4940	65	3001	2416	2240	2692	2804	4052.9	5250.4	9303.3
Total Public		1376	2482	1161	1190	1096	1291	982	729	2152.1	10133.9	12286
Total State										772.6	5285.5	6058.1
Total All		6085	7422		4191	3512	3531	3674	3533	6977.6	20669.8	27647.4

Table 1. Spring counts of Utah prairie dogs by recovery area and land ownership.

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

Fig. 2. Counts of Prairie Dogs on
Private and Public Lands, 1980-1995.

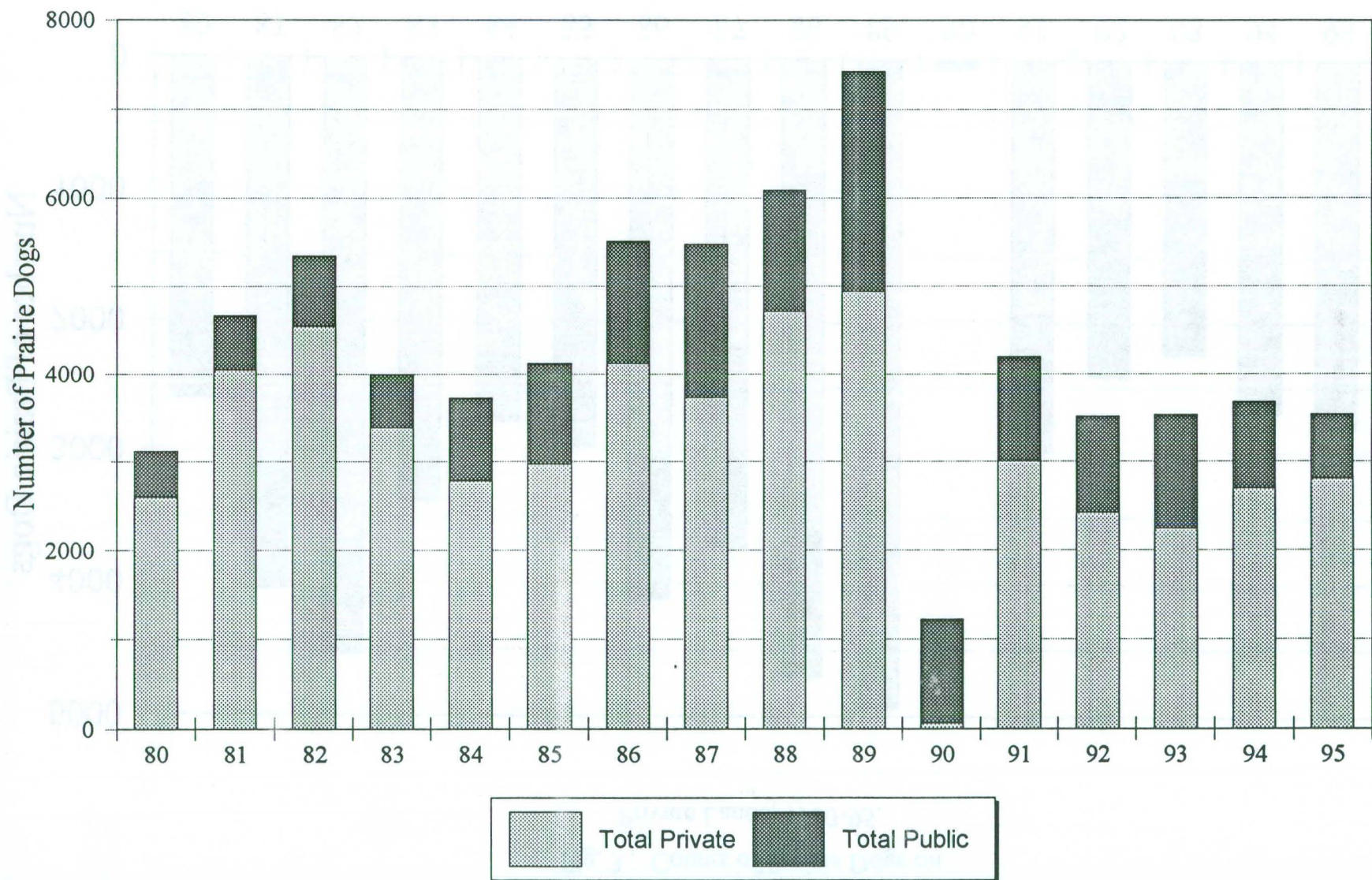


Fig. 3 . Counts of Prairie Dogs on
Private Lands, 1980-95.

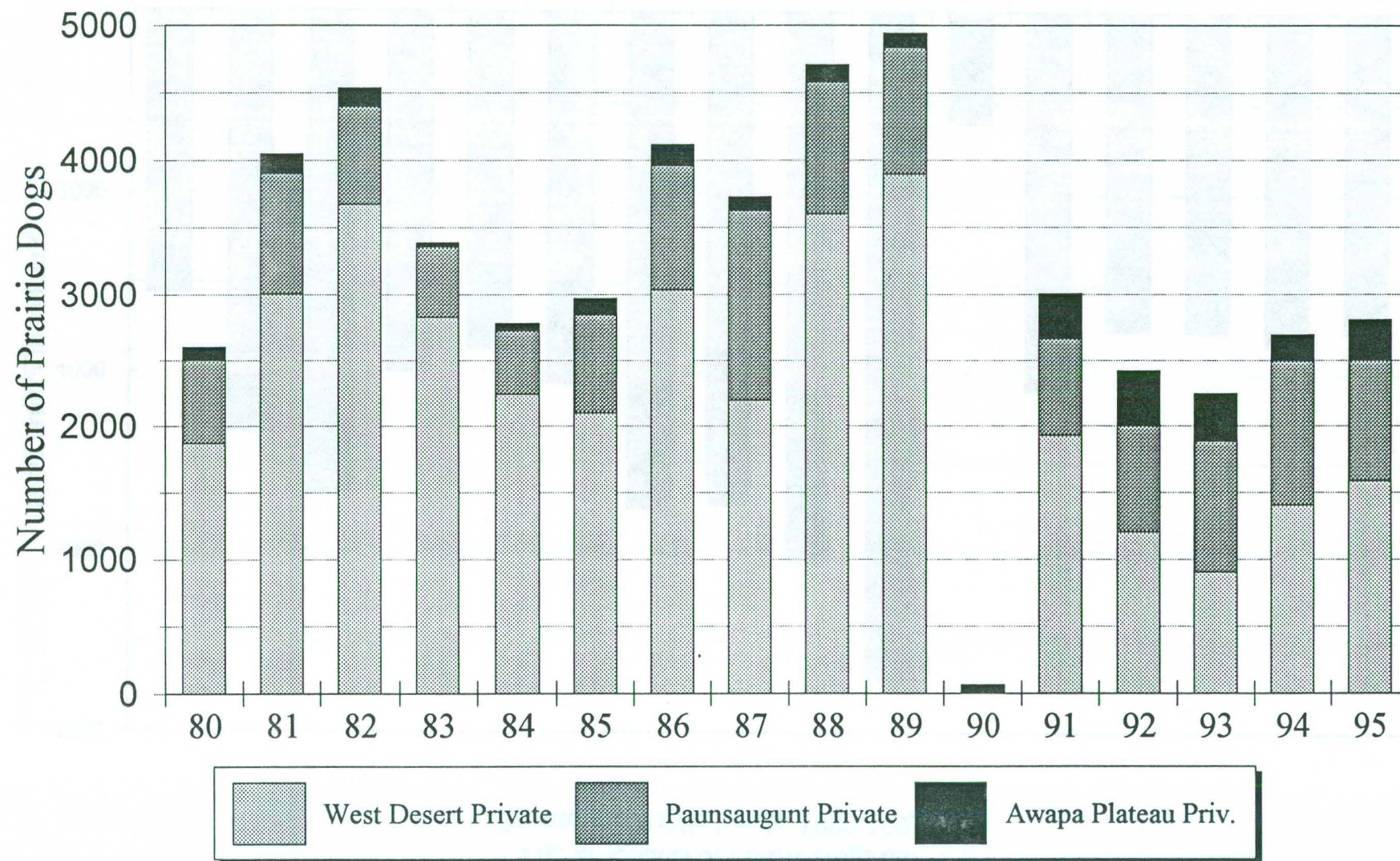


Fig. 4. Counts of Prairie Dogs on
Public Lands, 1980-85.

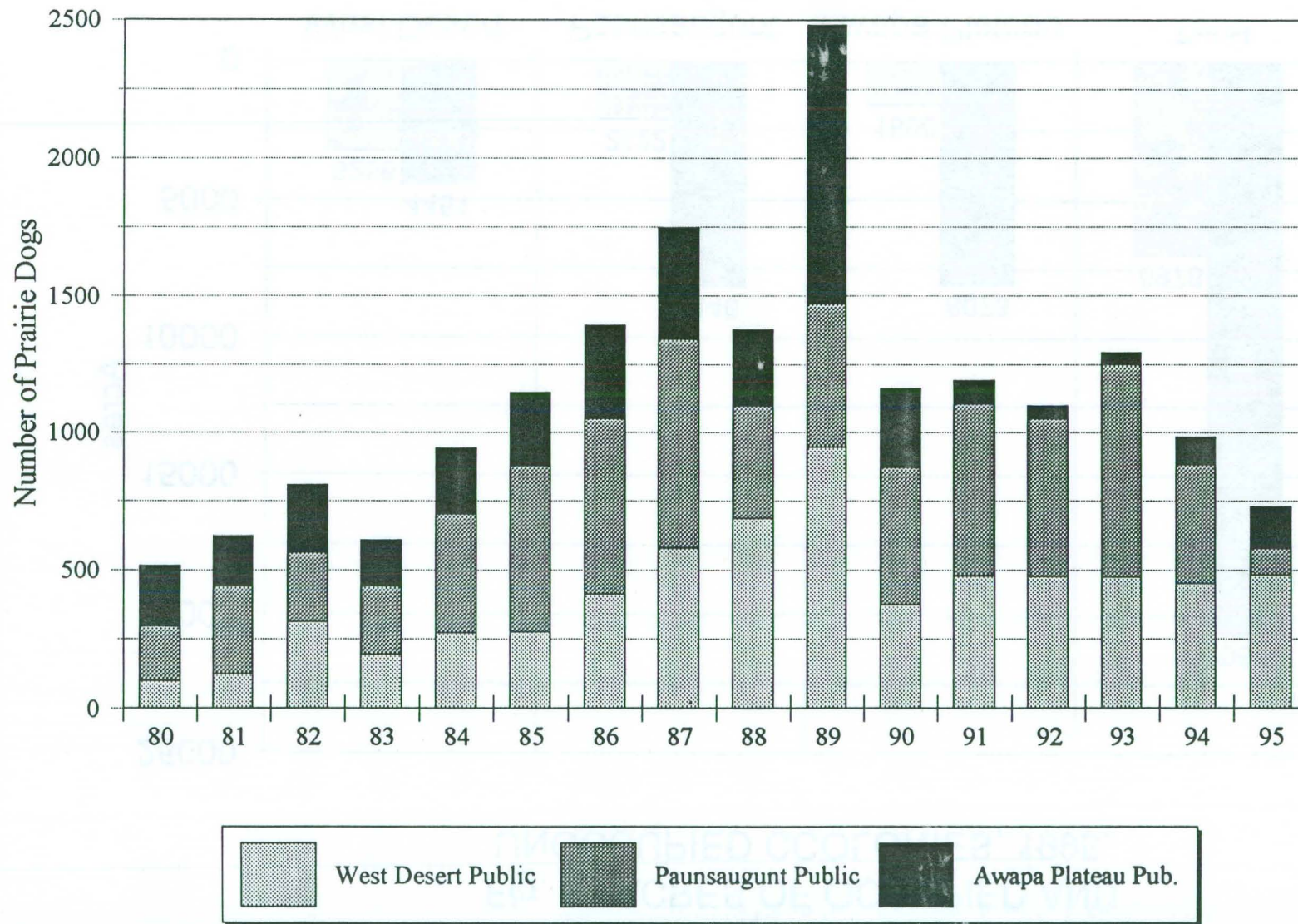


Fig. 5. ACRES OF OCCUPIED AND UNOCCUPIED CCOLONIES, 1995.

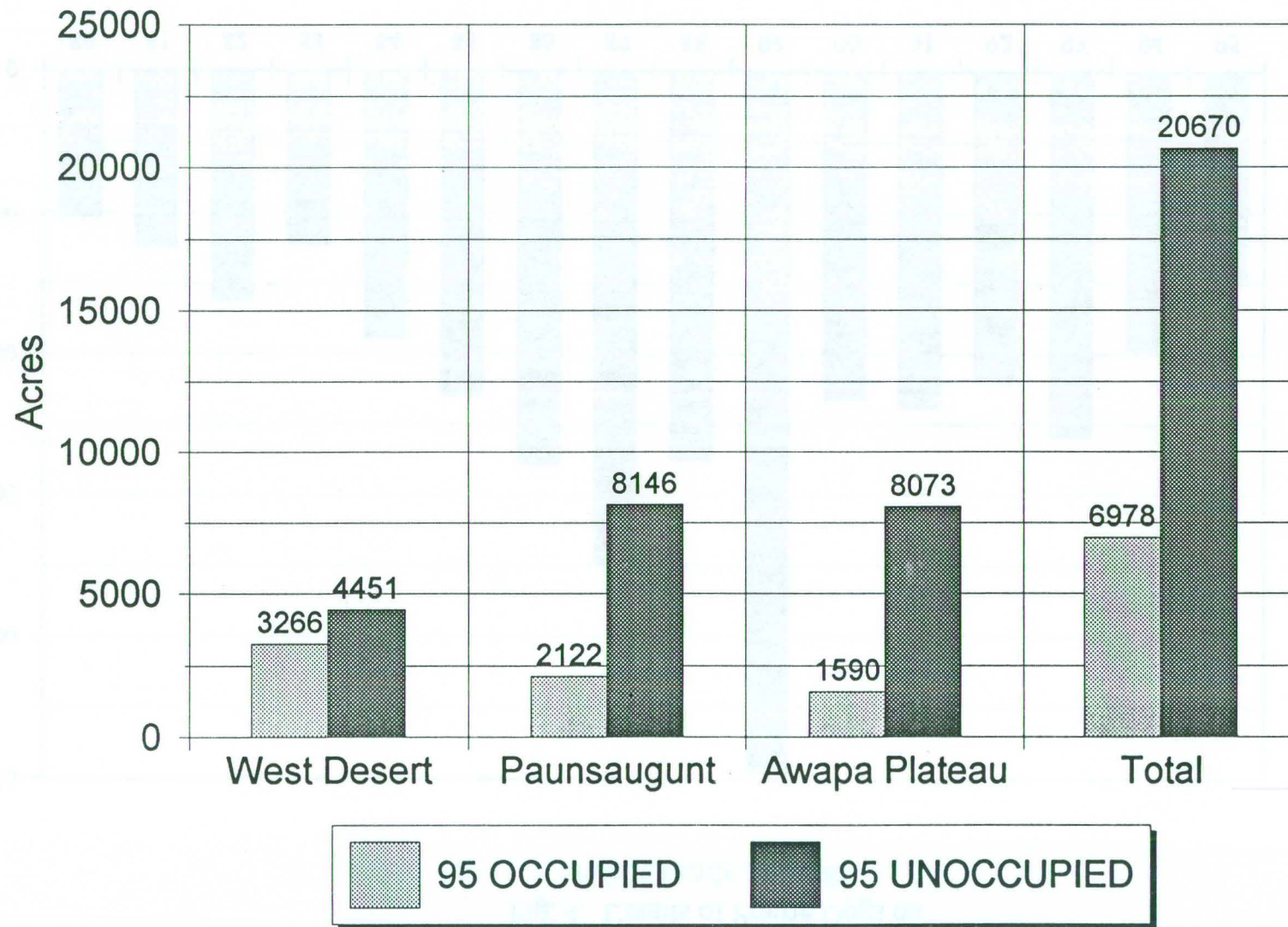


Fig. 6. Counts of Utah Prairie Dogs
in the West Desert Recovery Area.

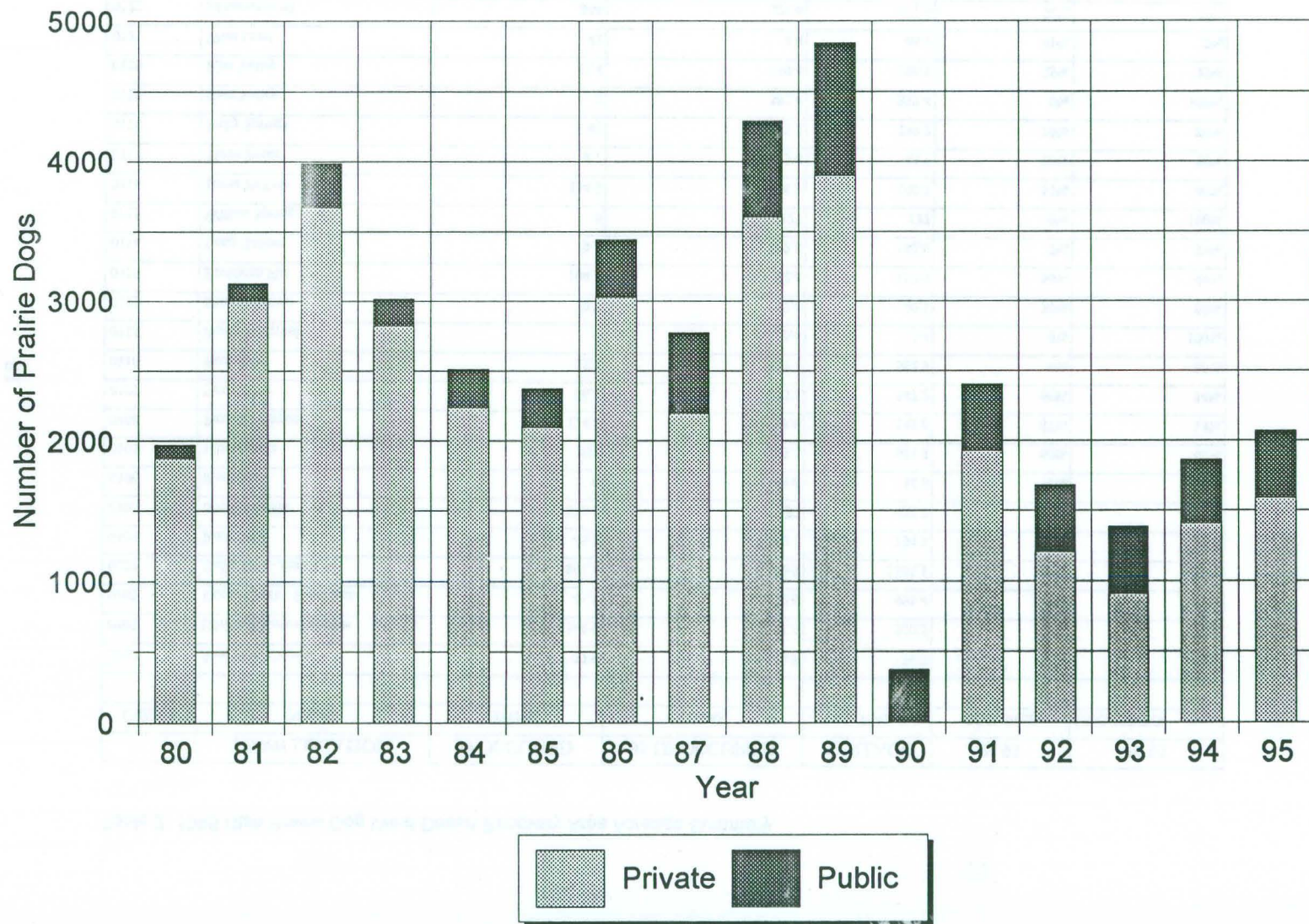


Table 2. 1995 Utah Prairie Dog West Desert Recovery Area Acreage Summary.

UWIN #	TOWN LOCATION/ NAME	95 OCCUPIED TOTAL	95 UNOCCUPIED TOTAL	ACREAGE TOTAL	% 95 OCCUPIED	% 95 UNOCCUPIED
0100	Rest Stop-Kanarra	27.9	48.8	76.7	36%	64%
0101	Divide-S.Kana Overpass	148.9	371.6	520.5	29%	71%
0102	Ducan Creek - Quichipah	45.8	452.6	498.4	9%	91%
0103	Cedar City - Enoch	891.8	999.3	1891.1	47%	53%
0104	Rush Lake	45.2	109.1	154.3	29%	71%
0105	South Summit	375.3	57	432.3	87%	13%
0106	Roadside	0	38.6	38.6	0%	100%
0107	Mortenson's	378	253.3	631.3	60%	40%
0108	Parowan Airport	124.8	18.8	143.6	87%	13%
0109	Paul Miller	96.5	50.7	147.2	66%	34%
0110	Buckskin	25.2	537.1	562.3	4%	96%
0111	Rocky Reservoir	0	5.4	5.4	0%	100%
0112	Shurtz Canyon	9.7	39.4	49.1	20%	80%
0113	Buckhorn Flat	104.8	82.6	187.4	56%	44%
0114	Long Hollow	9.8	132.8	142.6	7%	93%
0115	Willow Spring	0	127	127	0%	100%
0116	Horse Hollow	154.8	146.1	300.9	51%	49%
0117	Three Peaks	9.1	35.6	44.7	20%	80%
0118	Jocky Springs	48	191.2	239.2	20%	80%
0119	Bear Valley	0	382.4	382.4	0%	100%
0120	Pine Valley	47.4	139.4	186.8	25%	75%
0121	West Lund	42	4.4	46.4	91%	9%
0122	Minersville #3	644	227.6	871.6	74%	26%
0123	West of Rush Lake	37.4	0	37.4	100%	0%
0124	Adams Well					
	Total Acreage:	3266.4	4450.8	7717.2	42%	58%
	Note: Adams Well 80 acres not included in total.					

Fig. 7. Counts of Utah Prairie Dogs
in the Paunsaugunt Recovery Area.

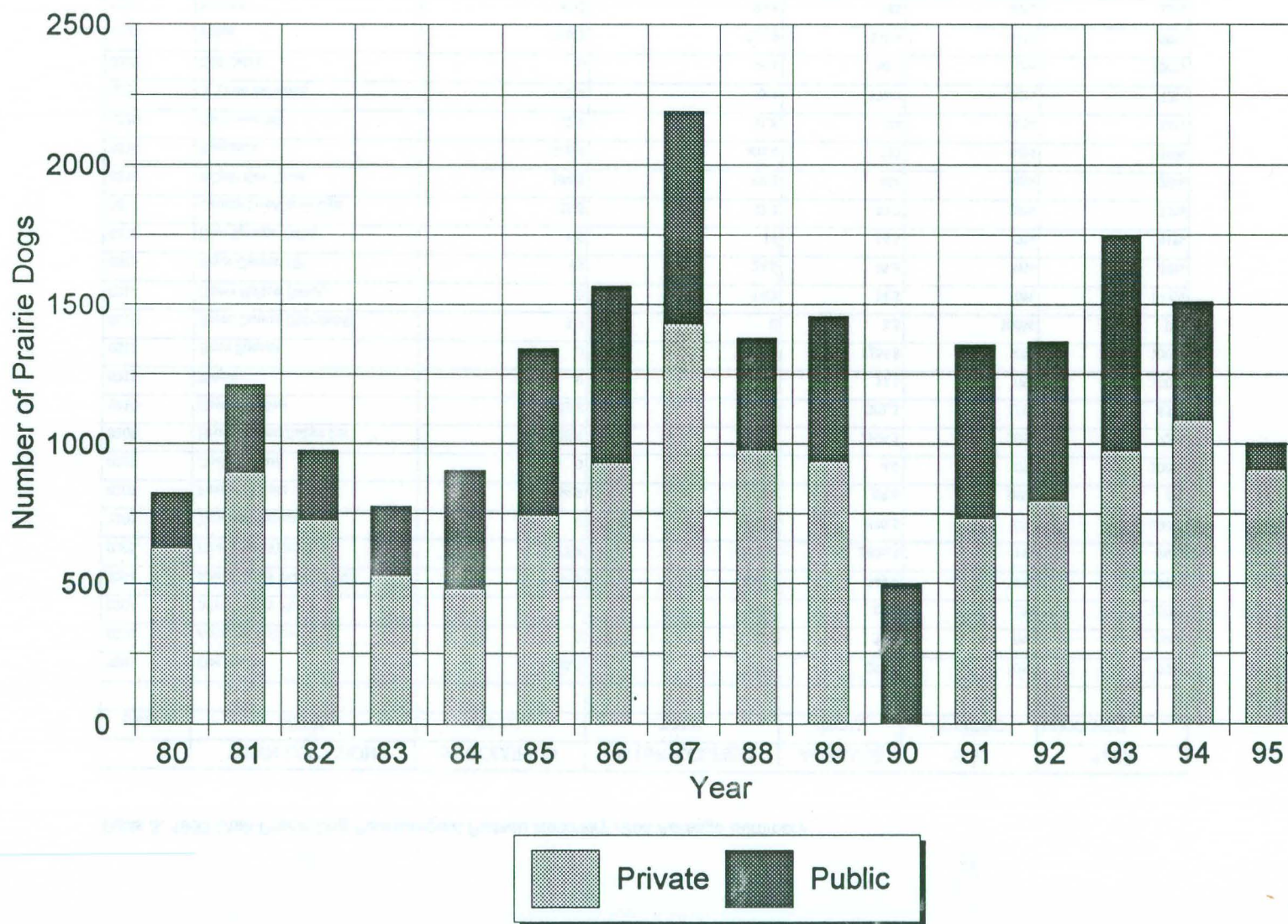


Table 3. 1995 Utah Prairie Dog Paunsaugunt Plateau Recovery Area Acreage Summary.

	TOWN LOCATION/	95 OCCUPIED	95 UNOCCUPIED	ACREAGE	% 95	% 95
UWIN #	NAME	TOTAL	TOTAL	TOTAL	OCCUPIED	UNOCCUPIED
0201	Dog Valley	28.7	267.1	295.8	10%	90%
0202	Ahlstrum Hollow	0	26.7	26.7	0%	100%
0203	John's Valley North	0	80.2	80.2	0%	100%
0204	John's Valley W&E of hwy.	64.5	685.4	749.9	9%	91%
0205	Pine View/Widtsoc	17.8	2387.5	2405.3	1%	99%
0206	Tom Best Springs	0	470.5	470.5	0%	100%
0207	Panguitch Lake	84.9	3.7	88.6	96%	4%
0208	Coal Pit Wash	0	4.9	4.9	0%	100%
0209	Bryce Canyon/Ruby's Inn	620.4	1575.9	2196.3	28%	72%
0210	Coyote Hollow	43.8	257.5	301.3	15%	85%
0211	Tropic	0	57.5	57.5	0%	100%
0212	Berry Springs	0	1236.8	1236.8	0%	100%
0213	Bryce Canyon (Fairylane)	3.5	0	3.5	100%	0%
0214	Dave's Hollow (West)	0	14.3	14.3	0%	100%
0215	Bryce Canyon NP	69	24.8	93.8	74%	26%
0216	Blue Springs Valley	1.5	15	16.5	9%	91%
0217	County Line/Castle Cyn	23.5	57.2	80.7	29%	71%
0218	BCNP-East Creek	394.8	99.2	494	80%	20%
0219	Panguitch	316.6	405.4	722	44%	56%
0220	SR12 near 89	52.4	31.6	84	62%	38%
0221	Y Town and north	103.4	75.5	178.9	58%	42%
0222	Old Cabin	0	46.1	46.1	0%	100%
0223	Hatch	208.5	132.9	341.4	61%	39%
0224	UE I&II	88.2	99.8	188	47%	53%
0225	Bryce Canyon NP/East Fork	0	0	0	0%	0%
0226	Deer Creek	0	87	87	0%	100%
0227	Podunk Guard Station	0	3.2	3.2	0%	100%
	Total Acreage:	2121.5	8145.7	10267.2	21%	79%

Fig. 8. Counts of Utah Prairie Dogs
in the Awapa Plateau Recovery Area.

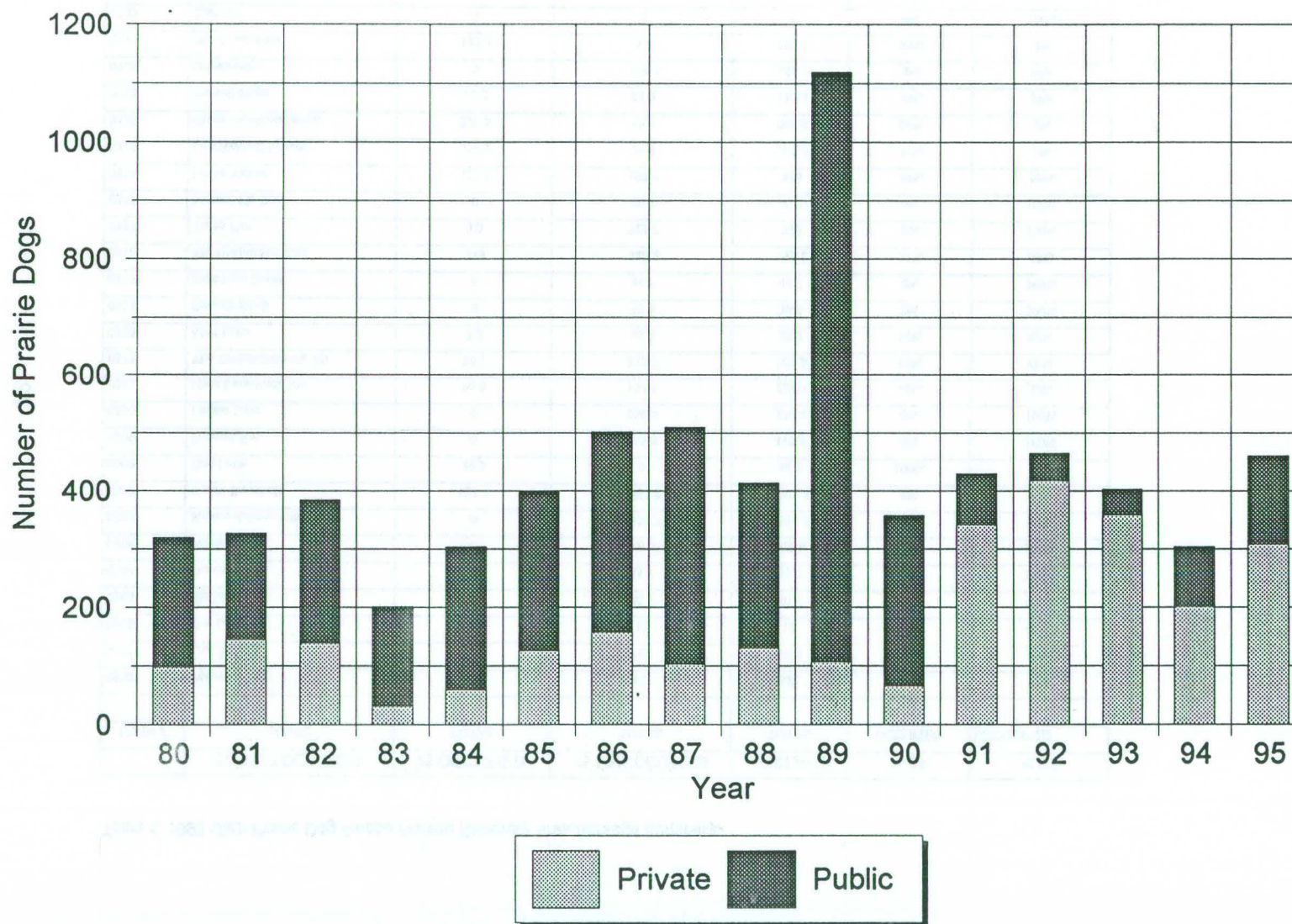


Table 4. 1995 Utah Prairie Dog Awapa Plateau Recovery Area Acreage Summary.

	TOWN LOCATION/ UWTN #	95 OCCUPIED TOTAL	95 UNOCCUPIED TOTAL	ACREAGE TOTAL	% 95 OCCUPIED	% 95 UNOCCUPIED
0300	Pollywog/Top	88.9	293.1	382	23%	77%
0301	Lost Knoll E.	22.1	76.1	98.2	23%	77%
0302	Dry Lake	0	12	12	0%	100%
0303	Big Lake	0	60.5	60.5	0%	100%
0304	Doctor Creek	0	35.7	35.7	0%	100%
0305	Pelican Pt.	0	107.8	107.8	0%	100%
0306	Square Reservoir Road	0	1550.7	1550.7	0%	100%
0307	Hunt's Reservoir	121.7	1883.8	2005.5	6%	94%
0308	Dog Lake	49.2	0	49.2	100%	0%
0309	Forshea Res.	0	415.6	415.6	0%	100%
0310	Flossie Lake	0	139.4	139.4	0%	100%
0311	Hare Lake/Rock Res.	96.8	132.1	228.9	42%	58%
0312	The Tanks/Cedar Pk. Dr	74.7	110.6	185.3	40%	60%
0313	Mud Lake	7.2	43.5	50.7	14%	86%
0314	Smooth Knoll	0	38.5	38.5	0%	100%
0315	Sage Hen Draw	0	44.7	44.7	0%	100%
0316	Big Hollow/Flat Top	245	548.2	793.2	31%	69%
0317	Terza Flat	3.3	715.7	719	0%	100%
0318	Moroni Pk. Res.	0	90.2	90.2	0%	100%
0319	Horse Valley	157.1	198.9	356	44%	56%
0320	Loa/Bicknell/Lyman	255.2	26.4	281.6	91%	9%
0321	Greenwich/Koosharem	276.5	18.1	294.6	94%	6%
0322	Tidwell Slope	65.2	85.2	150.4	43%	57%
0323	Gooseberry	9	155.1	164.1	5%	95%
0324	So. Koosharem	112.3	8.4	120.7	93%	7%
0325	Burrville	0	5	5	0%	100%
0326	Jones Bench	0	59.7	59.7	0%	100%
0327	Hare Valley	5.5	0	5.5	100%	0%
0328	Forsyth Res.	0	678	678	0%	100%
0329	Giles Hollow	0	529.7	529.7	0%	100%
0330	Deer Peak	0	10.6	10.6	0%	100%
	Total Acreage:	1,589.7	8,073.3	9,663	16%	84%

Transplant

An analysis of 10 West Desert Recovery Area transplant sites approved by the BLM in 1979 was conducted during summer 1994 to assess suitability of each site for transplanting of Utah prairie dogs (McDonald and Bonebrake 1994). Sites were evaluated against guidelines listed in the recovery plan (U. S. Fish and Wildlife Service 1991). That evaluation revealed that prairie dogs had been transplanted to nine of the ten sites, but remained at only five. Of those five, Utah prairie dogs were considered to be doing well at only one - the Minersville #3 site (Complex No. 0122). Only the site known as Adams Well had not previously had prairie dogs transplanted onto it, and none of the ten sites met the vegetation guidelines for transplant sites (USFWS 1991 - pages B1-B2). It became apparent the guidelines were vague and contain large, seemingly unreasonable ranges between minimum and maximum vegetation parameters. All sites contained a high percentage of woody shrubs, and many were lacking one or more of the necessary grass/forb components. The Adams Well and Horse Hollow sites appeared to be the most suitable of the sites that were evaluated, but only the Adams Well site was far enough away from private property to be considered for additional transplants.

It was apparent from the evaluation that data regarding the specific habitat needs of Utah prairie dogs were lacking, and that existing vegetation guidelines were vague and too incomplete to be used for management purposes. Based on the evaluation of existing, approved transplant sites, it was recommended the Adams Well site be developed as a transplant site, with the stipulation that it be developed into a research/demonstration site to better refine and improve guidelines for selecting and managing transplant sites.

Based on the evaluation of approved transplant sites, the Adams Well site was selected to be established as a transplant site and demonstration area. A management plan prepared for the site calls for establishment of paired 40-acre fenced and unfenced plots to determine the response of transplanted prairie dogs to areas where spring grazing is allowed on a rotational basis and where grazing is excluded. Intensive monitoring of prairie dogs, vegetation, grazing, and climatic factors was scheduled to occur concurrently with the transplanting of 200 prairie dogs in each of the plots. However, the project was appealed by the livestock permittee leasing the allotment, and the transplant never occurred. A 40-acre enclosure was built prior to the appeal, and vegetation sampling to determine species composition, percent cover, and seasonal productivity did occur throughout the summer. These data will provide baseline data should the transplants be allowed to proceed in 1996.

The U.S. Fish and Wildlife Service issued incidental take permits to two private developments in 1995, allowing removal and transplant of prairie dogs, in addition to one that was issued to the Cedar City Post Office in 1994. A total of seven prairie dogs were transplanted in 1995 - two from the Cedar City Post Office site (Colony No. 0103-U), and five from the West Hills Subdivision site (Colony No. 0103-CR). There are no remaining Utah prairie dogs at either site. Because the proposed Adam's Well transplant site was unavailable, those prairie dogs were moved to the Buckskin complex (No. 0110) and released in vacant burrows along the Mountain Fuel gas pipeline on the north side of State Highway 20. Prairie dogs are scheduled to be removed from approximately one third of the 4.5-acre Colman site (Complex No. 0103M) in

1995 to allow expansion of a warehouse. These also will be moved to the Buckskin complex if the Adams Well site remains unavailable.

In addition to the loss of the 6.5 acre Post Office site, 7.5 acre West Hills site, and 2-acre Colman site, several other sites were destroyed due to unpermitted development. They include colony Nos. 0103C (5.1 acres), 0103CT (44 acres), 0103DD (5.9 acres), and a portion of 0103X (3 acres). Construction at the Cedar City airport resulted in the loss of an additional 31 acres. Cedar City cleared brush from 47 acres of a nearby parcel to offset the loss, but it is unknown if that area will become recolonized. Numerous other parcels are at risk due to rapid growth and development occurring throughout the range of the Utah prairie dog.

Control Program

In 1995, 17 control permits were issued to 15 persons allowing take of 680 prairie dogs at 15 different locations. The West Desert recovery area accounted for 6 of the 15 locations for which control permits were issued (40%), followed by the Paunsaugunt recovery area with 8 permits (53%), and the Awapa Plateau recovery area with 1 control permits (6%). Report forms were received for all 17 of the permits issued. Reported take was 461 Utah prairie dogs (of an allowed take of 680) for a 68% success rate. The average permitted take was 40 Utah prairie dogs per permittee, and the average actual take was 27 prairie dogs per permittee. Agriculture damage to crops and pastures was the main reason for persons requesting control permits. The number of complaints, permits issued, and prairie dogs taken under control permits is much lower than at any time since the control program was expanded to include the entire range of the Utah prairie dog (Table 6). However, reported success rate has increased from 39% to 68%, indicating that those

persons obtaining permits are more serious about removing prairie dogs from their lands (Table 5).

Table 5. Summary of the Utah prairie dog control program, 1991-1995.

	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>
Control Permits Issued:	59	59	32	43	17
Persons Issued Permits:	47	44	24	33	15
Allowed Take:	4,150	3,520	1,050	1,190	680
Actual Take:	1,618	1,543	599	739	460
Success Rate:	39%	44%	58%	62%	68%
Location of Permittee:					
-West Desert	22 (47%)	17 (39%)	14 (58%)	19 (58%)	6 (40%)
-Paunsaugunt	25 (53%)	25 (57%)	7 (29%)	12 (36%)	8 (53%)
-Awapa Plateau	0 (0%)	2 (4%)	3 (13%)	2 (6%)	1 (7%)
Location of take:					
-West Desert	640	556	266	505	171
-Paunsaugunt	978	937	243	198	290
-Awapa Plateau	0	50	90	36	0

DISCUSSION

Based on current declining trends and the paucity of prairie dogs per public land complex, the recovery goal of delisting by the year 2000 will be unachievable. Rangewide, Utah prairie dogs currently occupy only 25% of the area on which they have been mapped since recovery efforts have been underway, and counts are at their lowest levels since 1980, when the species was listed as endangered (vs. threatened). None of the three recovery populations identified in the Utah Prairie Dog Recovery Plan are closer to their recovery objective than last year, and all three are well below the recovery goal of 813 adults counted on public lands. The West Desert Recovery Population consists of 10 active colonies on public lands containing an average of 60 and median of 16 adult prairie dogs (range 6 to 306). The Paunsaugunt recovery population consists of 5 active colonies on public lands containing a median of 7 adult prairie dogs and an average of 21 (range 3 to 49), and the Awapa Plateau consists of 10 public lands complexes containing an average of 15 prairie dogs and a median of 4.5 prairie dogs (range 2 to 80). Rangewide, only 4 public lands complexes contain more than 50 individuals, and only 2 contain more than 100 individuals (See Appendix I). This compares with 7 complexes that had more than 50 adults in 1994 and three with more than 100.

Counts in the Paunsaugunt Plateau recovery population were expected to be down based on information collected in Bryce Canyon National Park by Dr. John Hoogland during summer 1994. Hoogland (pers. comm.) reported that prairie dogs in Bryce Canyon National Park displayed greatly reduced activity during summer 1994, often disappearing underground for several consecutive days. It is thought that this reduced activity was in response to the severe drought conditions that occurred during summer 1994. It can be speculated

that this increased stress associated with drought-induced reduced activity contributed to the plague epidemic that caused a severe population decline in the Bryce Canyon/East Creek area, and possibly in the Buckskin and Gooseberry complexes in the West Desert and Awapa Plateau Recovery Areas, respectively, as well. Additionally, the significant reduction in complaints and requests for control permits compared to previous years, as well as number of prairie dogs actually controlled, appears to reflect continued lower productivity rangewide.

The severe population decline in the Awapa Plateau recovery area since 1989 continues to be of critical concern, with the number of remaining prairie dogs at a critically low number. The numbers have declined to the point where prairie dogs remain in only a few isolated pockets on private property, and have essentially become extirpated on public lands on Parker Mountain. There was a slight recovery in a few isolated areas, but the low numbers remain a critical concern. Those that are on public land are extremely spread out, with 18 individuals being the largest group observed together at any location. Poor range condition is suspected to be the major factor limiting recovery in this large recovery area. The Awapa Plateau consists of 20 public lands complexes, but only one half of those were occupied by Utah prairie dogs.

An analysis of count data was conducted in 1995 to analyze population trends and ascertain whether population crashes could be predicted. Preliminary results from that analysis suggest that local populations of Utah prairie dogs exhibit non-linear 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. It is recommended that, based on these results, recovery

goals be revised to incorporate more fully metapopulation theory and its application to Utah prairie dog population dynamics and recovery (Richie 1995).

Based on analysis of population data and transplant success, it has become apparent that recovery goals in the current Utah Prairie Dog Recovery Plan are too vague, making recovery essentially unachievable based on those goals. For example, the recovery plan calls for maintaining a minimum of 813 adult prairie dogs on public lands in each recovery area for five consecutive years. However, it is unclear whether this should be one complex or 813 animals, or if it can be 25 separate complexes of 30 animals. Also, the recovery plan does not take into consideration the proximity of colonies to other colonies, or the frequent fluctuations in local population numbers. Therefore, it has been recommended that the current recovery plan be revised to take into consideration more current data on the biology and habitat needs of the Utah prairie dog, as well as the latest principles of conservation biology. Because data is still lacking on specific habitat requirements of Utah prairie dog, an interim Conservation Strategy has been proposed to direct recovery efforts for the next 5 years.

The Conservation Strategy proposes a three-phase strategy: 1) improving habitat at existing complexes, 2) conducting translocations and research at a minimum of three new translocation sites associated with existing sites, 3) developing a collaborative learning program to help resolve conflicts and foster local cooperation in Utah prairie dog recovery. Habitat manipulation is being 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 8 new proposed

translocation sites according to proposed research protocol. Proposed research will involve establishing five different 40-acre treatment plots at each transplant site to determine how habitat improvement and grazing practices might improve the persistence of translocated prairie dogs. Treatments will be: spring grazing with habitat manipulation, spring grazing with no habitat manipulation, fall grazing with no manipulation, habitat manipulation with no grazing, and no grazing with no habitat manipulation (control). Prairie dogs will be released in the center of each plot, and allowed to "select" which treatment type they prefer. Responses to be measured include treatment selection, foraging rates, activity budgets, survival, litter size, and juvenile growth rates. Collaborative learning techniques will be implemented simultaneously to garner support of local citizens and affected publics such as livestock permittees, developers, land managers, and local politicians.

MANAGEMENT RECOMMENDATIONS

1. A better understanding of habitat requirements of Utah prairie dogs is required to allow managers to identify transplant 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. A research study needs to be developed and implemented to gain better understanding of habitat needs of Utah prairie dogs, particularly the preferred vegetative composition. The research protocol outlined in the Utah Prairie Dog Conservation Strategy should be adopted and implemented without delay.

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 proposed Utah Prairie Dog Conservation Strategy.
3. Several successful public land sites (e.g., Buckskin, Minersville #3) are becoming dominated by sagebrush. Site-specific management plans need to be developed and implemented, consistent with the Utah Prairie Dog Conservation Strategy, to keep important public land colonies at an early successional stage dominated by grasses and herbaceous vegetation rather than woody shrubs.
4. An agreement for long-term management of all prairie dog complexes needs to 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 need to continue to be closely monitored to ensure the dramatic declines do not continue.
6. All aspects of recovery implementation need to involve public participation to garner the necessary local support for recovery to occur.

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

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

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

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

Appendix I. Spring counts of Utah prairie dogs in the West Desert Recovery Area 1985-1995.

UWIN #	Town Location Name	Spring'85	Spring'86	Spring'87	Spring'88	Spring'89	Spring'90	Spring'91	Spring 92	Spring 93	Spring 94	Spring 95
0100	Rest Stop-Kanarra	20	26	10	22	18	NC	37	48	40	6	5
0101	Kanarraville	60	83	205	90	564	NC	267	143	65	38	42
0102	Duncan Creek-Quichipah	553	770	363	551	569	NC	342	73	7	2	17
0103	CEDAR CITY - ENOCH	590	877	862	1114	1993	NC	734	700	492	728	823
0104	RUSH LAKE	20	27	10	79	141	0	55	45	2	39	84
0105	South Summit	7	27	10	61	105	NC	23	13	41	115	94
0106	Roadside	7	4	2	10	13	NC	1	0	2	3	0
0107	Mortenson's	5	12	24	62	281	NC	374	16	42	122	224
0108	Parowan Airport	6	10	16	34	NC	NC	37	36	76	82	76
0109	Paul Miller	19	69	14	97	124	NC	2	85	19	10	86
0110	Buckskin	80	133	9	0	13	110	165	216	232	199	0
0111	Rocky Reservoir	3	5	17	9	0	0	3	0	NC	NC	NC
0112	Shurtz Canyon	-	-	-	14	34	NC	44	19	6	5	4
0113	Buckhorn Flat	17	67	32	164	128	NC	41	45	123	265	157
0114	Long Hollow	6	6	10	11	7	9	33	15	13	10	9
0115	Willow Spring	9	6	12	9	0	NC	0	0	NC	NC	NC
0116	Horse Hollow	5	3	20	43	35	27	36	18	23	30	68
0117	Three Peaks	21	23	17	11	13	6	10	14	11	7	6
0118	Jockey Springs	4	9	13	37	39	57	33	56	54	29	21
0119	Bear Valley	37	7	5	6	0	0	0	0	0	NC	NC
0120	Pine Valley	2	2	7	11	37	96	64	43	25	17	7
0121	West Lund	9	8	19	12	36	47	85	66	23	13	11
0122	Minersville #3	68	117	384	308	627	23	4	29	85	140	306
0123	West of Rush Lake											30
OTHER	OTHER	58	49	133	354	0	0	0	0	0	0	0
OTHER	OTHER	742	1014	521	981	0	0	15	0	0	0	0
OTHER	OTHER	26	90	65	199	66	0	0	0	0	0	0
TOTAL	WEST DESERT RECOVERY AREA	2374	3444	2780	4289	4843	375	2405	1680	1381	1860	2070

Appendix II. Spring counts of Utah prairie dogs in the Paunsaugunt Plateau Recovery Area 1985-1995.

UWIN #	Town Location Name	Spring'85	Spring'86	Spring'87	Spring'88	Spring'89	Spring'90	Spring'91	Spring 92	Spring 93	Spring 94	Spring 95
0201	Dog Valley	0	0	4	38	79	75	181	89	12	0	3
0202	Ahlstrum Hollow	5	4	4	0	4	0	10	7	3	14	0
0203	John's Valley North	0	NC	0	0	0	0	0	0	0	NC	0
0204	John's Valley-W&E of hwy.	58	146	89	43	0	0	1	27	56	28	37
0205	Pine View/Widtsoe	262	302	311	110	30	0	3	1	85	54	14
0206	Tom Best Springs	106	100	153	37	86	0	0	7	3	0	0
0207	Panguitch Lake	22	9	8	38	30	0	13	12	65	64	49
0208	Coal Pit Wash	-	-	-	17	44	NC	8	0	0	0	NC
0209	SR 12-22 Bryce Airport	65	97	89	121	88	51	68	117	345	187	10
0209	Ruby's Inn (K, L, M)	6	6	6	2	21	NC	31	26	39	15	
0210	Coyote Hollow	4	16	10	0	0	0	104	144	38	6	17
0211	Tropic	82	10	38	25	42	37	21	21	0	0	NC
0212	Berry Springs	48	40	53	NC	51	38	35	27	8	0	0
0213	Bryce Canyon NP									0	7	6
0214	Dave's Hollow	17	21	0	NC	0	0	0	0	0	0	0
0215	Bryce Canyon NP Visitor Center									91	76	49
0216	Blue Springs Valley	4	11	5	NC	27	8	NC	0	3	0	2
0217	County Line/Castle Cnyn	11	12	18	0	0	NC	25	30	30	43	77
0218	BCNP-East Creek	39	45	116	67	144	165	223	181	188	83	28
0219	Panguitch	284	232	475	432	503	10	444	450	441	393	362
0220	SR12 near SR89	0	0	4	0	0	NC	15	16	83	35	29
0221	Y Town-and north	71	133	359	16	110	NC	12	54	46	86	107
0222	Old Cabin	17	14	NC	NC	NC	NC	1	0	10	12	NC
0223	Hatch	201	337	303	391	187	NC	150	147	190	292	198
0224	UE I&II	13	31	44	33	14	NC	12	12	12	116	15
OTHER	OTHER	0	0	0	13	0	165	0	0	0	0	0
OTHER	OTHER	27	0	0	0	0	0	0	0	0	0	0
OTHER	OTHER	0	0	100	0	0	0	0	0	0	0	0
TOTAL	PAUNSAUGUNT RECOVERY AREA	1342	1566	2189	1383	1460	549	1357	1368	1748	1511	1003

Appendix III. Spring counts of Utah prairie dogs in the Awapa Plateau Recovery Area 1985-1995.

UWIN #	Town Location Name	Spring'85	Spring'86	Spring'87	Spring'88	Spring'89	Spring'90	Spring'91	Spring 92	Spring 93	Spring 94	Spring 95
0300	Pollywog/Top	2	10	7	17	6	1	0	5	2	14	20
0301	Lost Knoll E.	7	10	8	NC	18	4	0	1	0	0	4
0302	Dry Lake	0	2	4	8	9	14	0	0	0	0	0
0303	Big Lake									0	0	0
0304	Doctor Ck.	0	0	4	2	16	6	32	12	2	0	0
0305	Pelican Pt.	0	0	0	11	10	3	0	0	1	0	0
0306	Square Reservoir Road	12	5	5	10	35	2	0	0	0	0	0
0307	Hunt's Reservoir	32	32	50	88	322	65	0	2	2	5	16
0308	Dog Lake	2	0	0	NC	0	0	0	NC	0	0	4
0309	Forshea Res.	36	45	44	NC	68	70	35	3	0	0	0
0310	Flossie Lake	36	14	14	4	38	21	0	3	2	0	0
0311	Hare Lake-Rock Reservoir	26	21	12	18	3	0	0	2	1	1	2
0312	The Tanks/Cedar Pk.Dr.	0	6	17	9	26	13	14	0	0	0	15
0313	Mud Lake	-	-	-	NC	12	0	0	0	0	4	2
0314	Smooth Knoll	-	-	-	NC	12	4	0	0	0	0	0
0315	Sage Hen Draw	-	-	-	NC	8	2	5	0	0		0
0316	Big Hollow-Flat Top	28	31	86	86	308	78	2	9	15	74	84
0317	Terza Flat	79	124	117	NC	77	9	0	3	14	2	5
0318	Moroni Pk.Res.	0	0	0	NC	NC	0	0	0	0	0	0
0319	Horse Valley	40	95	37	28	26	40	81	85	47	90	143
0320	LOA-BICKNELL-LYMAN	80	37	42	11	14	15	3	14	8	54	34
0321	Greenwich-Koosharem	6	20	5	81	66	0	46	4	21	7	62
0322	Tidwell Slope	11	44	40	29	39	0	0	7	5	2	2
0323	Gooseberry	-	-	-	11	NC	10	208	223	242	NC	7
0324	So.Koosharem	-	-	-	NC	NC	0	3	91	40	50	54
0325	Burrville	-	5	10	NC	0	0	0	0	NC	0	0
0326	Capitol Reef N.P.	0	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
0327	Hare Valley	-	-	-	-	-	-	-	-	-	-	4
0328	Forsyth Reservoir	-	-	-	-	-	-	-	-	-	-	2
0329	Giles Hollow	-	-	-	-	-	-	-	-	-	-	0
0330	Deer Peak	-	-	-	-	-	NC	NC	NC	NC	NC	NC
OTHER	OTHER											
OTHER	OTHER					6						
TOTAL	AWAPA PLATEAU RECOVERY ARE	397	501	502	413	1119	357	429	464	402	303	460

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)