

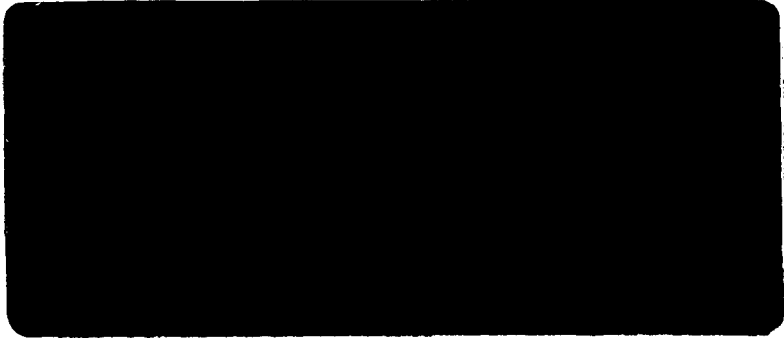
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Prairie Dog Vegetation Monitoring Trans  
OSMP Studies 4431

Study



ESCO Associates, Inc.



ESCO  
POD  
1998

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# **Report of Findings**

Prairie Dog Vegetation  
Monitoring Transects - 1998  
City of Boulder Open Space  
Boulder, CO

Prepared for;

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## INTRODUCTION

Studies reported here were undertaken in June 1998 with the intent of documenting effects of prairie dog occupation on plant communities at various locations throughout the City of Boulder Open Space properties. Objectives were to conduct the second year's data collection on permanent sample locations.

## METHODS

### *Sample Location*

In 1997, permanent samples were located subjectively with the goal of establishing pairs of samples within individual plant communities. Within each selected plant community, one sample was located in a prairie dog occupied area and the other in an adjacent area as similar as possible except unoccupied by prairie dogs. Sample locations are shown on Maps 1 through 3. Odd-numbered samples are those located inside prairie dog-occupied areas; even numbered samples are those located in a paired unoccupied site. At each sample location, the end points of the sample transect were marked with a rebar stake driven flush with the ground (for subsequent use with a metal detector) and a 1/2 inch round brown fiberglass post.

A total of 47 samples were taken at 24 sites. No area was located that adequately served as a pair for Sample 11. Therefore, there is no Sample 12. Odd-numbered samples were from areas that were occupied by prairie dogs and even-numbered samples were from the unoccupied areas.

### *Cover*

Cover data were collected using a point intercept method in which data were recorded as interceptions of a point with plant species, litter, standing dead plant material, soil or rock. Plant material produced during 1998 and still standing was tallied by species. Litter was considered to be any organic material that had fallen, or begun to fall to the soil surface. Standing dead was any dead plant material that was produced in previous years but which was still standing and had not lodged or broken off to become litter. Inorganic materials greater than 1 cm in diameter were considered rock. The cover sampling points were optically projected using a Cover-Point Optical Point Projection Device. One hundred points were collected at each transect and distributed evenly along the transect with a pair of points collected at each meter mark. The pair of points were sampled on opposite sides of the transect, 0.5 m from the transect.

The point intercept method of cover assessment was chosen because it provides superior objectivity and repeatability. This method collects more information about abundant species than about rare species. This inherent tendency has been countered through use of a total vascular species inventory along the sample transect (see Frequency). In addition, frequency plot data have been collected to provide further details of the abundance of less common species.

### **Sampling Date**

Sampling of the prairie dog study areas reported here was conducted in June 1998.

### **Photographic Documentation**

A photograph oriented along each transect from the origin was taken at each site. These photographs are attached to this report.

## **RESULTS**

Results reported here are from 1998 observations. 1997 results were previously reported (ESCO 1998). Results from all 1998 data collection have been tabulated and are presented in Table 1. Additionally, data from prairie dog-occupied and prairie dog-unoccupied areas have been separated into Tables 2 and 3, respectively. Table 4 is a species presence table showing the species present at each sample site. Figure 1 depicts total vegetation cover along the sample transects. Figure 2 portrays relative vegetation cover by lifeform on the study transects. Figure 3 similarly illustrates species density by lifeform.

Summarized results are as follows:

	-----Percent Total Cover-----					Species Density
	Total Veg.	Standing Dead	Litter	Bare soil	Rock	
<b>Prairie dog occupied</b>	<b>58.2</b>	<b>1.0</b>	<b>20.7</b>	<b>18.9</b>	<b>1.2</b>	<b>24.8</b>
<b>Prairie dog unoccupied</b>	<b>48.6</b>	<b>1.7</b>	<b>40.7</b>	<b>7.6</b>	<b>1.1</b>	<b>30.3</b>
<b>All sites combined</b>	<b>53.6</b>	<b>1.4</b>	<b>30.5</b>	<b>13.4</b>	<b>1.2</b>	<b>27.5</b>

\*Number of species/100 sq. m.

## DISCUSSION

Evaluation of these data, collected as they were for the purpose of gaining insight into the effects of prairie dogs on plant communities, naturally compares occupied sites to unoccupied sites. In the first section below, the 1998 data are examined by themselves. And, rather than work at the comparison of individual transect pairs, which would also be useful, the first level of discussion for the data resulting from this project addresses the average of the 24 pairs. Although from differing vegetation types, they are similar at the level of being sites that originally supported a grassland ecosystem that has been modified to varying degrees by human use. At the level of the individual site, the selection of "occupied" and "unoccupied" locations to place the monitoring transects can quickly suggest a "pristine" versus disturbed comparison that is not appropriate. In virtually all cases, the entire area has been disturbed significantly by grazing, previous prairie dog occupation, cultivation, or other causes. The areas in which the "occupied" transects have been placed are merely representative of the effects of a recent disturbance by prairie dogs.

In any strict scientific interpretation, no cause or effect is indicated by examination of the pairs of transects such as could result from a carefully controlled laboratory experiment. But these are the shortcomings, if you want to call them that, that have long been attributed to observations from field biology and it is the opinion of the author that such concerns stray beyond the limits of prudent scientific care and into the realm of paralyzing philosophical angst.

Despite the shortcomings of imperfectly controlled variables, the data averaged over 24 samples, repeated in two years, show patterns for lifeforms and even individual species that are interesting and suggestive.

Observations discussed below are based on 1998 data present in the tables attached to this report. Where 1997 data are referenced, please consult ESCO (1998).

### *Cover by Annual and Biennial Plants*

Comparison of Table 2 (data from prairie dog-occupied sites) and Table 3 (data from sites not occupied by prairie dogs) reveals that, in 1998, occupied sites had an average of approximately 3x as much cover by native annual and biennial forbs and nearly twice as much cover by introduced annual and biennial forbs. This is not surprising intuitively since the foraging of prairie

dogs tends to leave more open soil subject to occupation by opportunistic weedy plant species (note in the table above that occupied sites averaged 18.9 percent bare soil and unoccupied sites averaged 7.6 percent bare soil cover). Native annual and biennial forbs in 1997 were, like 1998 about 3x more abundant in occupied sites than in unoccupied sites. Introduced annual/biennial forbs were only slightly more abundant in occupied areas in 1997 because that particular year (or more probably the fall of 1996) was particularly favorable to alyssum, and diffuse knapweed (Acosta diffusa) was more abundant. 1998 observations of reduced knapweed presence probably reflected the effects of efforts to kill this problem weed.

The only native annual and biennial forb species showing apparent increase in response to prairie dog presence was Indian plantain (Plantago patagonica). No introduced annual/biennial species showed consistent tendency to increase with the presence of prairie dogs. In 1998, during a favorable year for annual/biennial growth, alyssum (Alyssum alyssoides and A. minus), filaree (Erodium cicutarium), stickseed (Lappula redowskii), yellow sweetclover (Melilotus officinalis), Jim Hill mustard (Sisymbrium altissimum), and salsify (Tragopogon dubius) all showed an increase in occupied areas.

Some introduced annual/biennial forbs were absent from occupied areas during 1998 suggesting their strong attraction to prairie dog predation. These included littlepod falseflax (Camelina microcarpa), tansymustard (Descurainia spp.), field pepperweed (Neolepia campestre), teasel (Dipsacus sylvestris), and pennycress (Thlaspi arvense). Certain other species seemed to have been partially eliminated on occupied sites as evidenced by reduced frequency values (for example, false salsify (Podospermum laciniatum)). Some other species were apparently eliminated from some occupied sites, while they apparently found a few other occupied sites much to their liking and actually increased in average cover overall. Such species were prickly lettuce (Lactuca serriola), and, in 1998, denseflower pepperweed (Lepidium densiflorum). A species of particular interest, diffuse knapweed, has exhibited slightly less cover and frequency in prairie dog-occupied areas in both 1997 and 1998.

Somewhat surprising, however, is the observation that while the cover by native annual grasses was low in unoccupied areas (0.3 percent, 1998; 0.2 percent, 1997), it was essentially unmeasurable (0.0 percent) in the occupied areas. This suggests that the prairie dogs are selectively removing these native annual "grains." Introduced annual grasses (predominately cheatgrass, Anisantha tectorum) were slightly more abundant in occupied than unoccupied

areas in both years, but not by the relatively large proportions shown in annual and biennial forbs.

#### *Cover by Perennial Forbs*

In 1998, native perennial forbs averaged 8.5 percent cover in occupied sites and 6.3 percent cover in unoccupied sites. In 1997, this slight difference was reversed, with native perennial forbs cover in occupied areas 7.6 percent, and 8.0 percent in unoccupied areas. The major native perennial forbs of the unoccupied sites were western ragweed (*Ambrosia psilostachya*), hairy goldenaster (*Heterotheca villosa*), littleleaf scurfpea (*Psoraleidum tenuifolia*), and white prairieaster (*Virgulus falcatus*). Of these, western ragweed and littleleaf scurfpea declined slightly in cover and frequency in occupied areas. Hairy goldenaster increased in cover but declined in frequency suggesting that at some sites prairie dog predation exceeded regenerative capacity (perhaps as limited by soil or other site factors) while at other sites, the reduced competition allowed regeneration in excess of prairie dog removal. White prairieaster was virtually unaffected by the presence of prairie dogs. Major native perennial forbs that increased in the occupied sites from minor status in unoccupied sites included fringed sagewort (*Artemisia frigida*) and cowboys' delight (*Sphaeralcea coccinea*). Western spiderwort (*Tradescantia occidentalis*) had triple the frequency compared to unoccupied sites.

Native perennial forbs that were minor components in unoccupied sites that may have declined with the presence of prairie dogs included pasture sagewort (*Artemisia ludoviciana*), scarlet gaura (*Gaura coccinea*), spike gilia in 1998 (*Ipomopsis spicata*), bladderpod (*Lesquerella montana*), yellow gumbolily (*Oenothera howardii*), false tarragon (*Oligosporus dracunculus*), locoweed (*Oxytropis x sericea*), prairie coneflower (*Ratibida columnifera*), and Colorado greenthread (*Thelesperma megapotamicum*). Minor native perennial forbs that may show a tendency to increase in occupied areas include field milkvetch (*Astragalus agrestis*), biscuitroot (*Lomatium orientale*), and curly dock (*Rumex crispus*). Native perennial forbs species that occurred only in the occupied areas include silvery lupine (*Lupinus argenteus*), Platte groundsel (*Packera plattensis*), and fogfruit (*Phyla cuneifolia*).

Introduced perennial forbs totaled 4.2 percent cover in unoccupied areas (4.4 percent in 1997) and 16.8 percent cover in occupied sites (13.3 percent in 1997). The large difference is mostly attributable to the response of field bindweed (*Convolvulus arvensis*) which averaged 3.9

percent cover and 70 percent frequency in unoccupied areas in 1998 and 14.1 percent cover and 83 percent frequency in occupied areas in 1998.

#### *Cover by Perennial Grasses and Grasslikes*

Native perennial cool season grasses (and grasslikes) in occupied areas averaged 8.1 percent cover (9.3 percent in 1997) and 15.3 percent cover in unoccupied areas (17.1 percent in 1997). Western wheatgrass (Pascopyrum smithii) in occupied areas averaged 5.0 percent cover (6.2 percent in 1997), while in unoccupied areas, it comprised an average of 5.4 percent cover (6.8 percent in 1997), thus being actually slightly more abundant in areas with prairie dogs than in areas without them. All other native perennial cool season grasses were distinctly less abundant in occupied areas than in unoccupied areas. It would appear that prairie dogs are strongly attracted to cool season grasses and grasslikes as a food source.

For introduced perennial cool season grasses, a similar apparent general high palatability to prairie dogs was evident with the exception of smooth brome (Bromopsis inermis) which like the native western wheatgrass, was actually more abundant in occupied areas. Total introduced perennial cool season grass cover in occupied areas in 1998 was 1.8 percent compared to 3.5 percent in unoccupied areas. In 1997, it was 1.0 percent in occupied areas compared to 3.0 percent in unoccupied areas.

For native perennial warm season grasses was much less dramatic, with occupied areas averaging 4.8 percent cover (4.0 percent in 1997) and unoccupied areas averaging 6.6 percent cover (6.0 percent in 1997). The difference between the two in 1998 was attributable to small reductions in most of the species, most prominently big bluestem (Andropogon gerardii), threeawn (Aristida purpurea), buffalograss (Buchloe dactyloides), and blue grama (Chondrosium gracile).

#### *Cover by Plants of Other Lifeforms*

Shrubs and subshrubs seem to have been relatively little affected by the presence or absence of prairie dogs as judged from 1997 and 1998 data. Lichens, bryophytes, and fungi were all present at levels too low to believe that any slight differences were attributable to prairie dogs. Cacti (succulents), though of nearly immeasurable abundance as far as cover in both areas,



were much less frequently encountered in occupied areas suggesting that prairie dog predation was reducing their presence, at least somewhat.

#### *Variability of Individual Transect Pairs*

Lest the above-discussed trends in the averages over 24 transects be taken to be iron-clad predictive "models" for the effects of prairie dog occupation on grassland plant communities, it must be noted that certain individual pairs of transects can be found in which most if not all of the above trends are reversed. For example, the trend in the average for the abundance of introduced annual/ biennial forbs of occupied areas to greatly exceed that of unoccupied areas is the opposite of the real situation in the transect 37/38 pair. There, annual/biennial cover of unoccupied sites greatly exceeds that of occupied sites, as does cover by native perennial forbs. What makes this site different is that, for unknown reasons, the prairie dog use of the occupied area is particularly heavy, as evidenced by the fact that bare soil covered 62 percent of the surface (the overall average cover by bare soil in occupied areas was about 19 percent). In cases like this of especially heavy foraging, the opportunities for annual/biennial species present at most sites, are more than negated by the intensive grazing, apparently by the prairie dogs themselves.

#### *Total Vegetation Cover*

Although total vegetation cover (see in-text table at beginning of this section) of occupied areas averaged more than that of unoccupied areas, the variability was sufficient that the two values are not significantly different at the 90 percent confidence level (using a two-tailed t-test). Note in Figure 1 the prevalence of cases where total vegetation cover was less in occupied areas than in unoccupied areas. In fact, 8 of 23 pairs had less total (live) vegetation cover in the occupied areas than in the unoccupied areas. The effects of prairie dogs on ground cover is perhaps most clear in the percent cover by litter. Fallen dead plant materials do not linger in occupied areas and are (presumably) eaten. Note that average litter cover in occupied areas was half that of unoccupied areas in 1998. This accounts for much of the greater general extent of bare soil in occupied areas, and is apparently a greater effect than the lack of live vegetation cover as a result of prairie dog foraging.

### *Relative Cover by Lifeform*

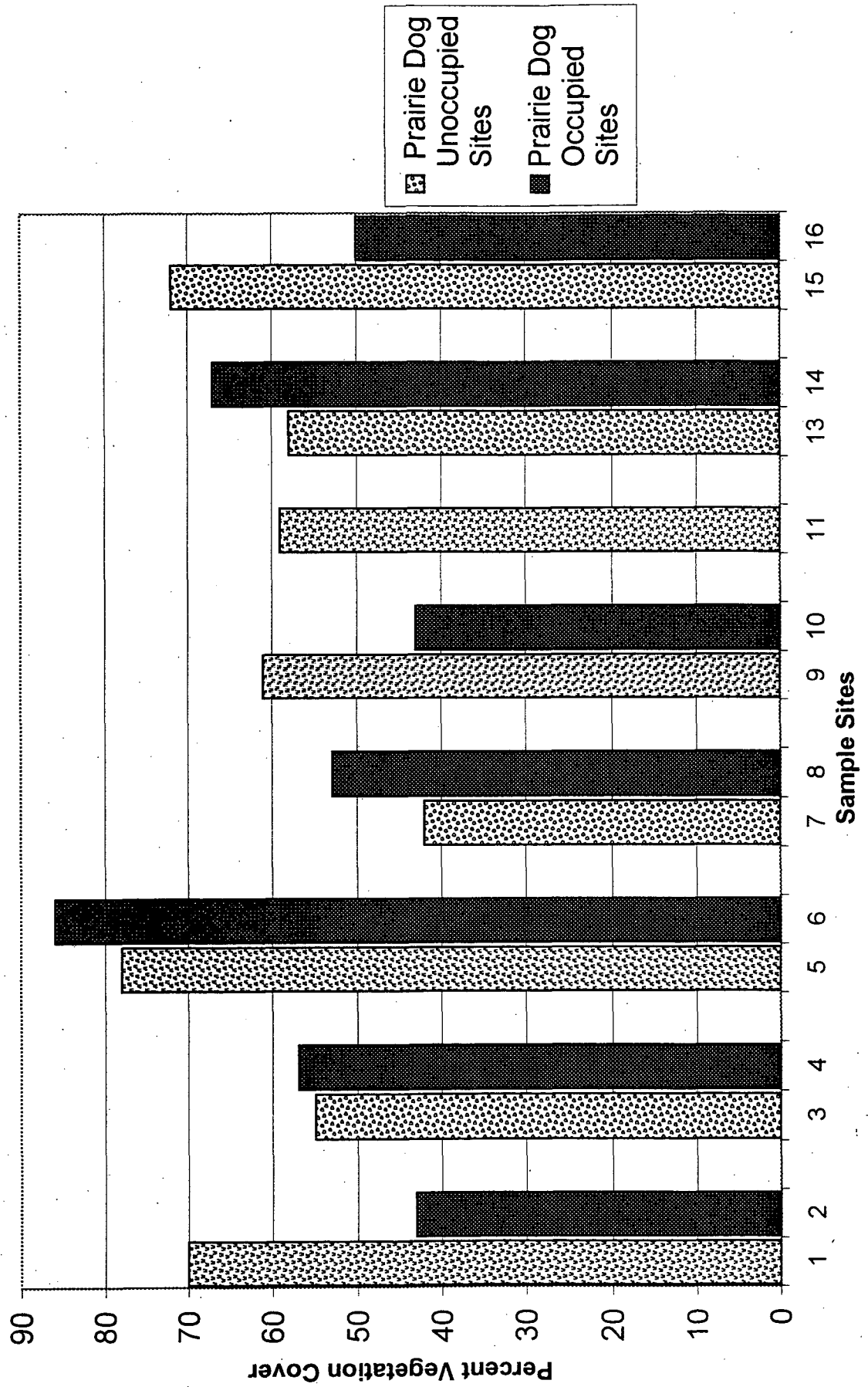
As can be seen in Figure 2, although there is a general pattern for occupied areas to have a greater portion of total vegetation cover (i.e. greater relative vegetation cover) in introduced annual/biennial forbs or introduced perennial forbs (mostly Convolvulus arvensis), variation is great. For example, in a few locations, the relative abundance of native perennial cool season grasses is greater in the prairie dog-occupied area than in the unoccupied area (see sample pairs 33/34, 37/38, and 43/44), in contradiction of one of the seemingly stronger general trends of the data.

### *Species Density by Lifeform*

From the graphical depictions present in Figure 3, it can be seen that species density compared between occupied and unoccupied also varies considerably. Although the overall average for species density of occupied areas was 82 percent of that in unoccupied areas, there were many pairs (7 of 23) in which the occupied sites had higher species density. Most of the sites on which the occupied transect data are distinctly higher for species density were had abnormally low values for the unoccupied sites (i.e. fewer than 15 species per 100 sq.m.).

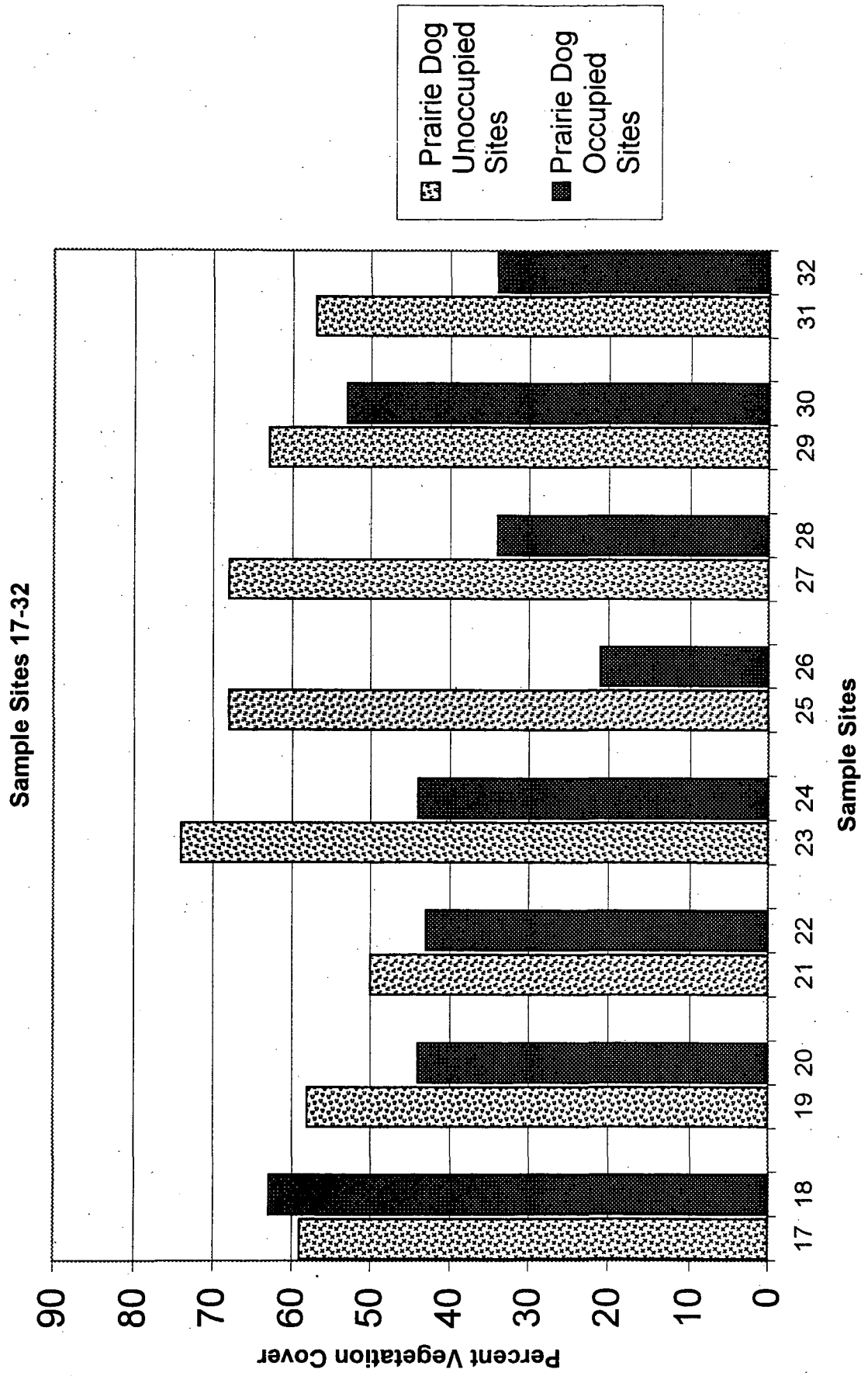
Figure 1. Total Vegetation Cover - Prairie Dog Study, City of Boulder Open Space, CO - 1998

Sample Sites 1-16



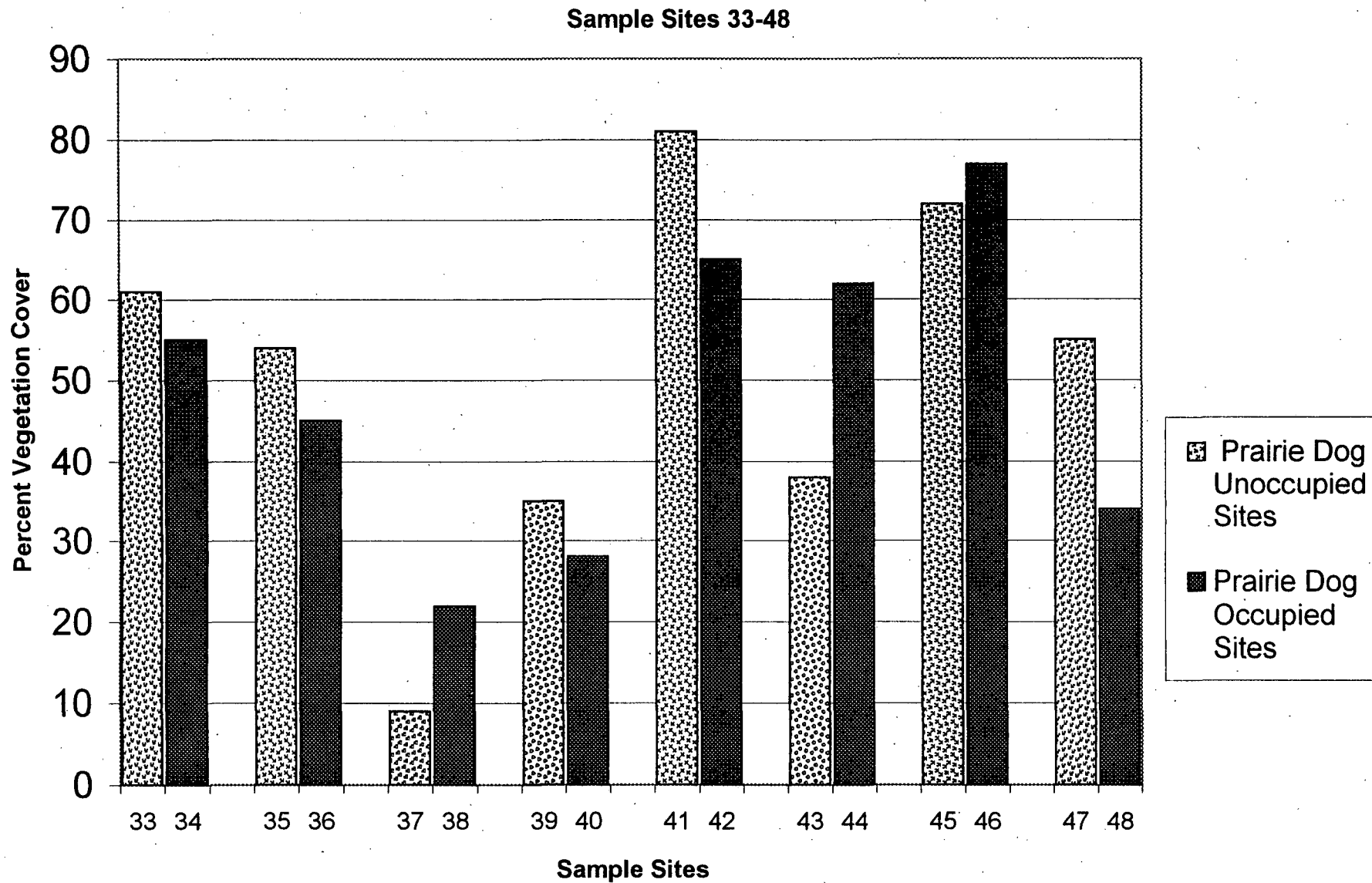
Odd numbered samples in prairie dog-occupied areas; Even numbered samples in unoccupied areas.

Figure 1. Total Vegetation Cover - Prairie Dog Study, City of Boulder Open Space, CO - 1998



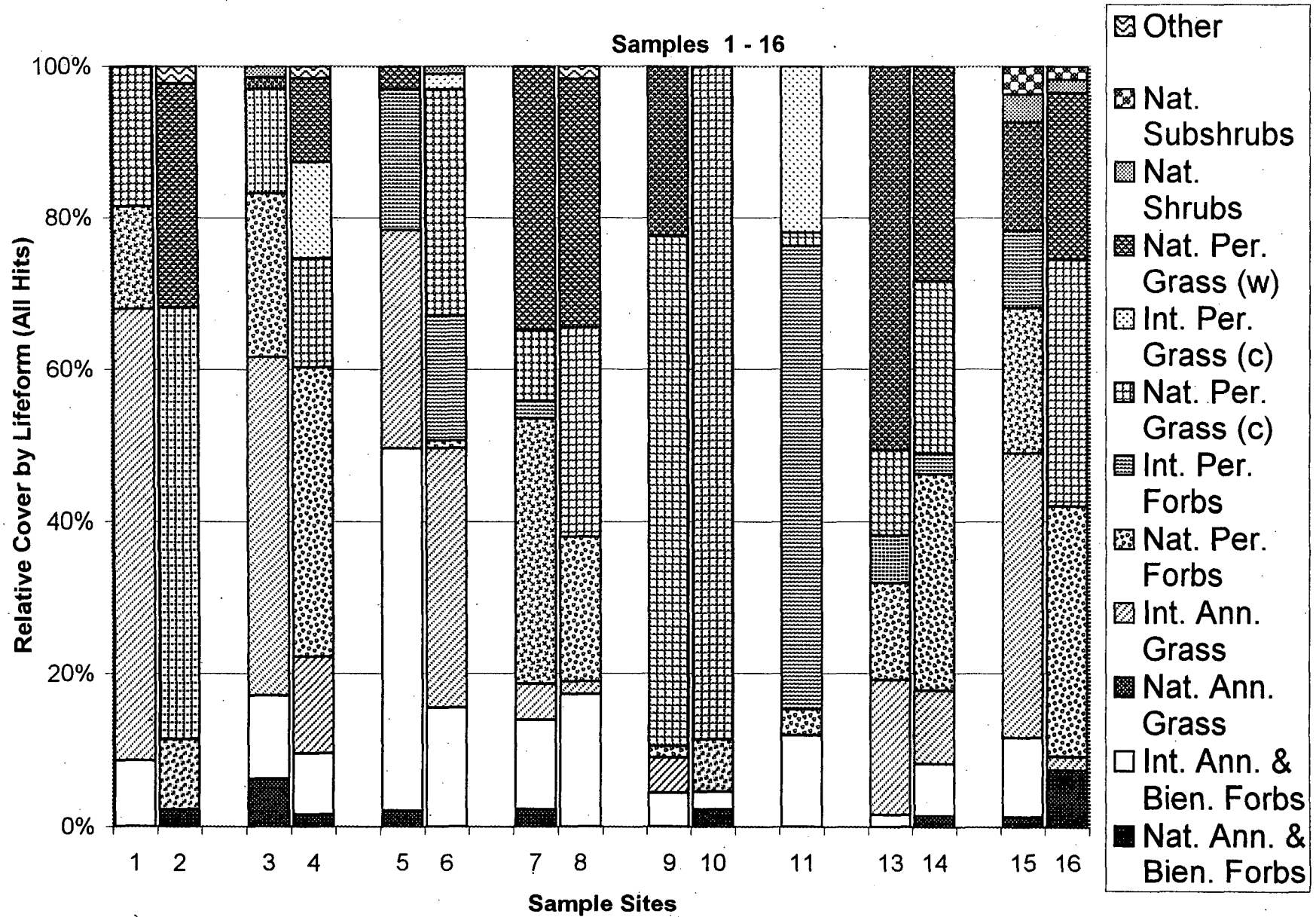
Odd numbered samples in prairie dog-occupied areas; Even numbered samples in unoccupied areas.

Figure 1. Total Vegetation Cover - Prairie Dog Study, City of Boulder Open Space, CO - 1998



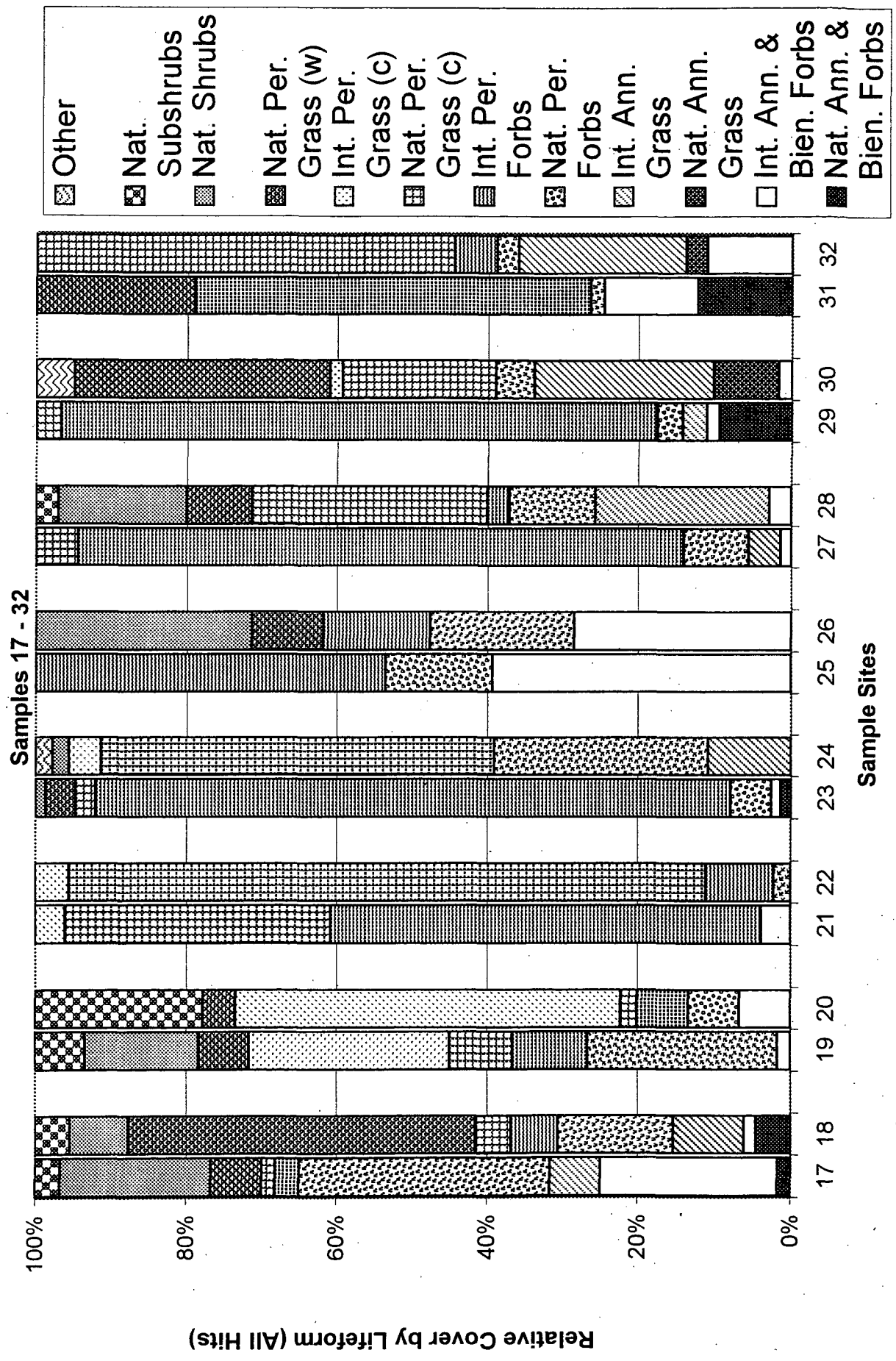
Odd numbered samples in prairie dog-occupied areas; Even numbered samples in unoccupied areas.

Figure 2. Relative Vegetation Cover by Lifeform - Prairie Dog Study, City of Boulder Open Space, CO - 1998



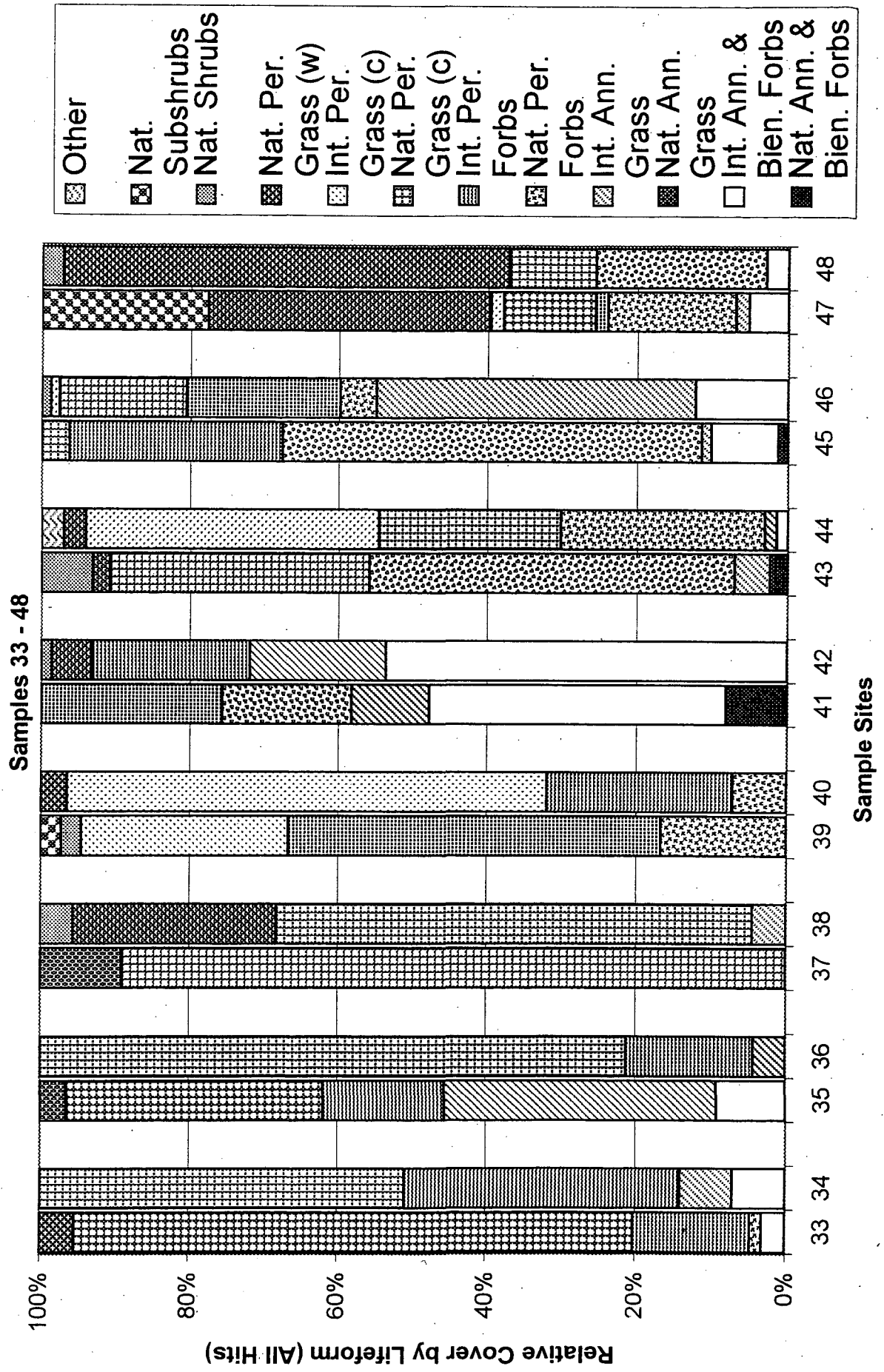
Odd numbered samples in prairie dog-occupied areas; Even numbered samples in unoccupied areas.

Figure 2. Relative Vegetation Cover by Lifeform - Prairie Dog Study, City of Boulder Open Space, CO - 1998



Odd numbered samples in prairie dog-occupied areas; Even numbered samples in unoccupied areas.

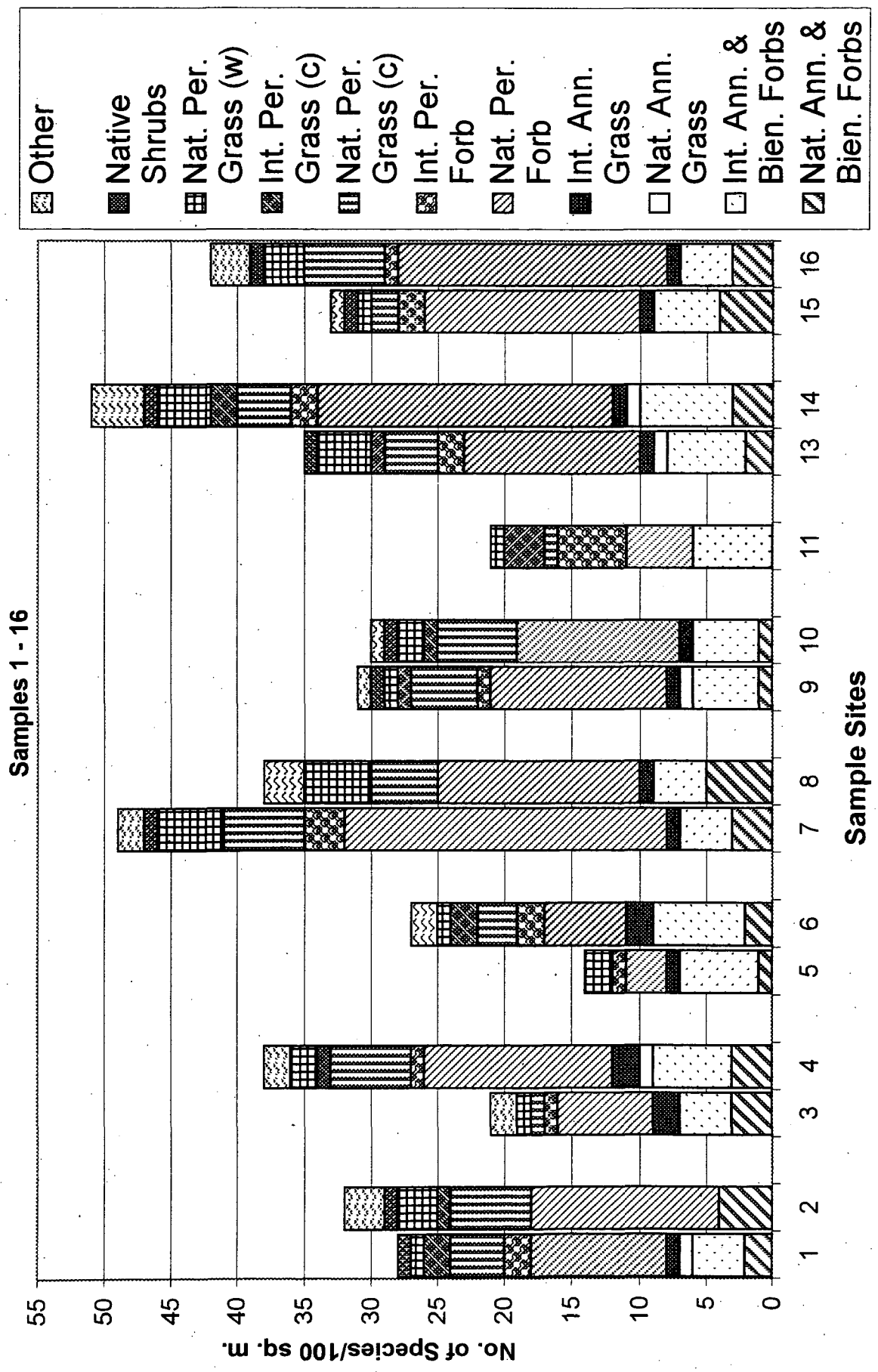
Figure 2. Relative Vegetation Cover by Lifeform - Prairie Dog Study, City of Boulder Open Space, CO - 1998



Odd numbered samples in prairie dog-occupied areas; Even numbered samples in unoccupied areas.



Figure 3. Species Density by Lifeform - Prairie Dog Study, City of Boulder Open Space, CO - 1998



Odd numbered samples in prairie dog-occupied areas; Even numbered samples in unoccupied areas.

Figure 3. Species Density by Lifeform - Prairie Dog Study, City of Boulder Open Space, CO - 1998

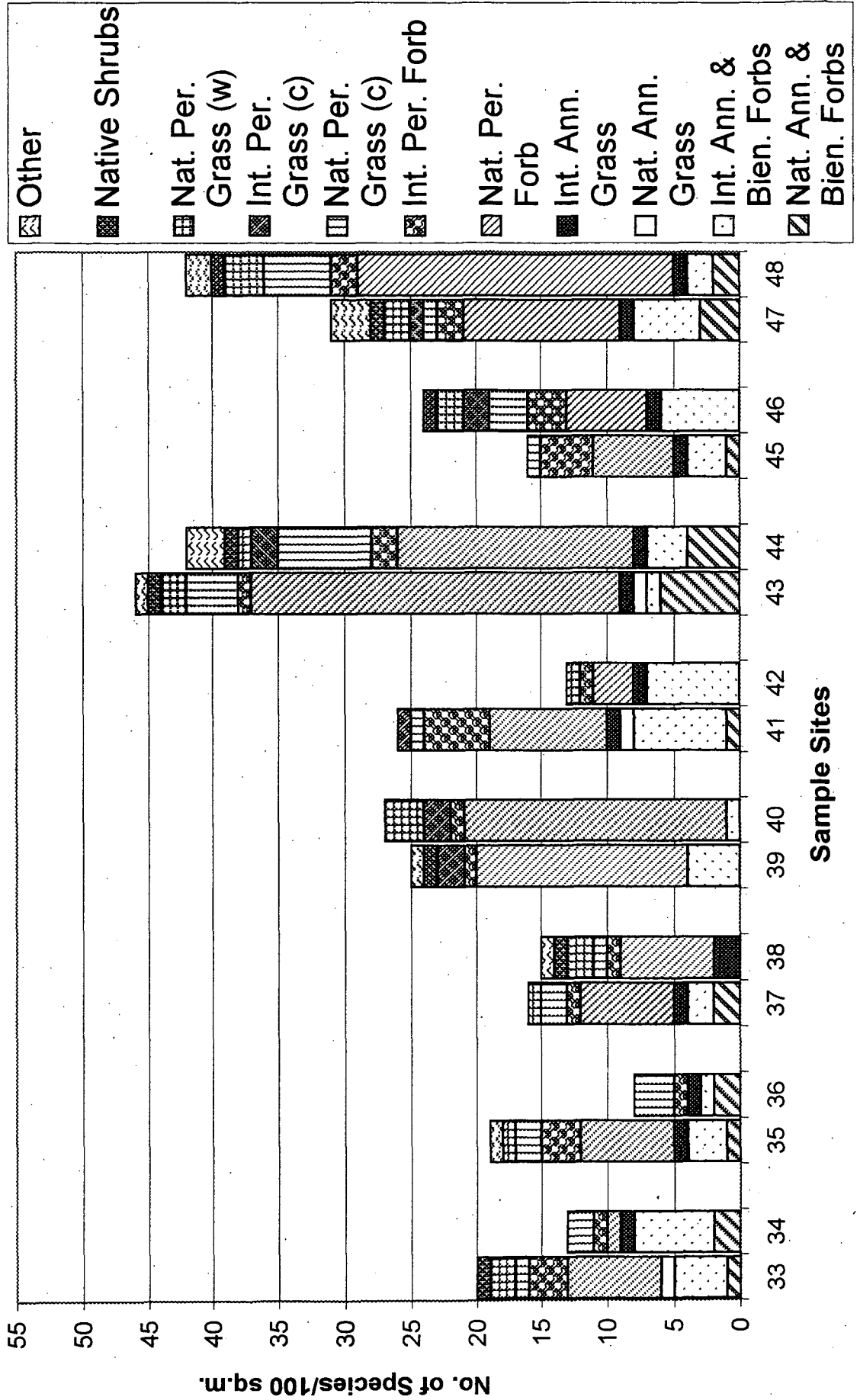
Samples 17 - 32



Odd numbered samples in prairie dog-occupied areas; Even numbered samples in unoccupied areas.

Figure 3. Species Density by Lifeform - Prairie Dog Study, City of Boulder Open Space, CO - 1998

Samples 33 - 48



Odd numbered samples in prairie dog-occupied areas; Even numbered samples in unoccupied areas.

Table 1. Cover Data - All Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	AVERAGE COVER (%)	FREQUENCY (%)	RELATIVE VEGETATION COVER (%)	AVERAGE COVER-ALL (%)	RELATIVE VEGETATION COVER-ALL (%)
<b>NATIVE ANNUAL &amp; BIENNIAL FORBS</b>					
<i>Androsace septentrionalis</i>	0.00	4.26	0.00	0.00	0.00
<i>Chamaesyce glyptosperma</i>	0.00	4.26	0.00	0.00	0.00
<i>Chenopodium</i> spp.	0.00	2.13	0.00	0.00	0.00
<i>Cirsium undulatum</i>	0.15	34.04	0.28	0.15	0.26
<i>Collinsia parviflora</i>	0.00	2.13	0.00	0.00	0.00
<i>Collomia linearis</i>	0.02	2.13	0.04	0.02	0.04
<i>Descurainia incana</i>	0.00	2.13	0.00	0.00	0.00
<i>Draba</i> spp.	0.00	2.13	0.00	0.00	0.00
<i>Dyssodia papposa</i>	0.00	2.13	0.00	0.00	0.00
<i>Erigeron divergens</i>	0.21	29.79	0.40	0.26	0.45
<i>Erysimum asperum</i>	0.00	12.77	0.00	0.00	0.00
<i>Evax prolifera</i>	0.00	2.13	0.00	0.00	0.00
<i>Gaura parviflora</i>	0.00	4.26	0.00	0.00	0.00
<i>Grindelia squarrosa</i>	0.04	21.28	0.08	0.04	0.07
<i>Oligosporus pacificus</i>	0.00	2.13	0.00	0.00	0.00
<i>Oreocarya virgata</i>	0.00	6.38	0.00	0.00	0.00
<i>Plantago patagonica</i>	0.43	25.53	0.79	0.43	0.74
<i>Pterogonum alatum</i>	0.00	4.26	0.00	0.00	0.00
<i>Salvia aethiopsis</i>	0.00	4.26	0.00	0.00	0.00
<i>Silene antirrhina</i>	0.02	12.77	0.04	0.02	0.04
<i>Tithymalus spathulatus</i>	0.00	2.13	0.00	0.00	0.00
<b>TOTAL NATIVE ANN. &amp; BIEN. FORBS</b>	<b>0.9</b>	<b>78.7</b>	<b>1.6</b>	<b>0.9</b>	<b>1.6</b>
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>					
<i>Acosta diffusa</i>	0.28	29.79	0.52	0.28	0.48
<i>Alyssum alyssoides</i>	0.15	25.53	0.28	0.15	0.26
<i>Alyssum minus</i>	0.89	61.70	1.67	1.06	1.86
<i>Camelina microcarpa</i>	0.02	12.77	0.04	0.02	0.04
<i>Carduus nutans</i> ssp. <i>macrolepis</i>	0.09	23.40	0.16	0.09	0.15
<i>Chenopodium album</i>	0.00	4.26	0.00	0.00	0.00
<i>Cirsium vulgare</i>	0.00	4.26	0.00	0.00	0.00
<i>Cynoglossum officinale</i>	0.00	4.26	0.00	0.00	0.00
<i>Descurainia</i> spp.	0.00	2.13	0.00	0.00	0.00
<i>Dianthus armeria</i>	0.00	2.13	0.00	0.00	0.00
<i>Dipsacus sylvestris</i>	0.02	2.13	0.04	0.02	0.04
<i>Erodium cicutarium</i>	1.43	34.04	2.66	1.57	2.75
<i>Lactuca serriola</i>	0.64	21.28	1.19	0.70	1.23
<i>Lappula redowskii</i>	0.02	8.51	0.04	0.02	0.04
<i>Lepidium densiflorum</i>	0.04	19.15	0.08	0.06	0.11
<i>Medicago lupulina</i>	0.06	21.28	0.12	0.06	0.11
<i>Mellilotus officinalis</i>	0.81	14.89	1.51	0.81	1.41
<i>Neolepia campestre</i>	0.02	4.26	0.04	0.02	0.04
<i>Plantago lanceolata</i>	0.13	8.51	0.24	0.15	0.26
<i>Pocilla biloba</i>	0.02	2.13	0.04	0.02	0.04
<i>Podospermum laciniatum</i>	0.09	23.40	0.16	0.09	0.15
<i>Polygonum ramosissimum</i>	0.00	2.13	0.00	0.00	0.00
<i>Sisymbrium altissimum</i>	0.02	12.77	0.04	0.02	0.04
<i>Thlaspi arvense</i>	0.00	2.13	0.00	0.00	0.00
<i>Tragopogon dubius</i> ssp. <i>major</i>	0.17	48.94	0.32	0.21	0.37
<i>Verbascum blattaria</i>	0.04	4.26	0.08	0.04	0.07
<i>Verbascum thapsus</i>	0.74	21.28	1.39	0.89	1.56
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	<b>5.7</b>	<b>95.7</b>	<b>10.6</b>	<b>6.3</b>	<b>11.0</b>
<b>NATIVE ANNUAL GRASSES</b>					
<i>Critesion pusillum</i>	0.11	8.51	0.20	0.11	0.19
<i>Schedonnardus paniculatus</i>	0.02	8.51	0.04	0.02	0.04
<i>Vulpia octoflora</i>	0.02	19.15	0.04	0.02	0.04
<b>TOTAL NATIVE ANN. GRASSES</b>	<b>0.1</b>	<b>34.0</b>	<b>0.3</b>	<b>0.1</b>	<b>0.3</b>

Table 1. Cover Data - All Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	AVERAGE COVER (%)	FREQUENCY (%)	RELATIVE VEGETATION COVER (%)	AVERAGE COVER-ALL (%)	RELATIVE VEGETATION COVER-ALL (%)
<b>INTRODUCED ANNUAL GRASSES</b>					
<i>Anisantha tectorum</i>	6.83	72.34	12.74	7.09	12.39
<i>Bromus japonicus</i>	0.06	10.64	0.12	0.06	0.11
<i>Cylindropyrum cylindricum</i>	0.00	2.13	0.00	0.00	0.00
<i>Hordeum vulgare</i>	0.00	2.13	0.00	0.00	0.00
<i>Poa bulbosa</i>	0.06	2.13	0.12	0.06	0.11
<b>TOTAL INTRO. ANN. GRASSES</b>	<b>7.0</b>	<b>78.7</b>	<b>13.0</b>	<b>7.2</b>	<b>12.6</b>
<b>NATIVE PERENNIAL FORBS</b>					
<i>Acetosella vulgaris</i>	0.02	4.26	0.04	0.02	0.04
<i>Achillea lanulosa</i>	0.04	8.51	0.08	0.06	0.11
<i>Adenolinum lewisii</i>	0.23	21.28	0.44	0.23	0.41
<i>Agoseris glauca</i>	0.00	4.26	0.00	0.00	0.00
<i>Allium textile</i>	0.00	14.89	0.00	0.00	0.00
<i>Ambrosia psilostachya</i> var. <i>coronopifolia</i>	0.96	48.94	1.79	1.06	1.86
<i>Antennaria corymbosa</i>	0.00	2.13	0.00	0.00	0.00
<i>Antennaria rosea</i>	0.00	4.26	0.00	0.00	0.00
<i>Antennaria</i> spp.	0.04	2.13	0.08	0.04	0.07
<i>Aphyllon fasciculatum</i>	0.00	6.38	0.00	0.00	0.00
<i>Argemone polyanthemis</i>	0.00	8.51	0.00	0.00	0.00
<i>Arnica fulgens</i>	0.11	8.51	0.20	0.11	0.19
<i>Artemisia frigida</i>	0.40	51.06	0.75	0.49	0.86
<i>Artemisia ludoviciana</i>	0.04	25.53	0.08	0.04	0.07
<i>Asclepias pumila</i>	0.00	2.13	0.00	0.00	0.00
<i>Asclepias viridiflora</i>	0.00	8.51	0.00	0.00	0.00
<i>Aster laevis</i> var. <i>geyeri</i>	0.00	2.13	0.00	0.00	0.00
<i>Aster porteri</i>	0.02	19.15	0.04	0.02	0.04
<i>Astragalus agrestis</i>	0.06	17.02	0.12	0.09	0.15
<i>Astragalus crassicaarpus</i>	0.04	2.13	0.08	0.04	0.07
<i>Astragalus drummondii</i>	0.11	6.38	0.20	0.11	0.19
<i>Astragalus miser</i> var. <i>oblongifolius</i>	0.02	4.26	0.04	0.02	0.04
<i>Astragalus shortianus</i>	0.02	10.64	0.04	0.02	0.04
<i>Astragalus tridactylicus</i>	0.00	4.26	0.00	0.00	0.00
<i>Brickellia eupatorioides</i>	0.00	2.13	0.00	0.00	0.00
<i>Calylophus serrulatus</i>	0.00	10.64	0.00	0.00	0.00
<i>Castilleja sessiliflora</i>	0.00	6.38	0.00	0.00	0.00
<i>Comandra umbellata</i> ssp. <i>pallida</i>	0.04	12.77	0.08	0.04	0.07
<i>Cucurbita foetidissima</i>	0.00	2.13	0.00	0.00	0.00
<i>Cymopterus montanus</i>	0.02	10.64	0.04	0.04	0.07
<i>Dalea candida</i> var. <i>oligophylla</i>	0.02	8.51	0.04	0.02	0.04
<i>Dalea purpurea</i>	0.00	8.51	0.00	0.00	0.00
<i>Dryocallis fissa</i>	0.00	2.13	0.00	0.00	0.00
<i>Epilobium ciliatum</i>	0.17	4.26	0.32	0.17	0.30
<i>Eremogone fendleri</i>	0.02	4.26	0.04	0.02	0.04
<i>Erigeron canus</i>	0.00	2.13	0.00	0.00	0.00
<i>Erigeron flagellaris</i>	0.00	6.38	0.00	0.00	0.00
<i>Erigeron pumilus</i>	0.00	2.13	0.00	0.00	0.00
<i>Eriogonum lonchophyllum</i>	0.00	6.38	0.00	0.00	0.00
<i>Evolvulus nuttalianus</i>	0.02	2.13	0.04	0.02	0.04
<i>Frasera speciosa</i>	0.00	2.13	0.00	0.00	0.00
<i>Gaillardia aristata</i>	0.00	2.13	0.00	0.00	0.00
<i>Gastrolychnis drummondii</i>	0.00	2.13	0.00	0.00	0.00
<i>Gaura coccinea</i>	0.04	42.55	0.08	0.04	0.07
<i>Glandularia bipinnatifida</i>	0.00	4.26	0.00	0.00	0.00
<i>Helianthella uniflora</i>	0.02	2.13	0.04	0.02	0.04
<i>Helianthus rigidus</i> ssp. <i>subrhomboideus</i>	0.02	6.38	0.04	0.02	0.04
<i>Heterotheca fulcrata</i>	0.06	6.38	0.12	0.06	0.11
<i>Heterotheca villosa</i>	0.64	38.30	1.19	0.66	1.15
<i>Heuchera hallii</i>	0.02	2.13	0.04	0.02	0.04

Table 1. Cover Data - All Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	AVERAGE COVER (%)	FREQUENCY (%)	RELATIVE VEGETATION COVER (%)	AVERAGE COVER-ALL (%)	RELATIVE VEGETATION COVER-ALL (%)
<b>NATIVE PERENNIAL FORBS (concluded)</b>					
<i>Hybanthus verticillatus</i>	0.04	2.13	0.08	0.04	0.07
<i>Hymenopappus filifolius</i> var. <i>polycephalus</i>	0.00	2.13	0.00	0.00	0.00
<i>Ipomopsis spicata</i>	0.00	4.26	0.00	0.00	0.00
<i>Iris missouriensis</i>	0.00	2.13	0.00	0.00	0.00
<i>Iva axillaris</i>	0.00	4.26	0.00	0.00	0.00
<i>Lesquerella montana</i>	0.00	19.15	0.00	0.00	0.00
<i>Leucocrinum montanum</i>	0.13	21.28	0.24	0.15	0.26
<i>Liatris punctata</i>	0.09	29.79	0.16	0.11	0.19
<i>Lithospermum incisum</i>	0.00	10.64	0.00	0.00	0.00
<i>Lomatium orientale</i>	0.02	10.64	0.04	0.02	0.04
<i>Lomatium</i> spp.	0.00	2.13	0.00	0.00	0.00
<i>Lupinus argenteus</i>	0.11	4.26	0.20	0.11	0.19
<i>Lygodesmia juncea</i>	0.00	2.13	0.00	0.00	0.00
<i>Machaeranthera canescens</i>	0.00	2.13	0.00	0.00	0.00
<i>Machaeranthera pinnatifida</i>	0.00	10.64	0.00	0.00	0.00
<i>Mertensia lanceolata</i>	0.00	10.64	0.00	0.00	0.00
<i>Monarda pectinata</i>	0.02	4.26	0.04	0.02	0.04
<i>Musineon divaricatum</i>	0.00	10.64	0.00	0.00	0.00
<i>Nothocalais cuspidata</i>	0.00	6.38	0.00	0.00	0.00
<i>Oenothera howardii</i>	0.00	14.89	0.00	0.00	0.00
<i>Oligoneuron rigidum</i>	0.17	10.64	0.32	0.17	0.30
<i>Oligosporus dracunculus</i> ssp. <i>glaucus</i>	0.06	23.40	0.12	0.06	0.11
<i>Onosmodium molle</i> ssp. <i>occidentale</i>	0.00	6.38	0.00	0.00	0.00
<i>Orobanche ludoviciana</i>	0.00	2.13	0.00	0.00	0.00
<i>Oxalis dillenii</i>	0.00	6.38	0.00	0.00	0.00
<i>Oxybaphus linearis</i>	0.00	2.13	0.00	0.00	0.00
<i>Oxybaphus nyctagineus</i>	0.00	4.26	0.00	0.00	0.00
<i>Oxytropis x sericea</i>	0.09	23.40	0.16	0.11	0.19
<i>Packera plattensis</i>	0.17	4.26	0.32	0.19	0.33
<i>Penstemon linarioides</i> subsp. <i>coloradoensis</i>	0.00	2.13	0.00	0.00	0.00
<i>Penstemon secundiflorus</i>	0.00	19.15	0.00	0.00	0.00
<i>Penstemon strictus</i>	0.02	2.13	0.04	0.02	0.04
<i>Phyla cuneifolia</i>	0.85	4.26	1.59	0.89	1.56
<i>Physalis pumila</i> subsp. <i>hispida</i>	0.00	2.13	0.00	0.00	0.00
<i>Physaria bellii</i>	0.00	2.13	0.00	0.00	0.00
<i>Psilochenia occidentalis</i>	0.02	2.13	0.04	0.02	0.04
<i>Psoralidium tenuiflorum</i>	1.13	70.21	2.10	1.13	1.97
<i>Quincula lobata</i>	0.00	6.38	0.00	0.00	0.00
<i>Ratibida columnifera</i>	0.09	31.91	0.16	0.09	0.15
<i>Rumex crispus</i>	0.13	10.64	0.24	0.13	0.22
<i>Senecio integerrimus</i>	0.00	6.38	0.00	0.00	0.00
<i>Senecio spartioides</i>	0.00	8.51	0.00	0.00	0.00
<i>Silene scouleri</i> ssp. <i>hallii</i>	0.02	2.13	0.04	0.02	0.04
<i>Solanum</i> spp.	0.00	2.13	0.00	0.00	0.00
<i>Solidago missouriensis</i>	0.06	2.13	0.12	0.09	0.15
<i>Sphaeralcea coccinea</i>	0.11	36.17	0.20	0.11	0.19
<i>Thelesperma megapotamicum</i>	0.02	19.15	0.04	0.02	0.04
<i>Tithymalus brachyceras</i>	0.02	19.15	0.04	0.02	0.04
<i>Townsendia exscapa</i>	0.00	2.13	0.00	0.00	0.00
<i>Townsendia hookeri</i>	0.00	2.13	0.00	0.00	0.00
<i>Tradescantia occidentalis</i>	0.00	8.51	0.00	0.00	0.00
<i>Vicia americana</i>	0.00	8.51	0.00	0.00	0.00
<i>Viola nuttallii</i>	0.06	19.15	0.12	0.09	0.15
<i>Virgulus falcatus</i>	0.79	61.70	1.47	0.87	1.53
<b>TOTAL NATIVE PERENNIAL FORBS</b>	<b>7.4</b>	<b>97.9</b>	<b>13.9</b>	<b>8.0</b>	<b>14.0</b>
<b>INTRODUCED PERENNIAL FORBS</b>					
<i>Breea arvensis</i>	0.11	10.64	0.20	0.11	0.19
<i>Cardaria chalepensis</i>	0.23	6.38	0.44	0.23	0.41
<i>Convolvulus arvensis</i>	9.11	76.60	16.98	9.62	16.82
<i>Hypericum perforatum</i>	0.00	8.51	0.00	0.00	0.00

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PLANT SPECIES	AVERAGE COVER (%)	FREQUENCY (%)	RELATIVE VEGETATION COVER (%)	AVERAGE COVER-ALL (%)	RELATIVE VEGETATION COVER-ALL (%)
<b>INTRODUCED PERENNIAL FORBS (Concluded)</b>					
<i>Linaria genistifolia</i> ssp. <i>dalmatica</i>	0.06	2.13	0.12	0.06	0.11
<i>Linaria vulgaris</i>	0.00	2.13	0.00	0.00	0.00
<i>Lotus tenuis</i>	0.70	2.13	1.31	0.70	1.23
<i>Marrubium vulgare</i>	0.00	8.51	0.00	0.00	0.00
<i>Medicago sativa</i>	0.04	4.26	0.08	0.04	0.07
<i>Taraxacum officinale</i>	0.15	38.30	0.28	0.15	0.26
<i>Trifolium pratense</i>	0.00	2.13	0.00	0.00	0.00
<i>Trifolium repens</i>	0.00	2.13	0.00	0.00	0.00
<i>Verbena bracteata</i>	0.19	14.89	0.36	0.19	0.33
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>10.6</b>	<b>89.4</b>	<b>19.8</b>	<b>11.1</b>	<b>19.4</b>
<b>NATIVE PERENNIAL GRASSES (cool)</b>					
<i>Carex douglasii</i>	0.02	2.13	0.04	0.02	0.04
<i>Carex eleocharis</i>	0.00	6.38	0.00	0.00	0.00
<i>Carex pennsylvanica</i> ssp. <i>heliophila</i>	0.79	31.91	1.47	0.85	1.49
<i>Carex praegracilis</i>	0.15	2.13	0.28	0.15	0.26
<i>Critesion jubatum</i>	0.00	2.13	0.00	0.00	0.00
<i>Elymus elymoides</i>	0.00	2.13	0.00	0.00	0.00
<i>Elymus longifolius</i>	0.04	25.53	0.08	0.04	0.07
<i>Elymus trachycaulus</i>	0.04	4.26	0.08	0.04	0.07
<i>Hesperostipa comata</i>	0.89	23.40	1.67	1.00	1.75
<i>Juncus arcticus</i> ssp. <i>ater</i>	0.00	2.13	0.00	0.00	0.00
<i>Koeleria macrantha</i>	0.43	27.66	0.79	0.43	0.74
<i>Nassella viridula</i>	0.23	10.64	0.44	0.28	0.48
<i>Pascopyrum smithii</i>	5.19	70.21	9.68	5.64	9.86
<i>Poa agassizensis</i>	2.96	31.91	5.52	3.13	5.47
<i>Poa compressa</i>	0.87	21.28	1.63	0.91	1.60
<i>Poa secunda</i>	0.00	4.26	0.00	0.00	0.00
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>11.6</b>	<b>87.2</b>	<b>21.7</b>	<b>12.5</b>	<b>21.8</b>
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>					
<i>Agropyron cristatum</i>	0.49	8.51	0.91	0.49	0.86
<i>Bromopsis inermis</i>	0.87	25.53	1.63	0.87	1.53
<i>Dactylis glomerata</i>	0.30	12.77	0.56	0.30	0.52
<i>Elytrigia repens</i>	0.04	2.13	0.08	0.04	0.07
<i>Festuca arundinacea</i>	0.02	6.38	0.04	0.02	0.04
<i>Phleum pratense</i>	0.00	2.13	0.00	0.00	0.00
<i>Poa pratensis</i>	0.79	8.51	1.47	0.85	1.49
<i>Setaria viridis</i>	0.00	2.13	0.00	0.00	0.00
<i>Thinopyrum intermedium</i>	0.09	4.26	0.16	0.09	0.15
<b>TOTAL INTRO. PERENNIAL GRASSES (c)</b>	<b>2.6</b>	<b>46.8</b>	<b>4.8</b>	<b>2.7</b>	<b>4.7</b>
<b>NATIVE PERENNIAL GRASSES (warm)</b>					
<i>Andropogon gerardii</i>	1.91	27.66	3.57	2.13	3.72
<i>Aristida purpurea</i>	0.21	31.91	0.40	0.21	0.37
<i>Bouteloua curtipendula</i>	0.13	8.51	0.24	0.13	0.22
<i>Buchloe dactyloides</i>	1.72	40.43	3.21	1.87	3.28
<i>Calamovilfa longifolia</i>	0.00	2.13	0.00	0.00	0.00
<i>Chondrosum gracile</i>	1.36	38.30	2.54	1.53	2.68
<i>Chondrosum hirsutum</i>	0.04	2.13	0.08	0.06	0.11
<i>Distichlis spicata</i> ssp. <i>stricta</i>	0.04	2.13	0.08	0.04	0.07
<i>Panicum hallii</i>	0.00	2.13	0.00	0.00	0.00
<i>Schizachyrium scoparium</i>	0.15	12.77	0.28	0.15	0.26
<i>Sporobolus airoides</i>	0.00	4.26	0.00	0.00	0.00
<i>Sporobolus cryptandrus</i>	0.09	4.26	0.16	0.09	0.15
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>5.7</b>	<b>78.7</b>	<b>10.6</b>	<b>6.2</b>	<b>10.9</b>
<b>NATIVE SUBSHRUBS</b>					
<i>Gutierrezia sarothrae</i>	0.77	51.06	1.43	0.81	1.41
<b>TOTAL NATIVE SUBSHRUBS</b>	<b>0.8</b>	<b>51.1</b>	<b>1.4</b>	<b>0.8</b>	<b>1.4</b>

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PLANT SPECIES	AVERAGE COVER (%)	FREQUENCY (%)	RELATIVE VEGETATION COVER (%)	AVERAGE COVER-ALL (%)	RELATIVE VEGETATION COVER-ALL (%)
<b>NATIVE SHRUBS</b>					
<i>Amorpha nana</i>	0.00	4.26	0.00	0.00	0.00
<i>Chrysothamnus nauseosus</i>	0.21	14.89	0.40	0.21	0.37
<i>Crataegus macracantha</i> var. <i>occidentalis</i>	0.00	2.13	0.00	0.00	0.00
<i>Padus virginiana</i> ssp. <i>melanocarpa</i>	0.00	2.13	0.00	0.00	0.00
<i>Rhus aromatica</i> ssp. <i>trilobata</i>	0.02	2.13	0.04	0.02	0.04
<i>Rosa sayi</i>	0.40	27.66	0.75	0.43	0.74
<i>Symphoricarpos occidentalis</i>	0.00	2.13	0.00	0.00	0.00
<i>Yucca glauca</i>	0.47	23.40	0.87	0.49	0.86
<b>TOTAL NATIVE SHRUBS</b>	<b>1.1</b>	<b>48.9</b>	<b>2.1</b>	<b>1.1</b>	<b>2.0</b>
<b>FERNS</b>					
<i>Hippochaete hyemalis</i> ssp. <i>affinis</i>	0.00	2.13	0.00	0.00	0.00
<b>TOTAL FERNS</b>	<b>0.0</b>	<b>2.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>BRYOPHYTES</b>					
Moss	0.00	4.26	0.00	0.00	0.00
<b>TOTAL BRYOPHYTES</b>	<b>0.0</b>	<b>4.3</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>LICHEN</b>					
<i>Cladonia</i> spp.	0.04	4.26	0.08	0.04	0.07
<i>Xanthoparmelia chlorochloa</i>	0.04	4.26	0.08	0.04	0.07
<i>Xanthoparmelia wyomingensis</i>	0.02	2.13	0.04	0.04	0.07
<b>TOTAL LICHEN</b>	<b>0.1</b>	<b>10.6</b>	<b>0.2</b>	<b>0.1</b>	<b>0.2</b>
<b>SUCCULENT</b>					
<i>Coryphantha missouriensis</i>	0.00	2.13	0.00	0.00	0.00
<i>Coryphantha vivipara</i> var. <i>vivipara</i>	0.00	2.13	0.00	0.00	0.00
<i>Echinocereus viridiflorus</i>	0.02	8.51	0.04	0.02	0.04
<i>Opuntia fragilis</i>	0.02	17.02	0.04	0.02	0.04
<i>Opuntia macrorhiza</i>	0.02	36.17	0.04	0.02	0.04
<i>Opuntia polyacantha</i>	0.00	6.38	0.00	0.00	0.00
<b>TOTAL SUCCULENT</b>	<b>0.1</b>	<b>44.7</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>
<b>EPIPHYTE (PARASITE)</b>					
<i>Orobanche multiflora</i>	0.00	2.13	0.00	0.00	0.00
<b>TOTAL EPIPHYTE (PARASITE)</b>	<b>0.0</b>	<b>2.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>MUSHROOMS</b>					
Fungus	0.00	10.64	0.00	0.00	0.00
<b>TOTAL MUSHROOMS</b>	<b>0.0</b>	<b>10.6</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
Standing dead	1.36	55.32		1.38	
Litter	30.49	100.00		30.49	
Bare soil	13.36	91.49		13.36	
Rock	1.17	55.32		1.17	
<b>TOTALS</b>	<b>100.0</b>			<b>103.6</b>	
<b>TOTAL VEGETATION COVER</b>	<b>53.6 (s=16.6)</b>		<b>100.0</b>	<b>57.2 (s=19.1)</b>	<b>100.0</b>
<b>GROUND COVER (Litter+Rock+Veg+St. Dead)</b>	<b>86.6</b>			<b>90.2</b>	
<b>SPECIES DENSITY (# of species/100 sq.m.)</b> (AVERAGE= 27.5 Std.Dev.= 11.8)					



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PLANT SPECIES	Percent Foliar Cover*									
	—SAMPLE NUMBER—									
	1	2	3	4	5	6	7	8	9	10
<b>NATIVE ANNUAL &amp; BIENNIAL FORBS</b>										
<i>Androsace septentrionalis</i>										
<i>Chamaesyce glyptosperma</i>										
<i>Chenopodium</i> spp.										
<i>Cirsium undulatum</i>		P					P	P		
<i>Collinsia parviflora</i>				P						
<i>Collomia linearis</i>										
<i>Descurainia incana</i>										
<i>Draba</i> spp.		P								
<i>Dyssodia papposa</i>										
<i>Erigeron divergens</i>	P		P	1		P	1	P		1
<i>Erysimum asperum</i>		P					P	P		
<i>Evax prolifera</i>										
<i>Gaura parviflora</i>						P				
<i>Grindelia squarrosa</i>	P	1	1	P				P		
<i>Oligosporus pacificus</i>										
<i>Oreocarya virgata</i>										
<i>Plantago patagonica</i>			3		2					
<i>Pterogonum alatum</i>								P		
<i>Salvia aethiopis</i>										
<i>Silene antirrhina</i>									P	
<i>Tithymalus spathulatus</i>										
<b>TOTAL NATIVE ANN. &amp; BIEN. FORBS</b>	P	1	4	1	2	P	1	P	P	1
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>										
<i>Acosta diffusa</i>	1				2	P				1
<i>Alyssum alyssoides</i>			1					2	P	
<i>Alyssum minus</i>	4(1)			1	1(1)	P	5	3(1)	1	P
<i>Camelina microcarpa</i>				P				P		
<i>Carduus nutans</i> ssp. <i>macrolepis</i>								P		
<i>Chenopodium album</i>										
<i>Cirsium vulgare</i>										
<i>Cynoglossum officinale</i>										
<i>Descurainia</i> spp.										
<i>Dianthus armeria</i>									P	
<i>Dipsacus sylvestris</i>										
<i>Erodium cicutarium</i>	1		3		34(4)	11(2)			P	
<i>Lactuca serriola</i>				P		P				
<i>Lappula redowskii</i>										
<i>Lepidium densiflorum</i>	P		2(1)							P
<i>Medicago lupulina</i>										
<i>Melilotus officinalis</i>										
<i>Neolepia campestris</i>				1						P
<i>Plantago lanceolata</i>										P
<i>Pocilla biloba</i>										
<i>Podospermum laciniatum</i>				2				P		
<i>Polygonum ramosissimum</i>			P							
<i>Sisymbrium altissimum</i>					1					
<i>Thlaspi arvense</i>										
<i>Tragopogon dubius</i> ssp. <i>major</i>				1		P	P	4		P
<i>Verbascum blattaria</i>					P	2				
<i>Verbascum thapsus</i>					2(1)	P			2	
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	6(1)	---	6(1)	5	40(6)	13(2)	5	9(1)	3	1
<b>NATIVE ANNUAL GRASSES</b>										
<i>Critesion pusillum</i>				P					P	
<i>Schedonnardus paniculatus</i>										
<i>Vulpia octoflora</i>	P									
<b>TOTAL NATIVE ANN. GRASSES</b>	P	---	---	P	---	---	---	---	P	---



Table 1. Cover Data - All Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	Percent Foliar Cover*									
	—SAMPLE NUMBER—									
	1	2	3	4	5	6	7	8	9	10
<b>NATIVE PERENNIAL FORBS (concluded)</b>										
<i>Hybanthus verticillatus</i>										
<i>Hymenopappus filifolius</i> var. <i>polycephalus</i>										
<i>Ipomopsis spicata</i>							P			
<i>Iris missouriensis</i>									P	
<i>Iva axillaris</i>									P	
<i>Lesquerella montana</i>		P					P	P		
<i>Leucocrinum montanum</i>		P					1			
<i>Liatris punctata</i>		P					P	P		
<i>Lithospermum incisum</i>									P	P
<i>Lomatium orientale</i>	P	P					P			
<i>Lomatium</i> spp.										
<i>Lupinus argenteus</i>	P									
<i>Lygodesmia juncea</i>										
<i>Machaeranthera canescens</i>										
<i>Machaeranthera pinnatifida</i>										
<i>Mertensia lanceolata</i>										
<i>Monarda pectinata</i>										
<i>Musineon divaricatum</i>							P			
<i>Nothocalais cuspidata</i>							P			
<i>Oenothera howardii</i>										
<i>Oligoneuron rigidum</i>										
<i>Oligosporus dracunculoides</i> ssp. <i>glaucus</i>			P	1						
<i>Onosmodium molle</i> ssp. <i>occidentale</i>									P	P
<i>Orobanche ludoviciana</i>										
<i>Oxalis dillenii</i>									P	P
<i>Oxybaphus linearis</i>										
<i>Oxybaphus nyctagineus</i>						P				
<i>Oxytropis x sericea</i>							P			
<i>Packera plattensis</i>										
<i>Penstemon linarioides</i> subsp. <i>coloradoensis</i>										
<i>Penstemon secundiflorus</i>							P			P
<i>Penstemon strictus</i>										
<i>Phyla cuneifolia</i>					P					
<i>Physalis pumila</i> subsp. <i>hispida</i>										
<i>Physaria bellii</i>										
<i>Psilochenia occidentalis</i>										
<i>Psoraleum tenuiflorum</i>		P		1		P	P	P	P	P
<i>Quincula lobata</i>										
<i>Ratibida columnifera</i>		P		P			P	2		P
<i>Rumex crispus</i>					P					
<i>Senecio integerrimus</i>										
<i>Senecio spartioides</i>										
<i>Silene scouleri</i> ssp. <i>hallii</i>				1						
<i>Solanum</i> spp.										
<i>Solidago missouriensis</i>										
<i>Sphaeralcea coccinea</i>	P									
<i>Thelesperma megapotamicum</i>							P	P		
<i>Tithymalus brachyceras</i>							P			P
<i>Townsendia exscapa</i>							P			
<i>Townsendia hookeri</i>								P		
<i>Tradescantia occidentalis</i>	P			P						
<i>Vicia americana</i>	P									
<i>Viola nuttallii</i>							P	(1)		
<i>Virgulus falcatus</i>	4	2	4(3)	2				1	P	
<b>TOTAL NATIVE PERENNIAL FORBS</b>	<b>8(3)</b>	<b>4</b>	<b>10(4)</b>	<b>22(2)</b>	<b>P</b>	<b>1</b>	<b>15</b>	<b>9(2)</b>	<b>1</b>	<b>3</b>
<b>INTRODUCED PERENNIAL FORBS</b>										
<i>Breua arvensis</i>										
<i>Cardaria chalapensis</i>						1				
<i>Convolvulus arvensis</i>					10(8)	10(5)	1			
<i>Hypericum perforatum</i>	P		P				P			

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PLANT SPECIES	Percent Foliar Cover*									
	—SAMPLE NUMBER—									
	1	2	3	4	5	6	7	8	9	10
<b>INTRODUCED PERENNIAL FORBS (Concluded)</b>										
<i>Linaria genistifolia</i> ssp. <i>dalmatica</i>										
<i>Linaria vulgaris</i>										
<i>Lotus tenuis</i>										
<i>Marrubium vulgare</i>										
<i>Medicago sativa</i>										
<i>Taraxacum officinale</i>	P			P			P		P	
<i>Trifolium pratense</i>										
<i>Trifolium repens</i>										
<i>Verbena bracteata</i>										
<b>TOTAL INTRO. PERENNIAL FORBS</b>	P	—	P	P	10(8)	11(5)	1	—	P	—
<b>NATIVE PERENNIAL GRASSES (cool)</b>										
<i>Carex douglasii</i>										
<i>Carex eleocharis</i>							P			
<i>Carex pensylvanica</i> ssp. <i>heliophila</i>	P	5		P			3	2	P	P
<i>Carex praegracilis</i>										
<i>Critesion jubatum</i>								P		
<i>Elymus elymoides</i>									P	
<i>Elymus longifolius</i>							P		P	P
<i>Elymus trachycaulus</i>										
<i>Hesperostipa comata</i>							P	9(2)		P
<i>Juncus arcticus</i> ssp. <i>ater</i>										
<i>Koeleria macrantha</i>	P	12		P			1	3		
<i>Nassella viridula</i>		1		2(1)		5				
<i>Pascopyrum smithii</i>	9(6)	1	8(1)	3		1	P		3(1)	1(1)
<i>Poa agassizensis</i>	P	2				19(4)		P	24(1)	34
<i>Poa compressa</i>		4		3					15(1)	3
<i>Poa secunda</i>				P						
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	9(6)	25	8(1)	8(1)	—	25(4)	4	14(2)	42(3)	38(1)
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>										
<i>Agropyron cristatum</i>										
<i>Bromopsis inermis</i>	P					2				
<i>Dactylis glomerata</i>						P			P	P
<i>Elytrigia repens</i>										
<i>Festuca arundinacea</i>	P									
<i>Pheum pratense</i>										
<i>Poa pratensis</i>		P		8						
<i>Setaria viridis</i>										
<i>Thinopyrum intermedium</i>										
<b>TOTAL INTRO. PERENNIAL GRASSES (c)</b>	P	P	—	8	—	2	—	—	P	P
<b>NATIVE PERENNIAL GRASSES (warm)</b>										
<i>Andropogon gerardii</i>		P					2	4	12(3)	P
<i>Aristida purpurea</i>					P		P	1		
<i>Bouteloua curtipendula</i>										
<i>Buchloe dactyloides</i>	P	P		(1)			4(1)	8		
<i>Calamovilfa longifolia</i>										
<i>Chondrosum gracile</i>		12(1)	1	4(2)			5	5		
<i>Chondrosum hirsutum</i>					2(1)					
<i>Distichlis spicata</i> ssp. <i>stricta</i>										
<i>Panicum hallii</i>										
<i>Schizachyrium scoparium</i>							3	1		
<i>Sporobolus airoides</i>						P				
<i>Sporobolus cryptandrus</i>										P
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	P	12(1)	1	4(3)	2(1)	P	14(1)	19	12(3)	P
<b>NATIVE SUBSHRUBS</b>										
<i>Gutierrezia sarothrae</i>	P	P					P		P	P
<b>TOTAL NATIVE SUBSHRUBS</b>	P	P	—	—	—	—	P	—	P	P

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PLANT SPECIES	Percent Foliar Cover*									
	—SAMPLE NUMBER—									
	1	2	3	4	5	6	7	8	9	10
<b>NATIVE SHRUBS</b>										
<i>Amorpha nana</i>									P	P
<i>Chrysothamnus nauseosus</i>			1							
<i>Crataegus macracantha</i> var. <i>occidentalis</i>										
<i>Padus virginiana</i> ssp. <i>melanocarpa</i>										
<i>Rhus aromatica</i> ssp. <i>trilobata</i>										
<i>Rosa sayi</i>					P	1				P
<i>Symphoricarpos occidentalis</i>									P	
<i>Yucca glauca</i>										
<b>TOTAL NATIVE SHRUBS</b>	--	--	1	--	P	1	--	--	P	P
<b>FERNS</b>										
<i>Hippochaete hyemalis</i> ssp. <i>affinis</i>						P				
<b>TOTAL FERNS</b>	--	--	--	--	--	P	--	--	--	--
<b>BRYOPHYTES</b>										
Moss			P							
<b>TOTAL BRYOPHYTES</b>	--	--	P	--	--	--	--	--	--	--
<b>LICHEN</b>										
<i>Cladonia</i> spp.		1						1		
<i>Xanthoparmelia chlorochloa</i>									P	
<i>Xanthoparmelia wyomingensis</i>										
<b>TOTAL LICHEN</b>	--	1	--	--	--	--	--	1	P	--
<b>SUCCULENT</b>										
<i>Coryphantha missouriensis</i>										
<i>Coryphantha vivipara</i> var. <i>vivipara</i>								P		
<i>Echinocereus viridiflorus</i>							P			
<i>Opuntia fragilis</i>		P		P						
<i>Opuntia macrorhiza</i>		P		1		P	P	P		P
<i>Opuntia polyacantha</i>										
<b>TOTAL SUCCULENT</b>	--	P	--	1	--	P	P	P	--	P
<b>EPIPHYTE (PARASITE)</b>										
<i>Orobanche multiflora</i>										
<b>TOTAL EPIPHYTE (PARASITE)</b>	--	--	--	--	--	--	--	--	--	--
<b>MUSHROOMS</b>										
Fungus			P							
<b>TOTAL MUSHROOMS</b>	--	--	P	--	--	--	--	--	--	--
Standing dead	1(1)	11		1			2	3	1	1
Litter	26	43	20	40	13	14	43	42	26	53
Bare soil	3	3	24	2	9		11	2	11	2
Rock			1				2		1	1
<b>TOTALS</b>	100	100	100	100	100	100	100	100	100	100
<b>TOTAL VEGETATION COVER</b>	70(11)	43(1)	55(10)	57(6)	78(19)	86(11)	42(1)	53(5)	61(6)	43(1)
<b>GROUND COVER (Litter+Rock+Veg+St. Dead)</b>	97(12)	97(1)	76(10)	98(6)	91(19)	100(11)	89(1)	98(5)	89(6)	98(1)
<b>SPECIES DENSITY (# of species/100 sq.m.)</b>	28	32	22	38	15	28	49	38	33	32
(AVERAGE= 27.5 Std.Dev.= 11.8)										

\*P= Present within 1 m. on either side of the cover transect, but not quantitatively encountered.

Table 1. Cover Data - All Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	Percent Foliar Cover*									
	—SAMPLE NUMBER—									
	11	13	14	15	16	17	18	19	20	
<b>NATIVE ANNUAL &amp; BIENNIAL FORBS</b>										
<i>Androsace septentrionalis</i>										
<i>Chamaesyce glyptosperma</i>									P	
<i>Chenopodium</i> spp.										
<i>Cirsium undulatum</i>			P	P		P			P	
<i>Collinsia parviflora</i>										
<i>Collomia linearis</i>										
<i>Descurainia incana</i>										
<i>Draba</i> spp.										
<i>Dyssodia papposa</i>										
<i>Erigeron divergens</i>			1	P	4	1	1(2)			
<i>Erysimum asperum</i>										
<i>Evax prolifera</i>										
<i>Gaura parviflora</i>						P				
<i>Grindelia squarrosa</i>			P							
<i>Oligosporus pacificus</i>										
<i>Oreocarya virgata</i>					P		P			
<i>Plantago patagonica</i>		P		P						
<i>Pterogonum alatum</i>					P					
<i>Salvia aethiopsis</i>										
<i>Silene antirrhina</i>		P		1				P		
<i>Tithymalus spathulatus</i>										
<b>TOTAL NATIVE ANN. &amp; BIEN. FORBS</b>	—	P	1	1	4	1	1(2)	P	—	
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>										
<i>Acosta diffusa</i>									P	2
<i>Alyssum alyssoides</i>				4						P
<i>Alyssum minus</i>	1	(1)	3(1)	4		10	1	P	P	
<i>Camelina microcarpa</i>					P					
<i>Carduus nutans</i> ssp. <i>macrolepis</i>	P			P		4		P	P	
<i>Chenopodium album</i>										
<i>Cirsium vulgare</i>							P			
<i>Cynoglossum officinale</i>								P		
<i>Descurainia</i> spp.										
<i>Dianthus armeria</i>										
<i>Dipsacus sylvestris</i>										
<i>Erodium cicutarium</i>	P	P	P							
<i>Lactuca serriola</i>			P	P	P		P			
<i>Lappula redowskii</i>										
<i>Lepidium densiflorum</i>			P				P		P	
<i>Medicago lupulina</i>	P	P	P						P	P
<i>Melilotus officinalis</i>									P	1
<i>Neolepia campestre</i>										
<i>Plantago lanceolata</i>	6		P							
<i>Pocilla biloba</i>										
<i>Podospermum laciniatum</i>					P		P	1	P	
<i>Polygonum ramosissimum</i>										
<i>Sisymbrium altissimum</i>		P					P			
<i>Thlaspi arvense</i>										
<i>Tragopogon dubius</i> ssp. <i>major</i>		P	1	P	P		P	P	P	
<i>Verbascum blattaria</i>										
<i>Verbascum thapsus</i>	P	P								
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	7	(1)	4(1)	8	P	14	1	1	3	
<b>NATIVE ANNUAL GRASSES</b>										
<i>Critesion pusillum</i>										
<i>Schedonnardus paniculatus</i>										P
<i>Vulpia octoflora</i>		P	P							
<b>TOTAL NATIVE ANN. GRASSES</b>	—	P	P	—	—	—	—	—	—	P







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	—SAMPLE NUMBER—									
	11	13	14	15	16	17	18	19	20	
<b>INTRODUCED PERENNIAL FORBS (Concluded)</b>										
<i>Linaria genistifolia</i> ssp. <i>dalmatica</i>		3								
<i>Linaria vulgaris</i>										
<i>Lotus tenuis</i>	33									
<i>Marrubium vulgare</i>										
<i>Medicago sativa</i>									1	
<i>Taraxacum officinale</i>			P	P	P	P	P			P
<i>Trifolium pratense</i>	P									
<i>Trifolium repens</i>	P									
<i>Verbena bracteata</i>										
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>36</b>	<b>4</b>	<b>2</b>	<b>6(2)</b>	<b>P</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>3</b>	
<b>NATIVE PERENNIAL GRASSES (cool)</b>										
<i>Carex douglasii</i>					P					
<i>Carex eleocharis</i>										
<i>Carex pennsylvanica</i> ssp. <i>heliophila</i>	3(1)	1		4(1)				1		
<i>Carex praegracilis</i>										
<i>Critesion jubatum</i>										
<i>Elymus elymoides</i>										
<i>Elymus longifolius</i>	P	P				1	1	P		
<i>Elymus trachycaulus</i>										
<i>Hesperostipa comata</i>	2	13(2)								P
<i>Juncus arcticus</i> ssp. <i>ater</i>										
<i>Koeleria macrantha</i>	1	1			P		P			
<i>Nassella viridula</i>										
<i>Pascopyrum smithii</i>	1			P	3		2	4	1	
<i>Poa agassizensis</i>				P	1					
<i>Poa compressa</i>					8(1)					P
<i>Poa secunda</i>										
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>1</b>	<b>6(1)</b>	<b>15(2)</b>	<b>P</b>	<b>16(2)</b>	<b>1</b>	<b>3</b>	<b>5</b>	<b>1</b>	
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>										
<i>Agropyron cristatum</i>			P							
<i>Bromopsis inermis</i>	P							16	11	
<i>Dactylis glomerata</i>	5								9	
<i>Elytrigia repens</i>										
<i>Festuca arundinacea</i>										
<i>Phleum pratense</i>			P							
<i>Poa pratensis</i>	8									
<i>Setaria viridis</i>		P								
<i>Thinopyrum intermedium</i>										3
<b>TOTAL INTRO. PERENNIAL GRASSES (c)</b>	<b>13</b>	<b>P</b>	<b>P</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>16</b>	<b>23</b>	
<b>NATIVE PERENNIAL GRASSES (warm)</b>										
<i>Andropogon gerardii</i>	27(3)	8(1)		10(2)	2(1)	22				
<i>Aristida purpurea</i>		P		P	1	1	P	2		
<i>Bouteloua curtipendula</i>	P									
<i>Buchloe dactyloides</i>	2				P	2	4			
<i>Calamovilfa longifolia</i>										
<i>Chondrosum gracile</i>			9(1)	9(2)		P	4		P	
<i>Chondrosum hirsutum</i>										
<i>Distichlis spicata</i> ssp. <i>stricta</i>										
<i>Panicum hallii</i>	P									
<i>Schizachyrium scoparium</i>		P	2		P		1			
<i>Sporobolus airoides</i>										
<i>Sporobolus cryptandrus</i>										
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>P</b>	<b>29(3)</b>	<b>19(2)</b>	<b>9(2)</b>	<b>10(2)</b>	<b>3(1)</b>	<b>30</b>	<b>4</b>	<b>2</b>	
<b>NATIVE SUBSHRUBS</b>										
<i>Gutierrezia sarothrae</i>		P	P	3	1	2	3	3(1)	9(1)	
<b>TOTAL NATIVE SUBSHRUBS</b>	<b>—</b>	<b>P</b>	<b>P</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>3(1)</b>	<b>9(1)</b>	

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PLANT SPECIES	Percent Foliar Cover*									
	---SAMPLE NUMBER---									
	11	13	14	15	16	17	18	19	20	
<b>NATIVE SHRUBS</b>										
<i>Amorpha nana</i>										
<i>Chrysothamnus nauseosus</i>						5	1			
<i>Crataegus macracantha</i> var. <i>occidentalis</i>										
<i>Padus virginiana</i> ssp. <i>melanocarpa</i>							P			
<i>Rhus aromatica</i> ssp. <i>trilobata</i>										
<i>Rosa sayi</i>				3	1		2	9	P	
<i>Symphoricarpos occidentalis</i>										
<i>Yucca glauca</i>		P			P	7	2			
<b>TOTAL NATIVE SHRUBS</b>	--	P	--	3	1	12	5	9	P	
<b>FERNS</b>										
<i>Hippochaete hyemalis</i> ssp. <i>affinis</i>										
<b>TOTAL FERNS</b>	--	--	--	--	--	--	--	--	--	--
<b>BRYOPHYTES</b>										
Moss										
<b>TOTAL BRYOPHYTES</b>	--	--	--	--	--	--	--	--	--	--
<b>LICHEN</b>										
<i>Cladonia</i> spp.										
<i>Xanthoparmelia chlorochloa</i>										
<i>Xanthoparmelia wyomingensis</i>										
<b>TOTAL LICHEN</b>	--	--	--	--	--	--	--	--	--	--
<b>SUCCULENT</b>										
<i>Coryphantha missouriensis</i>						P				
<i>Coryphantha vivipara</i> var. <i>vivipara</i>										
<i>Echinocereus viridiflorus</i>			P							
<i>Opuntia fragilis</i>					P		P			
<i>Opuntia macrorhiza</i>			P	P	P					
<i>Opuntia polyacantha</i>										
<b>TOTAL SUCCULENT</b>	--	--	P	P	P	--	P	--	--	--
<b>EPIPHYTE (PARASITE)</b>										
<i>Orobanche multiflora</i>			P							
<b>TOTAL EPIPHYTE (PARASITE)</b>	--	--	P	--	--	--	--	--	--	--
<b>MUSHROOMS</b>										
Fungus			P				P			
<b>TOTAL MUSHROOMS</b>	--	--	P	--	--	--	P	--	--	--
Standing dead	1	1		5		1	5	1	2	
Litter	27	34	26	17	40	30	23	37	27	
Bare soil	11	4	3	6	9	7	4	4	25	
Rock	2	3	4		1	3	5		2	
<b>TOTALS</b>	100	100	100	100	100	100	100	100	100	
<b>TOTAL VEGETATION COVER</b>	59	58(5)	67(7)	72(6)	50(5)	59(1)	63(2)	58(2)	44(1)	
<b>GROUND COVER (Litter+Rock+Veg+St. Dead)</b>	89	96(5)	97(7)	94(6)	91(5)	93(1)	96(2)	96(2)	75(1)	
<b>SPECIES DENSITY (# of species/100 sq.m.)</b>	21	36	51	34	44	42	47	26	31	
<b>(AVERAGE= 27.5 Std.Dev.= 11.8)</b>										

Table 1. Cover Data - All Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	Percent Foliar Cover*									
	---SAMPLE NUMBER---									
	21	22	23	24	25	26	27	28	29	30
<b>NATIVE ANNUAL &amp; BIENNIAL FORBS</b>										
<i>Androsace septentrionalis</i>						P				
<i>Chamaesyce glyptosperma</i>							P			
<i>Chenopodium</i> spp.								P		
<i>Cirsium undulatum</i>				P		P		P		
<i>Collinsia parviflora</i>										
<i>Collomia linearis</i>										
<i>Descurainia incana</i>										
<i>Draba</i> spp.										
<i>Dyssodia papposa</i>										
<i>Erigeron divergens</i>										P
<i>Erysimum asperum</i>				P						
<i>Evax prolifera</i>										
<i>Gaura parviflora</i>										
<i>Grindelia squarrosa</i>										P
<i>Oligosporus pacificus</i>				P						
<i>Oreocarya virgata</i>										
<i>Plantago patagonica</i>			1						6	P
<i>Pterogonum alatum</i>										
<i>Salvia aethiopsis</i>										
<i>Silene antirrhina</i>										
<i>Tithymalus spathulatus</i>										
<b>TOTAL NATIVE ANN. &amp; BIEN. FORBS.</b>	--	--	1	P	--	P	P	P	6	P
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>										
<i>Acosta diffusa</i>				P						
<i>Alyssum alyssoides</i>							P	1		P
<i>Alyssum minus</i>						P				P
<i>Camelina microcarpa</i>										P
<i>Carduus nutans</i> ssp. <i>macrolepis</i>						P				
<i>Chenopodium album</i>									P	
<i>Cirsium vulgare</i>										
<i>Cynoglossum officinale</i>										
<i>Descurainia</i> spp.										
<i>Dianthus armeria</i>										
<i>Dipsacus sylvestris</i>										
<i>Erodium cicutarium</i>							P			
<i>Lactuca serriola</i>				P						P
<i>Lappula redowskii</i>			1				P			
<i>Lepidium densiflorum</i>										P
<i>Medicago lupulina</i>	P	P								
<i>Melilotus officinalis</i>	2				28	6				
<i>Neolepia campestre</i>										
<i>Plantago lanceolata</i>										
<i>Pocilla biloba</i>									1	
<i>Podospermum laciniatum</i>		P		P						P
<i>Polygonum ramosissimum</i>										
<i>Sisymbrium altissimum</i>						P			P	
<i>Thlaspi arvense</i>										
<i>Tragopogon dubius</i> ssp. <i>major</i>		P		P				P		(1)
<i>Verbascum blattaria</i>										
<i>Verbascum thapsus</i>	P						1		P	
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	2	P	1	P	28	6	1	1	1	(1)
<b>NATIVE ANNUAL GRASSES</b>										
<i>Critesion pusillum</i>										5
<i>Schedonnardus paniculatus</i>										
<i>Vulpia octoflora</i>				P				P		P
<b>TOTAL NATIVE ANN. GRASSES</b>	--	--	--	P	--	--	--	P	--	5





Table 1. Cover Data - All Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	Percent Foliar Cover*									
	---SAMPLE NUMBER---									
	21	22	23	24	25	26	27	28	29	30
<b>INTRODUCED PERENNIAL FORBS (Concluded)</b>										
<i>Linaria genistifolia</i> ssp. <i>dalmatica</i>										
<i>Linaria vulgaris</i>										
<i>Lotus tenuis</i>										
<i>Marrubium vulgare</i>									P	
<i>Medicago sativa</i>		1								
<i>Taraxacum officinale</i>	P									
<i>Trifolium pratense</i>										
<i>Trifolium repens</i>										
<i>Verbena bracteata</i>			4		1		2		2	
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>29</b>	<b>4</b>	<b>62(1)</b>	<b>—</b>	<b>31(2)</b>	<b>3</b>	<b>56(1)</b>	<b>1</b>	<b>50</b>	<b>—</b>
<b>NATIVE PERENNIAL GRASSES (cool)</b>										
<i>Carex douglasii</i>										
<i>Carex eleocharis</i>										
<i>Carex pensylvanica</i> ssp. <i>heliophila</i>				9						
<i>Carex praegracilis</i>		7								
<i>Critesion jubatum</i>										
<i>Elymus elymoides</i>										
<i>Elymus longifolius</i>					P			P		P
<i>Elymus trachycaulus</i>				1						
<i>Hesperostipa comata</i>				10(1)		P		8		P
<i>Juncus arcticus</i> ssp. <i>ater</i>		P								
<i>Koeleria macrantha</i>				P				1		
<i>Nassella viridula</i>										
<i>Pascopyrum smithii</i>	17(1)	7(2)	2				3(1)	2	2	11(1)
<i>Poa agassizensis</i>		22		1						
<i>Poa compressa</i>				2						P
<i>Poa secunda</i>										
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>17(1)</b>	<b>36(2)</b>	<b>2</b>	<b>23(1)</b>	<b>—</b>	<b>P</b>	<b>3(1)</b>	<b>11</b>	<b>2</b>	<b>11(1)</b>
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>										
<i>Agropyron cristatum</i>				2						
<i>Bromopsis inermis</i>	2	2								1
<i>Dactylis glomerata</i>										
<i>Elytrigia repens</i>										
<i>Festuca arundinacea</i>										
<i>Phleum pratense</i>										
<i>Poa pratensis</i>										
<i>Setaria viridis</i>										
<i>Thinopyrum intermedium</i>										
<b>TOTAL INTRO. PERENNIAL GRASSES (c)</b>	<b>2</b>	<b>2</b>	<b>—</b>	<b>2</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>1</b>
<b>NATIVE PERENNIAL GRASSES (warm)</b>										
<i>Andropogon gerardii</i>									P	
<i>Aristida purpurea</i>						2				
<i>Bouteloua curtipendula</i>				P				1		
<i>Buchloe dactyloides</i>			P			P		2		16(4)
<i>Calamovilfa longifolia</i>										
<i>Chondrosium gracile</i>			3	P			P	P		
<i>Chondrosium hirsutum</i>										
<i>Distichlis spicata</i> ssp. <i>stricta</i>										
<i>Panicum hallii</i>										
<i>Schizachyrium scoparium</i>										
<i>Sporobolus airoides</i>										
<i>Sporobolus cryptandrus</i>										
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>—</b>	<b>—</b>	<b>3</b>	<b>P</b>	<b>—</b>	<b>2</b>	<b>P</b>	<b>3</b>	<b>—</b>	<b>16(4)</b>
<b>NATIVE SUBSHRUBS</b>										
<i>Gutierrezia sarothrae</i>						P	P	1		
<b>TOTAL NATIVE SUBSHRUBS</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>P</b>	<b>P</b>	<b>1</b>	<b>—</b>	<b>—</b>



PLANT SPECIES	Percent Foliar Cover*									
	—SAMPLE NUMBER—									
	31	32	33	34	35	36	37	38	39	40
<b>NATIVE ANNUAL &amp; BIENNIAL FORBS</b>										
<i>Androsace septentrionalis</i>				P						
<i>Chamaesyce glyptosperma</i>										
<i>Chenopodium</i> spp.										
<i>Cirsium undulatum</i>	P									
<i>Collinsia parviflora</i>										
<i>Collomia linearis</i>										
<i>Descurainia incana</i>		P								
<i>Draba</i> spp.										
<i>Dyssodia papposa</i>								P		
<i>Erigeron divergens</i>										
<i>Erysimum asperum</i>										
<i>Evax prolifera</i>			P							
<i>Gaura parviflora</i>										
<i>Grindelia squarrosa</i>										
<i>Oligosporus pacificus</i>										
<i>Oreocarya virgata</i>										
<i>Plantago patagonica</i>	7	P		P				P		
<i>Pterogonum alatum</i>										
<i>Salvia aethiopis</i>					P					
<i>Silene antirrhina</i>							P			
<i>Tithymalus spathulatus</i>							P			
<b>TOTAL NATIVE ANN. &amp; BIEN. FORBS</b>	7	P	P	P	P	P	P	—	—	—
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>										
<i>Acosta diffusa</i>		P	1						P	P
<i>Alyssum alyssoides</i>				P					P	
<i>Alyssum minus</i>			P	P	P				P	
<i>Camelina microcarpa</i>				P						
<i>Carduus nutans</i> ssp. <i>macrolepis</i>			P							
<i>Chenopodium album</i>					P					
<i>Cirsium vulgare</i>										
<i>Cynoglossum officinale</i>										
<i>Descurainia</i> spp.										
<i>Dianthus armeria</i>										
<i>Dipsacus sylvestris</i>				1						
<i>Erodium cicutarium</i>	7	3		1	5			P		
<i>Lactuca serriola</i>										
<i>Lappula redowskii</i>						P	P			
<i>Lepidium densiflorum</i>	P	P								
<i>Medicago lupulina</i>	P		1	2						
<i>Melilotus officinalis</i>									P	
<i>Neolepia campestre</i>										
<i>Plantago lanceolata</i>		(1)								
<i>Pocilla biloba</i>										
<i>Podospermum laciniatum</i>										
<i>Polygonum ramosissimum</i>										
<i>Sisymbrium altissimum</i>										
<i>Thlaspi arvense</i>										
<i>Tragopogon dubius</i> ssp. <i>major</i>		P								
<i>Verbascum blattaria</i>										
<i>Verbascum thapsus</i>										
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	7	3(1)	2	4	5	P	P	—	P	P
<b>NATIVE ANNUAL GRASSES</b>										
<i>Critesion pusillum</i>										
<i>Schedonnardus paniculatus</i>	P				1		P			
<i>Vulpia octoflora</i>		1	P							
<b>TOTAL NATIVE ANN. GRASSES</b>	P	1	P	—	1	—	P	—	—	—







Table 1. Cover Data - All Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	Percent Foliar Cover*									
	—SAMPLE NUMBER—									
	31	32	33	34	35	36	37	38	39	40
<b>INTRODUCED PERENNIAL FORBS (Concluded)</b>										
<i>Linaria genistifolia</i> ssp. <i>dalmatica</i>										
<i>Linaria vulgaris</i>										
<i>Lotus tenuis</i>										
<i>Marrubium vulgare</i>					P					
<i>Medicago sativa</i>										
<i>Taraxacum officinale</i>			2							
<i>Trifolium pratense</i>										
<i>Trifolium repens</i>										
<i>Verbena bracteata</i>					P					
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>30</b>	<b>2</b>	<b>10</b>	<b>21</b>	<b>9</b>	<b>7(1)</b>	<b>P</b>	<b>P</b>	<b>17(1)</b>	<b>7</b>
<b>NATIVE PERENNIAL GRASSES (cool)</b>										
<i>Carex douglasii</i>										
<i>Carex eleocharis</i>										
<i>Carex pensylvanica</i> ssp. <i>heliophila</i>		1				2(1)				
<i>Carex praegracilis</i>										
<i>Critesion jubatum</i>		P								
<i>Elymus elymoides</i>										
<i>Elymus longifolius</i>										
<i>Elymus trachycaulus</i>		1								
<i>Hesperostipa comata</i>										
<i>Juncus arcticus</i> ssp. <i>ater</i>										
<i>Koeleria macrantha</i>										
<i>Nassella viridula</i>										
<i>Pascopyrum smithii</i>		2	46(2)	23(2)	17(1)	32	8	14		
<i>Poa agassizensis</i>		15(1)		3		2				
<i>Poa compressa</i>										
<i>Poa secunda</i>										
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>—</b>	<b>19(1)</b>	<b>46(2)</b>	<b>26(2)</b>	<b>17(1)</b>	<b>36(1)</b>	<b>8</b>	<b>14</b>	<b>—</b>	<b>—</b>
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>										
<i>Agropyron cristatum</i>									6	15
<i>Bromopsis inermis</i>		P							4	3
<i>Dactylis glomerata</i>										
<i>Elytrigia repens</i>										
<i>Festuca arundinacea</i>		P								
<i>Phleum pratense</i>										
<i>Poa pratensis</i>										
<i>Setaria viridis</i>										
<i>Thinopyrum intermedium</i>										
<b>TOTAL INTRO. PERENNIAL GRASSES (c)</b>	<b>—</b>	<b>P</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>10</b>	<b>18</b>
<b>NATIVE PERENNIAL GRASSES (warm)</b>										
<i>Andropogon gerardii</i>										
<i>Aristida purpurea</i>					2		1			P
<i>Bouteloua curtipendula</i>										
<i>Buchloe dactyloides</i>	11		(1)					4		1
<i>Calamoviifa longifolia</i>										P
<i>Chondrosium gracile</i>	1							2		
<i>Chondrosium hirsutum</i>										
<i>Distichlis spicata</i> ssp. <i>stricta</i>				2						
<i>Panicum hallii</i>										
<i>Schizachyrium scoparium</i>										
<i>Sporobolus airoides</i>										
<i>Sporobolus cryptandrus</i>										
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>12</b>	<b>—</b>	<b>2(1)</b>	<b>—</b>	<b>2</b>	<b>—</b>	<b>1</b>	<b>6</b>	<b>—</b>	<b>1</b>
<b>NATIVE SUBSHRUBS</b>										
<i>Gutierrezia sarothrae</i>			P					P	1	
<b>TOTAL NATIVE SUBSHRUBS</b>	<b>—</b>	<b>—</b>	<b>P</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>P</b>	<b>1</b>	<b>—</b>

Table 1. Cover Data - All Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	Percent Foliar Cover*									
	—SAMPLE NUMBER—									
	31	32	33	34	35	36	37	38	39	40
<b>NATIVE SHRUBS</b>										
<i>Amorpha nana</i>										
<i>Chrysothamnus nauseosus</i>								1	P	
<i>Crataegus macracantha</i> var. <i>occidentalis</i>										
<i>Padus virginiana</i> ssp. <i>melanocarpa</i>										
<i>Rhus aromatica</i> ssp. <i>trilobata</i>									1	
<i>Rosa sayi</i>								P	P	
<i>Symphoricarpos occidentalis</i>										P
<i>Yucca glauca</i>										P
<b>TOTAL NATIVE SHRUBS</b>	--	--	--	--	--	--	--	1	1	--
<b>FERNS</b>										
<i>Hippochaete hyemalis</i> ssp. <i>affinis</i>										
<b>TOTAL FERNS</b>	--	--	--	--	--	--	--	--	--	--
<b>BRYOPHYTES</b>										
Moss										
<b>TOTAL BRYOPHYTES</b>	--	--	--	--	--	--	--	--	--	--
<b>LICHEN</b>										
<i>Cladonia</i> spp.										
<i>Xanthoparmelia chlorochloa</i>										
<i>Xanthoparmelia wyomingensis</i>										
<b>TOTAL LICHEN</b>	--	--	--	--	--	--	--	--	--	--
<b>SUCCULENT</b>										
<i>Coryphantha missouriensis</i>										
<i>Coryphantha vivipara</i> var. <i>vivipara</i>										
<i>Echinocereus viridiflorus</i>										
<i>Opuntia fragilis</i>										
<i>Opuntia macrorhiza</i>	P									P
<i>Opuntia polyacantha</i>								P		
<b>TOTAL SUCCULENT</b>	P	--	--	--	--	--	--	P	P	--
<b>EPIPHYTE (PARASITE)</b>										
<i>Orobanche multiflora</i>										
<b>TOTAL EPIPHYTE (PARASITE)</b>	--	--	--	--	--	--	--	--	--	--
<b>MUSHROOMS</b>										
Fungus					P					
<b>TOTAL MUSHROOMS</b>	--	--	--	--	P	--	--	--	--	--
Standing dead	1		1					1		2
Litter	19	65	10	34	21	54	15	55	14	54
Bare soil	17	1	28	11	25	1	73	19	48	16
Rock	6						2	4	1	2
<b>TOTALS</b>	100	100	100	100	100	100	100	100	100	100
<b>TOTAL VEGETATION COVER</b>	57	34(2)	61(3)	55(2)	54(1)	45(2)	9	22	35(1)	28
<b>GROUND COVER (Litter+Rock+Veg+St.Dead)</b>	83	99(2)	72(3)	89(2)	75(1)	99(2)	27	81	52(1)	84
<b>SPECIES DENSITY (# of species/100 sq.m.)</b> (AVERAGE= 27.5 Std.Dev.= 11.8)	13	21	20	13	19	8	16	17	29	27

Table 1. Cover Data - All Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	Percent Foliar Cover*							
	—SAMPLE NUMBER—							
	41	42	43	44	45	46	47	48
<b>NATIVE ANNUAL &amp; BIENNIAL FORBS</b>								
<i>Androsace septentrionalis</i>			P					
<i>Chamaesyce glyptosperma</i>								
<i>Chenopodium</i> spp.								
<i>Cirsium undulatum</i>	7		P	P			P	P
<i>Collinsia parviflora</i>								
<i>Collomia linearis</i>			1					
<i>Descurainia incana</i>								
<i>Draba</i> spp.								
<i>Dyssodia papposa</i>								
<i>Erigeron divergens</i>				P				
<i>Erysimum asperum</i>				P				P
<i>Evax prolifera</i>								
<i>Gaura parviflora</i>								
<i>Grindelia squarrosa</i>			P	P			P	
<i>Oligosporus pacificus</i>								
<i>Oreocarya virgata</i>			P					
<i>Plantago patagonica</i>					1			
<i>Pterogonum alatum</i>								
<i>Salvia aethiopsis</i>							P	
<i>Silene antirrhina</i>			P					
<i>Tithymalus spathulatus</i>								
<b>TOTAL NATIVE ANN. &amp; BIEN. FORBS</b>	7	—	1	P	1	—	P	P
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>								
<i>Acosta diffusa</i>	1	1				4		
<i>Alyssum alyssoides</i>	P						P	P
<i>Alyssum minus</i>	P	P	P		3(2)	3(1)	1	
<i>Camelina microcarpa</i>				1				
<i>Carduus nutans</i> ssp. <i>macrolepis</i>		P				P		P
<i>Chenopodium album</i>								
<i>Cirsium vulgare</i>							P	
<i>Cynoglossum officinale</i>					P	P		
<i>Descurainia</i> spp.								
<i>Dianthus armeria</i>								
<i>Dipsacus sylvestris</i>								
<i>Erodium cicutarium</i>					1(1)	1		
<i>Lactuca serriola</i>	29(3)	1						
<i>Lappula redowskii</i>								
<i>Lepidium densiflorum</i>								
<i>Medicago lupulina</i>								
<i>Melilotus officinalis</i>	1							
<i>Neolepia campestre</i>				P				
<i>Plantago lanceolata</i>								
<i>Pocilla biloba</i>								
<i>Podospermum laciniatum</i>							1	P
<i>Polygonum ramosissimum</i>								
<i>Sisymbrium altissimum</i>		P						
<i>Thlaspi arvense</i>								P
<i>Tragopogon dubius</i> ssp. <i>major</i>	P	P		P		1	(1)	1
<i>Verbascum blattaria</i>								
<i>Verbascum thapsus</i>	P	30(6)						
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	31(3)	32(6)	P	1	4(3)	9(1)	2(1)	1
<b>NATIVE ANNUAL GRASSES</b>								
<i>Critesion pusillum</i>	P							
<i>Schedonnardus paniculatus</i>								
<i>Vulpia octoflora</i>			P					
<b>TOTAL NATIVE ANN. GRASSES</b>	P	—	P	—	—	—	—	—

Table 1. Cover Data - All Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	Percent Foliar Cover*							
	—SAMPLE NUMBER—							
	41	42	43	44	45	46	47	48
<b>INTRODUCED ANNUAL GRASSES</b>								
<i>Anisantha tectorum</i>	9	13	2		1	35	1	P
<i>Bromus japonicus</i>				1				
<i>Cylindropyrum cylindricum</i>								
<i>Hordeum vulgare</i>								
<i>Poa bulbosa</i>								
<b>TOTAL INTRO. ANN. GRASSES</b>	9	13	2	1	1	35	1	P
<b>NATIVE PERENNIAL FORBS</b>								
<i>Acetosella vulgaris</i>				1				
<i>Achillea lanulosa</i>								
<i>Adenolinum lewisii</i>	P	P					P	P
<i>Agoseris glauca</i>				P				
<i>Allium textile</i>			P					
<i>Ambrosia psilostachya</i> var. <i>coronopifolia</i>	4(2)		P	P		1		2
<i>Antennaria corymbosa</i>			P					
<i>Antennaria rosea</i>				P				
<i>Antennaria</i> spp.								
<i>Aphyllon fasciculatum</i>								
<i>Argemone polyanthemus</i>								P
<i>Arnica fulgens</i>			P	5				
<i>Artemisia frigida</i>			1	P			2	1
<i>Artemisia ludoviciana</i>					P	P		1
<i>Asclepias pumila</i>								
<i>Asclepias viridiflora</i>	P							
<i>Aster laevis</i> var. <i>geyeri</i>					P			
<i>Aster porteri</i>			P					
<i>Astragalus agrestis</i>	P		P	P				
<i>Astragalus crassicaupus</i>	2							
<i>Astragalus drummondii</i>							5	P
<i>Astragalus miser</i> var. <i>oblongifolius</i>								
<i>Astragalus shortianus</i>			1					P
<i>Astragalus tridactylicus</i>								
<i>Brickellia eupatorioides</i>								
<i>Calylophus serrulatus</i>								
<i>Castilleja sessiliflora</i>								
<i>Comandra umbellata</i> ssp. <i>pallida</i>								
<i>Cucurbita foetidissima</i>								
<i>Cymopterus montanus</i>								
<i>Dalea candida</i> var. <i>oligophylla</i>								P
<i>Dalea purpurea</i>								
<i>Drymocallis fissa</i>								
<i>Epilobium ciliatum</i>								
<i>Eremogone fendleri</i>			1	P				
<i>Erigeron canus</i>								
<i>Erigeron flagellaris</i>								
<i>Erigeron pumilus</i>								
<i>Eriogonum lonchophyllum</i>								P
<i>Evolvulus nuttalianus</i>								
<i>Frasera speciosa</i>			P					
<i>Gaillardia aristata</i>								
<i>Gastrolychnis drummondii</i>								
<i>Gaura coccinea</i>							P	P
<i>Glandularia bipinnatifida</i>								P
<i>Helianthella uniflora</i>								
<i>Helianthus rigidus</i> ssp. <i>subrhomboides</i>								1
<i>Heterotheca fulcrata</i>			2					
<i>Heterotheca villosa</i>				P				
<i>Heuchera hallii</i>			1					

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PLANT SPECIES	Percent Foliar Cover*							
	—SAMPLE NUMBER—							
	41	42	43	44	45	46	47	48
<b>NATIVE PERENNIAL FORBS (concluded)</b>								
<i>Hybanthus verticillatus</i>								
<i>Hymenopappus filifolius</i> var. <i>polycephalus</i>								
<i>Ipomopsis spicata</i>								
<i>Iris missouriensis</i>								
<i>Iva axillaris</i>								
<i>Lesquerella montana</i>			P	P				
<i>Leucocrinum montanum</i>			2(1)	1				
<i>Liatris punctata</i>			(1)					
<i>Lithospermum incisum</i>								
<i>Lomatium orientale</i>			1					
<i>Lomatium</i> spp.								
<i>Lupinus argenteus</i>			5					
<i>Lygodesmia juncea</i>								
<i>Machaeranthera canescens</i>								
<i>Machaeranthera pinnatifida</i>								P
<i>Mertensia lanceolata</i>	P		P					P
<i>Monarda pectinata</i>								
<i>Musineon divaricatum</i>							P	P
<i>Nothocalais cuspidata</i>								P
<i>Oenothera howardii</i>								
<i>Oligoneuron rigidum</i>			P					
<i>Oligosporus dracunculoides</i> ssp. <i>glaucus</i>				P			P	P
<i>Onosmodium molle</i> ssp. <i>occidentale</i>								P
<i>Orobanche ludoviciana</i>								
<i>Oxalis dillenii</i>								
<i>Oxybaphus linearis</i>								
<i>Oxybaphus nyctagineus</i>						P		
<i>Oxytropis x sericea</i>			1				P	1(1)
<i>Packera plattensis</i>								
<i>Penstemon linarioides</i> subsp. <i>coloradoensis</i>								
<i>Penstemon secundiflorus</i>			P					P
<i>Penstemon strictus</i>								
<i>Phyla cuneifolia</i>					40(2)			
<i>Physalis pumila</i> subsp. <i>hispida</i>								
<i>Physaria bellii</i>								
<i>Psilochenia occidentalis</i>				1				
<i>Psoraleidum tenuiflorum</i>	2	P	1	1	P	P		1
<i>Quincula lobata</i>							P	
<i>Ratibida columnifera</i>			P				1	P
<i>Rumex crispus</i>	3				3	P		
<i>Senecio integerrimus</i>			P					
<i>Senecio spartioides</i>								
<i>Silene scouleri</i> ssp. <i>hallii</i>								
<i>Solanum</i> spp.								
<i>Solidago missouriensis</i>							P	P
<i>Sphaeralcea coccinea</i>								
<i>Thelesperma megapotamicum</i>								
<i>Tithymalus brachyceras</i>			P	P			1	
<i>Townsendia exscapa</i>								
<i>Townsendia hookeri</i>								
<i>Tradescantia occidentalis</i>			P					
<i>Vicia americana</i>				P				
<i>Viola nuttallii</i>			3	P				P
<i>Virgulus falcatus</i>	2	P	P	9	P	2(1)	1	
<b>TOTAL NATIVE PERENNIAL FORBS</b>	<b>13(2)</b>	<b>P</b>	<b>19(2)</b>	<b>18</b>	<b>43(2)</b>	<b>3(1)</b>	<b>10</b>	<b>7(1)</b>
<b>INTRODUCED PERENNIAL FORBS</b>								
<i>Breea arvensis</i>	P							
<i>Cardaria chalepensis</i>								
<i>Convolvulus arvensis</i>	17	15		P	21(2)	16(1)	P	P
<i>Hypericum perforatum</i>			P					

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PLANT SPECIES	Percent Foliar Cover*							
	---SAMPLE NUMBER---							
	41	42	43	44	45	46	47	48
<b>INTRODUCED PERENNIAL FORBS (Concluded)</b>								
<i>Linaria genistifolia</i> ssp. <i>dalmatica</i>								
<i>Linaria vulgaris</i>	P							
<i>Lotus tenuis</i>								
<i>Marrubium vulgare</i>	P				P			
<i>Medicago sativa</i>								
<i>Taraxacum officinale</i>	4			P	P	P	1	P
<i>Trifolium pratense</i>								
<i>Trifolium repens</i>								
<i>Verbena bracteata</i>					P	P		
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>21</b>	<b>15</b>	<b>P</b>	<b>P</b>	<b>21(2)</b>	<b>16(1)</b>	<b>1</b>	<b>P</b>
<b>NATIVE PERENNIAL GRASSES (cool)</b>								
<i>Carex douglasii</i>				1				
<i>Carex eleocharis</i>			P					
<i>Carex pensylvanica</i> ssp. <i>heliophila</i>				6				
<i>Carex praegracilis</i>								
<i>Critesion jubatum</i>								
<i>Elymus elymoides</i>								
<i>Elymus longifolius</i>	P							
<i>Elymus trachycaulus</i>								
<i>Hesperostipa comata</i>								P
<i>Juncus arcticus</i> ssp. <i>ater</i>								
<i>Koeleria macrantha</i>			P	1				
<i>Nassella viridula</i>				2		1(1)		
<i>Pascopyrum smithii</i>				1	2(1)	7(1)	7	4
<i>Poa agassizensis</i>			12(2)			4		
<i>Poa compressa</i>			1	5				
<i>Poa secunda</i>				P				
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>P</b>	<b>--</b>	<b>13(2)</b>	<b>16</b>	<b>2(1)</b>	<b>12(2)</b>	<b>7</b>	<b>4</b>
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>								
<i>Agropyron cristatum</i>								
<i>Bromopsis inermis</i>	P							
<i>Dactylis glomerata</i>						P		
<i>Elytrigia repens</i>				2				
<i>Festuca arundinacea</i>						1		
<i>Phleum pratense</i>								
<i>Poa pratensis</i>				21(3)				
<i>Setaria viridis</i>								
<i>Thinopyrum intermedium</i>							1	
<b>TOTAL INTRO. PERENNIAL GRASSES (c)</b>	<b>P</b>	<b>--</b>	<b>--</b>	<b>23(3)</b>	<b>--</b>	<b>1</b>	<b>1</b>	<b>--</b>
<b>NATIVE PERENNIAL GRASSES (warm)</b>								
<i>Andropogon gerardii</i>			1	2				
<i>Aristida purpurea</i>			P			P		
<i>Bouteloua curtipendula</i>								5
<i>Buchloe dactyloides</i>							15	12
<i>Calamovilfa longifolia</i>								
<i>Chondrosum gracile</i>							5(2)	4
<i>Chondrosum hirsutum</i>								
<i>Distichlis spicata</i> ssp. <i>stricta</i>								
<i>Panicum hallii</i>								
<i>Schizachyrium scoparium</i>								
<i>Sporobolus airoides</i>						P		
<i>Sporobolus cryptandrus</i>			4					
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>--</b>	<b>4</b>	<b>1</b>	<b>2</b>	<b>--</b>	<b>P</b>	<b>20(2)</b>	<b>21</b>
<b>NATIVE SUBSHRUBS</b>								
<i>Gutierrezia sarothrae</i>			P	P		P	13	P
<b>TOTAL NATIVE SUBSHRUBS</b>	<b>--</b>	<b>--</b>	<b>P</b>	<b>P</b>	<b>--</b>	<b>P</b>	<b>13</b>	<b>P</b>



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PLANT SPECIES	Percent Foliar Cover*							
	—SAMPLE NUMBER—							
	41	42	43	44	45	46	47	48
<b>NATIVE SHRUBS</b>								
<i>Amorpha nana</i>								
<i>Chrysothamnus nauseosus</i>								1
<i>Crataegus macracantha</i> var. <i>occidentalis</i>						P		
<i>Padus virginiana</i> ssp. <i>melanocarpa</i>								
<i>Rhus aromatica</i> ssp. <i>trilobata</i>								
<i>Rosa sayi</i>			2(1)		P	1		
<i>Symphoricarpos occidentalis</i>								
<i>Yucca glauca</i>		1						P
<b>TOTAL NATIVE SHRUBS</b>	—	1	2(1)	—	P	1	—	1
<b>FERNS</b>								
<i>Hippochaete hyemalis</i> ssp. <i>affinis</i>								
<b>TOTAL FERNS</b>	—	—	—	—	—	—	—	—
<b>BRYOPHYTES</b>								
Moss								
<b>TOTAL BRYOPHYTES</b>	—	—	—	—	—	—	—	—
<b>LICHEN</b>								
<i>Cladonia</i> spp.								
<i>Xanthoparmelia chlorochloa</i>								
<i>Xanthoparmelia wyomingensis</i>					1(1)			
<b>TOTAL LICHEN</b>	—	—	—	—	1(1)	—	—	—
<b>SUCCULENT</b>								
<i>Coryphantha missouriensis</i>								
<i>Coryphantha vivipara</i> var. <i>vivipara</i>								
<i>Echinocereus viridiflorus</i>								
<i>Opuntia fragilis</i>				P			P	P
<i>Opuntia macrorhiza</i>			P	P			P	
<i>Opuntia polyacantha</i>								
<b>TOTAL SUCCULENT</b>	—	—	P	P	—	—	P	P
<b>EPIPHYTE (PARASITE)</b>								
<i>Orobanche multiflora</i>								
<b>TOTAL EPIPHYTE (PARASITE)</b>	—	—	—	—	—	—	—	—
<b>MUSHROOMS</b>								
Fungus							P	
<b>TOTAL MUSHROOMS</b>	—	—	—	—	—	—	P	—
Standing dead		3		3			5	2
Litter	11	31	48	35	6	19	27	60
Bare soil	6		11		22	4	12	3
Rock	2	1	3				1	1
<b>TOTALS</b>	100	100	100	100	100	100	100	100
<b>TOTAL VEGETATION COVER</b>	81(5)	65(6)	38(5)	62(4)	72(8)	77(5)	55(3)	34(1)
<b>GROUND COVER (Litter+Rock+Veg+St. Dead)</b>	94(5)	100(6)	89(5)	100(4)	78(8)	96(5)	88(3)	97(1)
<b>SPECIES DENSITY (# of species/100 sq.m.)</b>	26	14	47	42	17	26	31	43
(AVERAGE= 27.5 Std.Dev.= 11.8)								

Table 2. Cover Data - Occupied Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	AVERAGE		RELATIVE VEGETATION		RELATIVE VEGETATION	
	COVER (%)	FREQUENCY (%)	COVER (%)	COVER-ALL (%)	COVER-ALL (%)	COVER-ALL (%)
<b>NATIVE ANNUAL &amp; BIENNIAL FORBS</b>						
<i>Androsace septentrionalis</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Chamaesyce glyptosperma</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Chenopodium</i> spp.	0.00	4.17	0.00	0.00	0.00	0.00
<i>Cirsium undulatum</i>	0.29	33.33	0.50	0.29	0.47	0.47
<i>Collomia linearis</i>	0.04	4.17	0.07	0.04	0.07	0.07
<i>Dyssodia papposa</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Erigeron divergens</i>	0.08	20.83	0.14	0.08	0.13	0.13
<i>Erysimum asperum</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Evax prolifera</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Gaura parviflora</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Grindelia squarrosa</i>	0.04	16.67	0.07	0.04	0.07	0.07
<i>Oreocarya virgata</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Plantago patagonica</i>	0.83	37.50	1.43	0.83	1.34	1.34
<i>Salvia aethiopsis</i>	0.00	8.33	0.00	0.00	0.00	0.00
<i>Silene antirrhina</i>	0.04	16.67	0.07	0.04	0.07	0.07
<b>TOTAL NATIVE ANN. &amp; BIEN. FORBS</b>	<b>1.3</b>	<b>83.3</b>	<b>2.3</b>	<b>1.3</b>	<b>2.1</b>	<b>2.1</b>
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>						
<i>Acosta diffusa</i>	0.21	25.00	0.36	0.21	0.34	0.34
<i>Alyssum alyssoides</i>	0.21	29.17	0.36	0.21	0.34	0.34
<i>Alyssum minus</i>	1.25	66.67	2.15	1.46	2.35	2.35
<i>Carduus nutans</i> ssp. <i>macrolepis</i>	0.17	25.00	0.29	0.17	0.27	0.27
<i>Chenopodium album</i>	0.00	8.33	0.00	0.00	0.00	0.00
<i>Cirsium vulgare</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Cynoglossum officinale</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Dianthus armeria</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Erodium cicutarium</i>	2.13	45.83	3.65	2.33	3.75	3.75
<i>Lactuca serriola</i>	1.21	8.33	2.08	1.33	2.14	2.14
<i>Lappula redowskii</i>	0.04	12.50	0.07	0.04	0.07	0.07
<i>Lepidium densiflorum</i>	0.08	12.50	0.14	0.13	0.20	0.20
<i>Medicago lupulina</i>	0.04	25.00	0.07	0.04	0.07	0.07
<i>Melilotus officinalis</i>	1.29	20.83	2.22	1.29	2.08	2.08
<i>Plantago lanceolata</i>	0.25	4.17	0.43	0.25	0.40	0.40
<i>Pocilla biloba</i>	0.04	4.17	0.07	0.04	0.07	0.07
<i>Podospermum laciniatum</i>	0.08	12.50	0.14	0.08	0.13	0.13
<i>Polygonum ramosissimum</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Sisymbrium altissimum</i>	0.04	16.67	0.07	0.04	0.07	0.07
<i>Tragopogon dubius</i> ssp. <i>major</i>	0.00	25.00	0.00	0.04	0.07	0.07
<i>Verbascum blattaria</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Verbascum thapsus</i>	0.21	33.33	0.36	0.25	0.40	0.40
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	<b>7.3</b>	<b>100.0</b>	<b>12.5</b>	<b>7.9</b>	<b>12.7</b>	<b>12.7</b>
<b>NATIVE ANNUAL GRASSES</b>						
<i>Critesion pusillum</i>	0.00	8.33	0.00	0.00	0.00	0.00
<i>Schedonnardus paniculatus</i>	0.04	12.50	0.07	0.04	0.07	0.07
<i>Vulpia octoflora</i>	0.00	16.67	0.00	0.00	0.00	0.00
<b>TOTAL NATIVE ANN. GRASSES</b>	<b>0.0</b>	<b>37.5</b>	<b>0.1</b>	<b>0.0</b>	<b>0.1</b>	<b>0.1</b>
<b>INTRODUCED ANNUAL GRASSES</b>						
<i>Anisantha tectorum</i>	7.54	75.00	12.96	7.96	12.80	12.80
<i>Bromus japonicus</i>	0.04	4.17	0.07	0.04	0.07	0.07
<b>TOTAL INTRO. ANN. GRASSES</b>	<b>7.6</b>	<b>75.0</b>	<b>13.0</b>	<b>8.0</b>	<b>12.9</b>	<b>12.9</b>
<b>NATIVE PERENNIAL FORBS</b>						
<i>Acetosella vulgaris</i>	0.04	8.33	0.07	0.04	0.07	0.07
<i>Achillea lanulosa</i>	0.04	12.50	0.07	0.08	0.13	0.13
<i>Adenolinum lewisii</i>	0.29	16.67	0.50	0.29	0.47	0.47

Table 2. Cover Data - Occupied Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	AVERAGE		RELATIVE VEGETATION		RELATIVE VEGETATION	
	COVER (%)	FREQUENCY (%)	COVER (%)	AVERAGE COVER-ALL (%)	COVER-ALL (%)	COVER-ALL (%)
NATIVE PERENNIAL FORBS (continued)						
<i>Allium textile</i>	0.00	16.67	0.00	0.00	0.00	0.00
<i>Ambrosia psilostachya</i> var. <i>coronopifolia</i>	0.67	45.83	1.15	0.79	1.27	1.27
<i>Antennaria corymbosa</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Aphyllon fasciculatum</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Argemone polyanthemus</i>	0.00	8.33	0.00	0.00	0.00	0.00
<i>Arnica fulgens</i>	0.00	8.33	0.00	0.00	0.00	0.00
<i>Artemisia frigida</i>	0.63	50.00	1.07	0.75	1.21	1.21
<i>Artemisia ludoviciana</i>	0.00	12.50	0.00	0.00	0.00	0.00
<i>Asclepias pumila</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Asclepias viridiflora</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Aster laevis</i> var. <i>geyeri</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Aster porteri</i>	0.04	16.67	0.07	0.04	0.07	0.07
<i>Astragalus agrestis</i>	0.13	20.83	0.21	0.17	0.27	0.27
<i>Astragalus crassicaulus</i>	0.08	4.17	0.14	0.08	0.13	0.13
<i>Astragalus drummondii</i>	0.21	4.17	0.36	0.21	0.34	0.34
<i>Astragalus miser</i> var. <i>oblongifolius</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Astragalus shortianus</i>	0.04	8.33	0.07	0.04	0.07	0.07
<i>Astragalus tridactylus</i>	0.00	8.33	0.00	0.00	0.00	0.00
<i>Brickellia eupatorioides</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Calylophus serrulatus</i>	0.00	12.50	0.00	0.00	0.00	0.00
<i>Castilleja sessiliflora</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Cornandra umbellata</i> ssp. <i>pallida</i>	0.08	12.50	0.14	0.08	0.13	0.13
<i>Cucurbita foetidissima</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Cymopterus montanus</i>	0.04	8.33	0.07	0.04	0.07	0.07
<i>Dalea candida</i> var. <i>oligophylla</i>	0.04	8.33	0.07	0.04	0.07	0.07
<i>Dalea purpurea</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Drymocallis fissa</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Eremogone fendleri</i>	0.04	4.17	0.07	0.04	0.07	0.07
<i>Erigeron flagellaris</i>	0.00	8.33	0.00	0.00	0.00	0.00
<i>Eriogonum lonchophyllum</i>	0.00	8.33	0.00	0.00	0.00	0.00
<i>Frasera speciosa</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Gaura coccinea</i>	0.04	33.33	0.07	0.04	0.07	0.07
<i>Glandularia bipinnatifida</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Helianthella uniflora</i>	0.04	4.17	0.07	0.04	0.07	0.07
<i>Heterotheca fulcrata</i>	0.08	8.33	0.14	0.08	0.13	0.13
<i>Heterotheca villosa</i>	0.79	29.17	1.36	0.79	1.27	1.27
<i>Heuchera hallii</i>	0.04	4.17	0.07	0.04	0.07	0.07
<i>Hybanthus verticillatus</i>	0.08	4.17	0.14	0.08	0.13	0.13
<i>Ipomopsis spicata</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Iris missouriensis</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Iva axillaris</i>	0.00	8.33	0.00	0.00	0.00	0.00
<i>Lesquerella montana</i>	0.00	12.50	0.00	0.00	0.00	0.00
<i>Leucocrinum montanum</i>	0.17	25.00	0.29	0.21	0.34	0.34
<i>Liatris punctata</i>	0.04	33.33	0.07	0.08	0.13	0.13
<i>Lithospermum incisum</i>	0.00	16.67	0.00	0.00	0.00	0.00
<i>Lomatium orientale</i>	0.04	16.67	0.07	0.04	0.07	0.07
<i>Lupinus argenteus</i>	0.21	8.33	0.36	0.21	0.34	0.34
<i>Machaeranthera canescens</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Machaeranthera pinnatifida</i>	0.00	8.33	0.00	0.00	0.00	0.00
<i>Mertensia lanceolata</i>	0.00	12.50	0.00	0.00	0.00	0.00
<i>Monarda pectinata</i>	0.04	8.33	0.07	0.04	0.07	0.07
<i>Musineon divaricatum</i>	0.00	12.50	0.00	0.00	0.00	0.00
<i>Nothocalais cuspidata</i>	0.00	8.33	0.00	0.00	0.00	0.00
<i>Oenothera howardii</i>	0.00	8.33	0.00	0.00	0.00	0.00
<i>Oligoneuron rigidum</i>	0.17	12.50	0.29	0.17	0.27	0.27
<i>Oligosporus dracunculus</i> ssp. <i>glaucus</i>	0.00	12.50	0.00	0.00	0.00	0.00
<i>Onosmodium molle</i> ssp. <i>occidentale</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Oxalis dillenii</i>	0.00	4.17	0.00	0.00	0.00	0.00
<i>Oxytropis x sericea</i>	0.04	16.67	0.07	0.04	0.07	0.07
<i>Packera plattensis</i>	0.33	8.33	0.57	0.38	0.60	0.60
<i>Penstemon secundiflorus</i>	0.00	12.50	0.00	0.00	0.00	0.00

Table 2. Cover Data - Occupied Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	AVERAGE COVER (%)	FREQUENCY (%)	RELATIVE VEGETATION COVER (%)	AVERAGE COVER-ALL (%)	RELATIVE VEGETATION COVER-ALL (%)
<b>NATIVE PERENNIAL FORBS (concluded)</b>					
<i>Penstemon strictus</i>	0.04	4.17	0.07	0.04	0.07
<i>Phyla cuneifolia</i>	1.67	8.33	2.86	1.75	2.82
<i>Physalis pumila</i> subsp <i>hispida</i>	0.00	4.17	0.00	0.00	0.00
<i>Psoralea tenuiflorum</i>	0.75	58.33	1.29	0.75	1.21
<i>Quincula lobata</i>	0.00	12.50	0.00	0.00	0.00
<i>Ratibida columnifera</i>	0.04	25.00	0.07	0.04	0.07
<i>Rumex crispus</i>	0.25	16.67	0.43	0.25	0.40
<i>Senecio integerrimus</i>	0.00	12.50	0.00	0.00	0.00
<i>Solanum</i> spp.	0.00	4.17	0.00	0.00	0.00
<i>Solidago missouriensis</i>	0.13	4.17	0.21	0.17	0.27
<i>Sphaeralcea coccinea</i>	0.21	45.83	0.36	0.21	0.34
<i>Thelesperma megapotamicum</i>	0.00	8.33	0.00	0.00	0.00
<i>Tithymalus brachyceras</i>	0.04	20.83	0.07	0.04	0.07
<i>Townsendia exscapa</i>	0.00	4.17	0.00	0.00	0.00
<i>Tradescantia occidentalis</i>	0.00	12.50	0.00	0.00	0.00
<i>Vicia americana</i>	0.00	4.17	0.00	0.00	0.00
<i>Viola nuttallii</i>	0.13	12.50	0.21	0.13	0.20
<i>Virgulus falcatus</i>	0.79	66.67	1.36	0.92	1.47
<b>TOTAL NATIVE PERENNIAL FORBS</b>	<b>8.5</b>	<b>100.0</b>	<b>14.7</b>	<b>9.3</b>	<b>14.9</b>
<b>INTRODUCED PERENNIAL FORBS</b>					
<i>Breua arvensis</i>	0.08	16.67	0.14	0.08	0.13
<i>Cardaria chalepensis</i>	0.42	4.17	0.72	0.42	0.67
<i>Convolvulus arvensis</i>	14.08	83.33	24.19	14.79	23.79
<i>Hypericum perforatum</i>	0.00	16.67	0.00	0.00	0.00
<i>Linaria genistifolia</i> ssp. <i>dalmatica</i>	0.13	4.17	0.21	0.13	0.20
<i>Linaria vulgaris</i>	0.00	4.17	0.00	0.00	0.00
<i>Lotus tenuis</i>	1.38	4.17	2.36	1.38	2.21
<i>Marrubium vulgare</i>	0.00	16.67	0.00	0.00	0.00
<i>Taraxacum officinale</i>	0.29	41.67	0.50	0.29	0.47
<i>Trifolium pratense</i>	0.00	4.17	0.00	0.00	0.00
<i>Trifolium repens</i>	0.00	4.17	0.00	0.00	0.00
<i>Verbena bracteata</i>	0.38	25.00	0.64	0.38	0.60
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>16.8</b>	<b>100.0</b>	<b>28.8</b>	<b>17.5</b>	<b>28.1</b>
<b>NATIVE PERENNIAL GRASSES (cool)</b>					
<i>Carex eleocharis</i>	0.00	8.33	0.00	0.00	0.00
<i>Carex pensylvanica</i> ssp. <i>heliophila</i>	0.29	20.83	0.50	0.33	0.54
<i>Elymus longifolius</i>	0.04	25.00	0.07	0.04	0.07
<i>Hesperostipa comata</i>	0.08	8.33	0.14	0.08	0.13
<i>Koeleria macrantha</i>	0.08	16.67	0.14	0.08	0.13
<i>Pascopyrum smithii</i>	5.38	66.67	9.23	5.96	9.58
<i>Poa agassizensis</i>	1.50	16.67	2.58	1.63	2.61
<i>Poa compressa</i>	0.67	8.33	1.15	0.71	1.14
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>8.0</b>	<b>83.3</b>	<b>13.8</b>	<b>8.8</b>	<b>14.2</b>
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>					
<i>Agropyron cristatum</i>	0.25	4.17	0.43	0.25	0.40
<i>Bromopsis inermis</i>	0.92	25.00	1.57	0.92	1.47
<i>Dactylis glomerata</i>	0.21	8.33	0.36	0.21	0.34
<i>Festuca arundinacea</i>	0.00	4.17	0.00	0.00	0.00
<i>Poa pratensis</i>	0.33	4.17	0.57	0.33	0.54
<i>Setaria viridis</i>	0.00	4.17	0.00	0.00	0.00
<i>Thinopyrum intermedium</i>	0.04	4.17	0.07	0.04	0.07
<b>TOTAL INTRO. PERENNIAL GRASSES (c)</b>	<b>1.8</b>	<b>37.5</b>	<b>3.0</b>	<b>1.8</b>	<b>2.8</b>

Table 2. Cover Data - Occupied Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	AVERAGE COVER (%)	FREQUENCY (%)	RELATIVE VEGETATION COVER (%)	AVERAGE COVER-ALL (%)	RELATIVE VEGETATION COVER-ALL (%)
<b>NATIVE PERENNIAL GRASSES (warm)</b>					
<i>Andropogon gerardii</i>	1.83	20.83	3.15	2.13	3.42
<i>Aristida purpurea</i>	0.17	29.17	0.29	0.17	0.27
<i>Bouteloua curtipendula</i>	0.00	4.17	0.00	0.00	0.00
<i>Buchloe dactyloides</i>	1.50	37.50	2.58	1.58	2.55
<i>Chondrosum gracile</i>	1.00	33.33	1.72	1.17	1.88
<i>Chondrosum hirsutum</i>	0.08	4.17	0.14	0.13	0.20
<i>Distichlis spicata</i> ssp. <i>stricta</i>	0.08	4.17	0.14	0.08	0.13
<i>Panicum hallii</i>	0.00	4.17	0.00	0.00	0.00
<i>Schizachyrium scoparium</i>	0.13	8.33	0.21	0.13	0.20
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>4.8</b>	<b>75.0</b>	<b>8.2</b>	<b>5.4</b>	<b>8.6</b>
<b>NATIVE SUBSHRUBS</b>					
<i>Gutierrezia sarothrae</i>	0.92	50.00	1.57	0.96	1.54
<b>TOTAL NATIVE SUBSHRUBS</b>	<b>0.9</b>	<b>50.0</b>	<b>1.6</b>	<b>1.0</b>	<b>1.5</b>
<b>NATIVE SHRUBS</b>					
<i>Amorpha nana</i>	0.00	4.17	0.00	0.00	0.00
<i>Chrysothamnus nauseosus</i>	0.25	12.50	0.43	0.25	0.40
<i>Rhus aromatica</i> ssp. <i>trilobata</i>	0.04	4.17	0.07	0.04	0.07
<i>Rosa sayi</i>	0.58	25.00	1.00	0.63	1.01
<i>Symphoricarpos occidentalis</i>	0.00	4.17	0.00	0.00	0.00
<i>Yucca glauca</i>	0.33	16.67	0.57	0.33	0.54
<b>TOTAL NATIVE SHRUBS</b>	<b>1.2</b>	<b>45.8</b>	<b>2.1</b>	<b>1.3</b>	<b>2.0</b>
<b>BRYOPHYTES</b>					
Moss	0.00	4.17	0.00	0.00	0.00
<b>TOTAL BRYOPHYTES</b>	<b>0.0</b>	<b>4.2</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>LICHEN</b>					
<i>Xanthoparmelia chlorochloa</i>	0.00	4.17	0.00	0.00	0.00
<b>TOTAL LICHEN</b>	<b>0.0</b>	<b>4.2</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>SUCCULENT</b>					
<i>Echinocereus viridiflorus</i>	0.00	4.17	0.00	0.00	0.00
<i>Opuntia fragilis</i>	0.00	4.17	0.00	0.00	0.00
<i>Opuntia macrorhiza</i>	0.00	25.00	0.00	0.00	0.00
<b>TOTAL SUCCULENT</b>	<b>0.0</b>	<b>25.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>MUSHROOMS</b>					
Fungus	0.00	12.50	0.00	0.00	0.00
<b>TOTAL MUSHROOMS</b>	<b>0.0</b>	<b>12.5</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
Standing dead	1.00	58.33		1.04	
Litter	20.67	100.00		20.67	
Bare soil	18.92	100.00		18.92	
Rock	1.21	58.33		1.21	
<b>TOTALS</b>	<b>100.0</b>			<b>104.0</b>	
<b>TOTAL VEGETATION COVER</b>	<b>58.2 (s=15.7)</b>		<b>100.0</b>	<b>62.2 (s=18.1)</b>	<b>100.0</b>
<b>GROUND COVER (Litter+Rock+Veg+St. Dead)</b>	<b>81.1</b>			<b>85.1</b>	
<b>SPECIES DENSITY (# of species/100 sq.m.)</b>					
<b>(AVERAGE= 24.8 Std.Dev.= 11.1)</b>					

Table 2. Cover Data - Occupied Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	Percent Foliar Cover*									
	—SAMPLE NUMBER—									
	1	3	5	7	9	11	13	15	17	19
<b>NATIVE ANNUAL &amp; BIENNIAL FORBS</b>										
<i>Androsace septentrionalis</i>										P
<i>Chamaesyce glyptosperma</i>										P
<i>Chenopodium</i> spp.										P
<i>Cirsium undulatum</i>				P				P	P	P
<i>Collomia linearis</i>										
<i>Dyssodia papposa</i>										
<i>Erigeron divergens</i>	P	P		1				P	1	
<i>Erysimum asperum</i>				P						
<i>Evax prolifera</i>										
<i>Gaura parviflora</i>									P	
<i>Grindella squarrosa</i>	P	1								
<i>Oreocarya virgata</i>										
<i>Plantago patagonica</i>		3	2				P	P		
<i>Salvia aethiopsis</i>										
<i>Silene antirrhina</i>					P		P	1		
<b>TOTAL NATIVE ANN. &amp; BIEN. FORBS</b>	P	4	2	1	P	—	P	1	1	P
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>										
<i>Acosta diffusa</i>	1		2							P
<i>Alyssum alyssoides</i>		1			P			4		
<i>Alyssum minus</i>	4(1)		1(1)	5	1	1	(1)	4	10	P
<i>Carduus nutans</i> ssp. <i>macrolepis</i>				P		P		P	4	P
<i>Chenopodium album</i>										
<i>Cirsium vulgare</i>										
<i>Cynoglossum officinale</i>										
<i>Dianthus armeria</i>					P					
<i>Erodium cicutarium</i>	1	3	34(4)		P	P	P			
<i>Lactuca serriola</i>								P		
<i>Lappula redowskii</i>										
<i>Lepidium densiflorum</i>	P	2(1)								
<i>Medicago lupulina</i>						P	P			P
<i>Melilotus officinalis</i>										P
<i>Plantago lanceolata</i>						6				
<i>Pocilla biloba</i>										
<i>Podospermum laciniatum</i>				P						1
<i>Polygonum ramosissimum</i>		P								
<i>Sisymbrium altissimum</i>			1				P	P	P	P
<i>Tragopogon dubius</i> ssp. <i>major</i>				P			P	P		P
<i>Verbascum blattaria</i>			P							
<i>Verbascum thapsus</i>			2(1)		2	P	P			
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	6(1)	6(1)	40(6)	5	3	7	(1)	8	14	1
<b>NATIVE ANNUAL GRASSES</b>										
<i>Critesion pusillum</i>					P					
<i>Schedonnardus paniculatus</i>										
<i>Vulpia octoflora</i>	P						P			
<b>TOTAL NATIVE ANN. GRASSES</b>	P	—	—	—	P	—	P	—	—	—
<b>INTRODUCED ANNUAL GRASSES</b>										
<i>Anisantha tectorum</i>	47(1)	24(4)	24(4)	2	3		11	28(1)	4	
<i>Bromus japonicus</i>		1								
<b>TOTAL INTRO. ANN. GRASSES</b>	47(1)	25(4)	24(4)	2	3	—	11	28(1)	4	—
<b>NATIVE PERENNIAL FORBS</b>										
<i>Acetosella vulgaris</i>					P	1				
<i>Achillea lanulosa</i>	1(1)	P			P					
<i>Adenolinum lewisii</i>								7	P	

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PLANT SPECIES	Percent Foliar Cover*									
	---SAMPLE NUMBER---									
	1	3	5	7	9	11	13	15	17	19
NATIVE PERENNIAL FORBS (continued)										
<i>Allium textile</i>		P		P						
<i>Ambrosia psilostachya</i> var. <i>coronopifolia</i>		1		1	1	P	3	2(1)	2	1
<i>Antennaria corymbosa</i>										
<i>Aphyllon fasciculatum</i>							P			
<i>Argemone polyanthemus</i>										
<i>Arnica fulgens</i>	P									
<i>Artemisia frigida</i>	3(2)	4(1)		1	P		4	P	P	
<i>Artemisia ludoviciana</i>			P		P					
<i>Asclepias pumila</i>										
<i>Asclepias viridiflora</i>										
<i>Aster laevis</i> var. <i>geyeri</i>										
<i>Aster porteri</i>								1	P	
<i>Astragalus agrestis</i>				P					P	
<i>Astragalus crassicaarpus</i>										
<i>Astragalus drummondii</i>										
<i>Astragalus miser</i> var. <i>oblongifolius</i>	P									
<i>Astragalus shortianus</i>										P
<i>Astragalus tridactylicus</i>				P						P
<i>Brickellia eupatorioides</i>										
<i>Calylophus serrulatus</i>				P			P		P	
<i>Castilleja sessiliflora</i>				P						
<i>Comandra umbellata</i> ssp. <i>pallida</i>						1	P		1	
<i>Cucurbita foetidissima</i>										
<i>Cymopterus montanus</i>		1			P					
<i>Dalea candida</i> var. <i>oligophylla</i>										
<i>Dalea purpurea</i>										
<i>Drymocallis fissa</i>				P						
<i>Eremogone fendleri</i>										
<i>Erigeron flagellaris</i>						P				
<i>Eriogonum lonchophyllum</i>										P
<i>Frasera speciosa</i>										
<i>Gaura coccinea</i>								P		P
<i>Glandularia bipinnatifida</i>										
<i>Helianthella uniflora</i>										
<i>Heterotheca fulcrata</i>									P	
<i>Heterotheca villosa</i>				12				2	3	1
<i>Heuchera hallii</i>										
<i>Hybanthus verticillatus</i>										
<i>Ipomopsis spicata</i>				P						
<i>Iris missouriensis</i>					P					
<i>Iva axillaris</i>					P					
<i>Lesquerella montana</i>				P			P			
<i>Leucocrinum montanum</i>				1			P	P	1	
<i>Liatrix punctata</i>				P			P	P	1	
<i>Lithospermum incisum</i>					P		P		P	
<i>Lomatium orientale</i>	P			P					P	
<i>Lupinus argenteus</i>	P									
<i>Machaeranthera canescens</i>										
<i>Machaeranthera pinnatifida</i>										P
<i>Mertensia lanceolata</i>										
<i>Monarda pectinata</i>							P		1	
<i>Musineon divaricatum</i>				P						
<i>Nothocalais cuspidata</i>				P			P			
<i>Oenothera howardii</i>								P		
<i>Oligoneuron rigidum</i>								4	P	
<i>Oligosporus dracunculus</i> ssp. <i>glauca</i>		P						P		
<i>Onosmodium molle</i> ssp. <i>occidentale</i>						P				
<i>Oxalis dillenii</i>						P				
<i>Oxytropis x sericea</i>				P						
<i>Packera plattensis</i>										
<i>Penstemon secundiflorus</i>				P						

Table 2. Cover Data - Occupied Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	Percent Foliar Cover*									
	—SAMPLE NUMBER—									
	1	3	5	7	9	11	13	15	17	19
<b>NATIVE PERENNIAL FORBS (concluded)</b>										
<i>Penstemon strictus</i>										
<i>Phyla cuneifolia</i>			P							
<i>Physalis pumila</i> subsp. <i>hispida</i>										P
<i>Psoraleidium tenuiflorum</i>				P	P		1	2	4	8
<i>Quincula lobata</i>										
<i>Ratibida columnifera</i>				P				P	P	
<i>Rumex crispus</i>			P							
<i>Senecio integerrimus</i>									P	
<i>Solanum</i> spp.								P		
<i>Solidago missouriensis</i>										3(1)
<i>Sphaeralcea coccinea</i>	P							P		
<i>Thelesperma megapotamicum</i>				P						
<i>Tithymalus brachyceras</i>				P				P	P	
<i>Townsendia exscapa</i>				P						
<i>Tradescantia occidentalis</i>	P						P			
<i>Vicia americana</i>	P									
<i>Viola nuttallii</i>				P					P	
<i>Virgulus falcatus</i>	4	4(3)				P	P		3	P 1
<b>TOTAL NATIVE PERENNIAL FORBS</b>	<b>8(3)</b>	<b>10(4)</b>	<b>P</b>	<b>15</b>	<b>1</b>	<b>2</b>	<b>8</b>	<b>14(1)</b>	<b>20</b>	<b>14(1)</b>
<b>INTRODUCED PERENNIAL FORBS</b>										
<i>Brea arvensis</i>							1			
<i>Cardaria chalepensis</i>										
<i>Convolvulus arvensis</i>			10(8)	1		2	1	6(2)	2	6
<i>Hypericum perforatum</i>	P	P		P						
<i>Linaria genistifolia</i> ssp. <i>dalmatica</i>							3			
<i>Linaria vulgaris</i>										
<i>Lotus tenuis</i>						33				
<i>Marrubium vulgare</i>										
<i>Taraxacum officinale</i>	P			P	P			P	P	
<i>Trifolium pratense</i>						P				
<i>Trifolium repens</i>						P				
<i>Verbena bracteata</i>										
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>P</b>	<b>P</b>	<b>10(8)</b>	<b>1</b>	<b>P</b>	<b>36</b>	<b>4</b>	<b>6(2)</b>	<b>2</b>	<b>6</b>
<b>NATIVE PERENNIAL GRASSES (cool)</b>										
<i>Carex eleocharis</i>				P						
<i>Carex pennsylvanica</i> ssp. <i>heliophila</i>	P			3	P		3(1)			1
<i>Elymus longifolius</i>				P	P		P		1	P
<i>Hesperostipa comata</i>				P			2			
<i>Koeleria macrantha</i>	P			1			1			
<i>Pascopyrum smithii</i>	9(6)	8(1)		P	3(1)	1		P		4
<i>Poa agassizensis</i>	P				24(1)			P		
<i>Poa compressa</i>					15(1)					
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>9(6)</b>	<b>8(1)</b>	<b>—</b>	<b>4</b>	<b>42(3)</b>	<b>1</b>	<b>6(1)</b>	<b>P</b>	<b>1</b>	<b>5</b>
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>										
<i>Agropyron cristatum</i>										
<i>Bromopsis inermis</i>	P					P				16
<i>Dactylis glomerata</i>					P	5				
<i>Festuca arundinacea</i>	P									
<i>Poa pratensis</i>						8				
<i>Setaria viridis</i>							P			
<i>Thinopyrum intermedium</i>										
<b>TOTAL INTRO. PERENNIAL GRASSES (c)</b>	<b>P</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>P</b>	<b>13</b>	<b>P</b>	<b>—</b>	<b>—</b>	<b>16</b>



Table 2. Cover Data - Occupied Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	Percent Foliar Cover*									
	—SAMPLE NUMBER—									
	1	3	5	7	9	11	13	15	17	19
<b>NATIVE PERENNIAL GRASSES (warm)</b>										
<i>Andropogon gerardii</i>				2	12(3)		27(3)		2(1)	
<i>Aristida purpurea</i>			P	P					1	P
<i>Bouteloua curtipendula</i>							P			
<i>Buchloe dactyloides</i>	P			4(1)			2		P	4
<i>Chondrosum gracile</i>		1		5				9(2)	P	
<i>Chondrosum hirsutum</i>			2(1)							
<i>Distichlis spicata</i> ssp. <i>stricta</i>										
<i>Panicum hallii</i>						P				
<i>Schizachyrium scoparium</i>				3			P			
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>P</b>	<b>1</b>	<b>2(1)</b>	<b>14(1)</b>	<b>12(3)</b>	<b>P</b>	<b>29(3)</b>	<b>9(2)</b>	<b>3(1)</b>	<b>4</b>
<b>NATIVE SUBSHRUBS</b>										
<i>Gutierrezia sarothrae</i>	P			P	P		P	3	2	3(1)
<b>TOTAL NATIVE SUBSHRUBS</b>	<b>P</b>	<b>—</b>	<b>—</b>	<b>P</b>	<b>P</b>	<b>—</b>	<b>P</b>	<b>3</b>	<b>2</b>	<b>3(1)</b>
<b>NATIVE SHRUBS</b>										
<i>Amorpha nana</i>						P				
<i>Chrysothamnus nauseosus</i>		1							5	
<i>Rhus aromatica</i> ssp. <i>trilobata</i>										
<i>Rosa sayi</i>			P					3		9
<i>Symphoricarpos occidentalis</i>						P				
<i>Yucca glauca</i>							P		7	
<b>TOTAL NATIVE SHRUBS</b>	<b>—</b>	<b>1</b>	<b>P</b>	<b>—</b>	<b>P</b>	<b>—</b>	<b>P</b>	<b>3</b>	<b>12</b>	<b>9</b>
<b>BRYOPHYTES</b>										
Moss		P								
<b>TOTAL BRYOPHYTES</b>	<b>—</b>	<b>P</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>
<b>LICHEN</b>										
<i>Xanthoparmelia chlorochloa</i>						P				
<b>TOTAL LICHEN</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>P</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>
<b>SUCCULENT</b>										
<i>Echinocereus viridiflorus</i>				P						
<i>Opuntia fragilis</i>										
<i>Opuntia macrorhiza</i>				P				P		
<b>TOTAL SUCCULENT</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>P</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>P</b>	<b>—</b>	<b>—</b>
<b>MUSHROOMS</b>										
Fungus		P								
<b>TOTAL MUSHROOMS</b>	<b>—</b>	<b>P</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>
Standing dead	1(1)			2	1	1	1	5	1	1
Litter	26	20	13	43	26	27	34	17	30	37
Bare soil	3	24	9	11	11	11	4	6	7	4
Rock		1		2	1	2	3		3	
<b>TOTALS</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>TOTAL VEGETATION COVER</b>	<b>70(11)</b>	<b>55(10)</b>	<b>78(19)</b>	<b>42(1)</b>	<b>61(6)</b>	<b>59</b>	<b>58(5)</b>	<b>72(6)</b>	<b>59(1)</b>	<b>58(2)</b>
<b>GROUND COVER (Litter+Rock+Veg+St. Dead)</b>	<b>97(12)</b>	<b>76(10)</b>	<b>91(19)</b>	<b>89(1)</b>	<b>89(6)</b>	<b>89</b>	<b>96(5)</b>	<b>94(6)</b>	<b>93(1)</b>	<b>96(2)</b>
<b>SPECIES DENSITY (# of species/100 sq.m.)</b> (AVERAGE= 24.8 Std.Dev.= 11.1)	<b>28</b>	<b>22</b>	<b>15</b>	<b>49</b>	<b>33</b>	<b>21</b>	<b>36</b>	<b>34</b>	<b>42</b>	<b>26</b>

\*P= Present within 1 m. on either side of the cover transect, but not quantitatively encountered.







Table 2. Cover Data - Occupied Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	Percent Foliar Cover*									
	---SAMPLE NUMBER---									
	21	23	25	27	29	31	33	35	37	
<b>NATIVE PERENNIAL GRASSES (warm)</b>										
<i>Andropogon gerardii</i>										
<i>Aristida purpurea</i>								2	1	
<i>Bouteloua curtipendula</i>										
<i>Buchloe dactyloides</i>		P				11	(1)			
<i>Chondrosum gracile</i>		3		P		1				
<i>Chondrosum hirsutum</i>										
<i>Distichlis spicata</i> ssp. <i>stricta</i>								2		
<i>Panicum hallii</i>										
<i>Schizachyrium scoparium</i>										
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	--	3	--	P	--	12	2(1)	2	1	
<b>NATIVE SUBSHRUBS</b>										
<i>Gutierrezia sarothrae</i>				P			P			
<b>TOTAL NATIVE SUBSHRUBS</b>	--	--	--	P	--	--	P	--	--	
<b>NATIVE SHRUBS</b>										
<i>Amorpha nana</i>										
<i>Chrysothamnus nauseosus</i>										
<i>Rhus aromatica</i> ssp. <i>trilobata</i>										
<i>Rosa sayi</i>										
<i>Symphoricarpos occidentalis</i>										
<i>Yucca glauca</i>		1								
<b>TOTAL NATIVE SHRUBS</b>	--	1	--	--	--	--	--	--	--	
<b>BRYOPHYTES</b>										
Moss										
<b>TOTAL BRYOPHYTES</b>	--	--	--	--	--	--	--	--	--	
<b>LICHEN</b>										
<i>Xanthoparmelia chlorochloa</i>										
<b>TOTAL LICHEN</b>	--	--	--	--	--	--	--	--	--	
<b>SUCCULENT</b>										
<i>Echinocereus viridiflorus</i>										
<i>Opuntia fragilis</i>										
<i>Opuntia macrorhiza</i>						P				
<b>TOTAL SUCCULENT</b>	--	--	--	--	--	P	--	--	--	
<b>MUSHROOMS</b>										
Fungus								P		
<b>TOTAL MUSHROOMS</b>	--	--	--	--	--	--	--	P	--	
Standing dead				1		1	1		1	
Litter	5	1	14	12	20	19	10	21	15	
Bare soil	45	24	18	19	16	17	28	25	73	
Rock		1			1	6			2	
<b>TOTALS</b>	100	100	100	100	100	100	100	100	100	
<b>TOTAL VEGETATION COVER</b>	50(1)	74(1)	68(3)	68(3)	63	57	61(3)	54(1)	9	
<b>GROUND COVER (Litter+Rock+Veg+St.Dead)</b>	55(1)	76(1)	82(3)	81(3)	84	83	72(3)	75(1)	27	
<b>SPECIES DENSITY (# of species/100 sq.m.)</b>	11	21	7	17	15	13	20	19	16	
(AVERAGE= 24.8 Std.Dev.= 11.1)										

Table 2. Cover Data - Occupied Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	Percent Foliar Cover*				
	---SAMPLE NUMBER---				
	39	41	43	45	47
<b>NATIVE ANNUAL &amp; BIENNIAL FORBS</b>					
<i>Androsace septentrionalis</i>			P		
<i>Chamaesyce glyptosperma</i>					
<i>Chenopodium</i> spp.					
<i>Cirsium undulatum</i>		7	P		P
<i>Collomia linearis</i>			1		
<i>Dyssodia papposa</i>					
<i>Erigeron divergens</i>					
<i>Erysimum asperum</i>					
<i>Evax prolifera</i>					
<i>Gaura parviflora</i>					
<i>Grindelia squarrosa</i>			P		P
<i>Oreocarya virgata</i>			P		
<i>Plantago patagonica</i>				1	
<i>Salvia aethiopsis</i>					P
<i>Silene antirrhina</i>			P		
<b>TOTAL NATIVE ANN. &amp; BIEN. FORBS</b>	--	7	1	1	P
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>					
<i>Acosta diffusa</i>	P	1			
<i>Alyssum alyssoides</i>	P	P			P
<i>Alyssum minus</i>	P	P	P	3(2)	1
<i>Carduus nutans</i> ssp. <i>macrolepis</i>					
<i>Chenopodium album</i>					
<i>Cirsium vulgare</i>					P
<i>Cynoglossum officinale</i>				P	
<i>Dianthus armeria</i>					
<i>Erodium cicutarium</i>				1(1)	
<i>Lactuca serriola</i>		29(3)			
<i>Lappula redowskii</i>					
<i>Lepidium densiflorum</i>					
<i>Medicago lupulina</i>					
<i>Melilotus officinalis</i>	P	1			
<i>Plantago lanceolata</i>					
<i>Pocilla biloba</i>					
<i>Podospermum laciniatum</i>					1
<i>Polygonum ramosissimum</i>					
<i>Sisymbrium altissimum</i>					
<i>Tragopogon dubius</i> ssp. <i>major</i>		P			(1)
<i>Verbascum blattaria</i>					
<i>Verbascum thapsus</i>		P			
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	P	31(3)	P	4(3)	2(1)
<b>NATIVE ANNUAL GRASSES</b>					
<i>Critesion pusillum</i>		P			
<i>Schedonnardus paniculatus</i>					
<i>Vulpia octoflora</i>			P		
<b>TOTAL NATIVE ANN. GRASSES</b>	--	P	P	--	--
<b>INTRODUCED ANNUAL GRASSES</b>					
<i>Anisantha tectorum</i>		9	2	1	1
<i>Bromus japonicus</i>					
<b>TOTAL INTRO. ANN. GRASSES</b>	--	9	2	1	1
<b>NATIVE PERENNIAL FORBS</b>					
<i>Acetosella vulgaris</i>					
<i>Achillea lanulosa</i>					
<i>Adenolinum lewisii</i>		P			P

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PLANT SPECIES	Percent Foliar Cover*				
	—SAMPLE NUMBER—				
	39	41	43	45	47
NATIVE PERENNIAL FORBS (continued)					
Allium textile			P		
Ambrosia psilostachya var. coronopifolia	1	4(2)	P		
Antennaria corymbosa			P		
Aphyllon fasciculatum					
Argemone polyanthemus	P				
Arnica fulgens			P		
Artemisia frigida			1		2
Artemisia ludoviciana				P	
Asclepias pumila					
Asclepias viridiflora		P			
Aster laevis var. geyeri				P	
Aster porteri			P		
Astragalus agrestis		P	P		
Astragalus crassicaulus		2			
Astragalus drummondii					5
Astragalus miser var. oblongifolius					
Astragalus shortianus			1		
Astragalus tridactylus					
Brickellia eupatorioides	P				
Calylophus serrulatus					
Castilleja sessiliflora					
Comandra umbellata ssp. pallida					
Cucurbita foetidissima					
Cymopterus montanus					
Dalea candida var. oligophylla	1				
Dalea purpurea					
Drymocallis fissa					
Eremogone fendleri			1		
Erigeron flagellaris					
Eriogonum lonchophyllum					
Frasera speciosa			P		
Gaura coccinea	P				P
Glandularia bipinnatifida					
Helianthella uniflora	1				
Heterotheca fulcrata			2		
Heterotheca villosa	1				
Heuchera hallii			1		
Hybanthus verticillatus	2				
Ipomopsis spicata					
Iris missouriensis					
Iva axillaris					
Lesquerella montana			P		
Leucocrinum montanum			2(1)		
Liatris punctata			(1)		
Lithospermum incisum					
Lomatium orientale			1		
Lupinus argenteus			5		
Machaeranthera canescens					
Machaeranthera pinnatifida	P				
Mertensia lanceolata		P	P		
Monarda pectinata					
Musineon divaricatum					P
Nothocalais cuspidata					
Oenothera howardii	P				
Oligoneuron rigidum			P		
Oligosporus dracunculus ssp. glaucus					P
Onosmodium molle ssp. occidentale					
Oxalis dillenii					
Oxytropis x sericea			1		P
Packera plattensis					
Penstemon secundiflorus	P		P		

PLANT SPECIES	Percent Foliar Cover*				
	---SAMPLE NUMBER---				
	39	41	43	45	47
<b>NATIVE PERENNIAL FORBS (concluded)</b>					
Penstemon strictus					
Phyla cuneifolia			40(2)		
Physalis pumila subsp hispida					
Psoraleidum tenuiflorum	P	2	1	P	
Quincula lobata	P				P
Ratibida columnifera	P		P		1
Rumex crispus		3		3	
Senecio integerrimus			P		
Solanum spp.					
Solidago missouriensis					
Sphaeralcea coccinea	P				P
Thelesperma megapotamicum	P				
Tithymalus brachyceras			P		1
Townsendia exscapa					
Tradescantia occidentalis			P		
Vicia americana					
Viola nuttallii			3		
Virgulus falcatus		2	P	P	1
<b>TOTAL NATIVE PERENNIAL FORBS</b>	<b>6</b>	<b>13(2)</b>	<b>19(2)</b>	<b>43(2)</b>	<b>10</b>
<b>INTRODUCED PERENNIAL FORBS</b>					
Breea arvensis		P			
Cardaria chalepensis					
Convolvulus arvensis	17(1)	17		21(2)	P
Hypericum perforatum			P		
Linaria genistifolia ssp. dalmatica					
Linaria vulgaris		P			
Lotus tenuis					
Marrubium vulgare		P		P	
Taraxacum officinale		4		P	1
Trifolium pratense					
Trifolium repens					
Verbena bracteata				P	
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>17(1)</b>	<b>21</b>	<b>P</b>	<b>21(2)</b>	<b>1</b>
<b>NATIVE PERENNIAL GRASSES (cool)</b>					
Carex eleocharis			P		
Carex pensylvanica ssp. heliophila					
Elymus longifolius		P			
Hesperostipa comata					
Koeleria macrantha			P		
Pascopyrum smithii				2(1)	7
Poa agassizensis			12(2)		
Poa compressa			1		
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>—</b>	<b>P</b>	<b>13(2)</b>	<b>2(1)</b>	<b>7</b>
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>					
Agropyron cristatum	6				
Bromopsis inermis	4	P			
Dactylis glomerata					
Festuca arundinacea					
Poa pratensis					
Setaria viridis					
Thinopyrum intermedium					1
<b>TOTAL INTRO. PERENNIAL GRASSES (c)</b>	<b>10</b>	<b>P</b>	<b>—</b>	<b>—</b>	<b>1</b>



PLANT SPECIES	Percent Foliar Cover*				
	---SAMPLE NUMBER---				
	39	41	43	45	47
<b>NATIVE PERENNIAL GRASSES (warm)</b>					
<i>Andropogon gerardii</i>			1		
<i>Aristida purpurea</i>			P		
<i>Bouteloua curtipendula</i>					
<i>Buchloe dactyloides</i>					15
<i>Chondrosum gracile</i>					5(2)
<i>Chondrosum hirsutum</i>					
<i>Distichlis spicata</i> ssp. <i>stricta</i>					
<i>Panicum hallii</i>					
<i>Schizachyrium scoparium</i>					
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	--	--	1	--	20(2)
<b>NATIVE SUBSHRUBS</b>					
<i>Gutierrezia sarothrae</i>	1		P		13
<b>TOTAL NATIVE SUBSHRUBS</b>	1	--	P	--	13
<b>NATIVE SHRUBS</b>					
<i>Amorpha nana</i>					
<i>Chrysothamnus nauseosus</i>	P				
<i>Rhus aromatica</i> ssp. <i>trilobata</i>	1				
<i>Rosa sayi</i>	P		2(1)	P	
<i>Symphoricarpos occidentalis</i>					
<i>Yucca glauca</i>	P				
<b>TOTAL NATIVE SHRUBS</b>	1	--	2(1)	P	--
<b>BRYOPHYTES</b>					
Moss					
<b>TOTAL BRYOPHYTES</b>	--	--	--	--	--
<b>LICHEN</b>					
<i>Xanthoparmelia chlorochloa</i>					
<b>TOTAL LICHEN</b>	--	--	--	--	--
<b>SUCCULENT</b>					
<i>Echinocereus viridiflorus</i>					
<i>Opuntia fragilis</i>					P
<i>Opuntia macrorhiza</i>	P		P		P
<b>TOTAL SUCCULENT</b>	P	--	P	--	P
<b>MUSHROOMS</b>					
Fungus					P
<b>TOTAL MUSHROOMS</b>	--	--	--	--	P
Standing dead	2				5
Litter	14	11	48	6	27
Bare soil	48	6	11	22	12
Rock	1	2	3		1
<b>TOTALS</b>	100	100	100	100	100
<b>TOTAL VEGETATION COVER</b>	35(1)	81(5)	38(5)	72(8)	55(3)
<b>GROUND COVER (Litter+Rock+Veg+St.Dead)</b>	52(1)	94(5)	89(5)	78(8)	88(3)
<b>SPECIES DENSITY (# of species/100 sq.m.)</b>	29	26	47	17	31
(AVERAGE= 24.8 Std.Dev.= 11.1)					

Table 3. Cover Data - Unoccupied Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	AVERAGE COVER (%)	FREQUENCY (%)	RELATIVE VEGETATION COVER (%)	AVERAGE COVER-ALL (%)	RELATIVE VEGETATION COVER-ALL (%)
<b>NATIVE ANNUAL &amp; BIENNIAL FORBS</b>					
<i>Androsace septentrionalis</i>	0.00	4.35	0.00	0.00	0.00
<i>Chamaesyce glyptosperma</i>	0.00	4.35	0.00	0.00	0.00
<i>Cirsium undulatum</i>	0.00	34.78	0.00	0.00	0.00
<i>Collinsia parviflora</i>	0.00	4.35	0.00	0.00	0.00
<i>Descurainia incana</i>	0.00	4.35	0.00	0.00	0.00
<i>Draba</i> spp.	0.00	4.35	0.00	0.00	0.00
<i>Erigeron divergens</i>	0.35	39.13	0.71	0.43	0.84
<i>Erysimum asperum</i>	0.00	21.74	0.00	0.00	0.00
<i>Gaura parviflora</i>	0.00	4.35	0.00	0.00	0.00
<i>Grindelia squarrosa</i>	0.04	26.09	0.09	0.04	0.08
<i>Oligosporus pacificus</i>	0.00	4.35	0.00	0.00	0.00
<i>Oreocarya virgata</i>	0.00	8.70	0.00	0.00	0.00
<i>Plantago patagonica</i>	0.00	13.04	0.00	0.00	0.00
<i>Pterogonum alatum</i>	0.00	8.70	0.00	0.00	0.00
<i>Silene antirrhina</i>	0.00	8.70	0.00	0.00	0.00
<i>Tithymalus spathulatus</i>	0.00	4.35	0.00	0.00	0.00
<b>TOTAL NATIVE ANN. &amp; BIEN. FORBS</b>	<b>0.4</b>	<b>73.9</b>	<b>0.8</b>	<b>0.5</b>	<b>0.9</b>
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>					
<i>Acosta diffusa</i>	0.35	34.78	0.71	0.35	0.67
<i>Alyssum alyssoides</i>	0.09	21.74	0.18	0.09	0.17
<i>Alyssum minus</i>	0.52	56.52	1.07	0.65	1.26
<i>Camelina microcarpa</i>	0.04	26.09	0.09	0.04	0.08
<i>Carduus nutans</i> ssp. <i>macrolepis</i>	0.00	21.74	0.00	0.00	0.00
<i>Cirsium vulgare</i>	0.00	4.35	0.00	0.00	0.00
<i>Cynoglossum officinale</i>	0.00	4.35	0.00	0.00	0.00
<i>Descurainia</i> spp.	0.00	4.35	0.00	0.00	0.00
<i>Dipsacus sylvestris</i>	0.04	4.35	0.09	0.04	0.08
<i>Erodium cicutarium</i>	0.70	21.74	1.42	0.78	1.51
<i>Lactuca serriola</i>	0.04	34.78	0.09	0.04	0.08
<i>Lappula redowskii</i>	0.00	4.35	0.00	0.00	0.00
<i>Lepidium densiflorum</i>	0.00	26.09	0.00	0.00	0.00
<i>Medicago lupulina</i>	0.09	17.39	0.18	0.09	0.17
<i>Melilotus officinalis</i>	0.30	8.70	0.62	0.30	0.59
<i>Neolepia campestre</i>	0.04	8.70	0.09	0.04	0.08
<i>Plantago lanceolata</i>	0.00	13.04	0.00	0.04	0.08
<i>Podospermum laciniatum</i>	0.09	34.78	0.18	0.09	0.17
<i>Sisymbrium altissimum</i>	0.00	8.70	0.00	0.00	0.00
<i>Thlaspi arvense</i>	0.00	4.35	0.00	0.00	0.00
<i>Tragopogon dubius</i> ssp. <i>major</i>	0.35	73.91	0.71	0.39	0.75
<i>Verbascum blattaria</i>	0.09	4.35	0.18	0.09	0.17
<i>Verbascum thapsus</i>	1.30	8.70	2.67	1.57	3.01
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	<b>4.0</b>	<b>91.3</b>	<b>8.3</b>	<b>4.6</b>	<b>8.9</b>
<b>NATIVE ANNUAL GRASSES</b>					
<i>Critesion pusillum</i>	0.22	8.70	0.45	0.22	0.42
<i>Schedonnardus paniculatus</i>	0.00	4.35	0.00	0.00	0.00
<i>Vulpia octoflora</i>	0.04	21.74	0.09	0.04	0.08
<b>TOTAL NATIVE ANN. GRASSES</b>	<b>0.3</b>	<b>30.4</b>	<b>0.5</b>	<b>0.3</b>	<b>0.5</b>
<b>INTRODUCED ANNUAL GRASSES</b>					
<i>Anisantha tectorum</i>	6.09	69.57	12.47	6.17	11.88
<i>Bromus japonicus</i>	0.09	17.39	0.18	0.09	0.17
<i>Cylindropyrum cylindricum</i>	0.00	4.35	0.00	0.00	0.00
<i>Hordeum vulgare</i>	0.00	4.35	0.00	0.00	0.00
<i>Poa bulbosa</i>	0.13	4.35	0.27	0.13	0.25
<b>TOTAL INTRO. ANN. GRASSES</b>	<b>6.3</b>	<b>82.6</b>	<b>12.9</b>	<b>6.4</b>	<b>12.3</b>

Table 3. Cover Data - Unoccupied Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	AVERAGE		RELATIVE	AVERAGE	RELATIVE
	COVER	FREQUENCY	VEGETATION	COVER-ALL	VEGETATION
	(%)	(%)	(%)	(%)	(%)
NATIVE PERENNIAL FORBS					
<i>Achillea lanulosa</i>	0.04	4.35	0.09	0.04	0.08
<i>Adenolinum lewisii</i>	0.17	26.09	0.36	0.17	0.33
<i>Agoseris glauca</i>	0.00	8.70	0.00	0.00	0.00
<i>Allium textile</i>	0.00	13.04	0.00	0.00	0.00
<i>Ambrosia psilostachya</i> var. <i>coronopifolia</i>	1.26	52.17	2.58	1.35	2.59
<i>Antennaria rosea</i>	0.00	8.70	0.00	0.00	0.00
<i>Antennaria</i> spp.	0.09	4.35	0.18	0.09	0.17
<i>Aphyllon fasciculatum</i>	0.00	8.70	0.00	0.00	0.00
<i>Argemone polyanthemos</i>	0.00	8.70	0.00	0.00	0.00
<i>Arnica fulgens</i>	0.22	8.70	0.45	0.22	0.42
<i>Artemisia frigida</i>	0.17	52.17	0.36	0.22	0.42
<i>Artemisia ludoviciana</i>	0.09	39.13	0.18	0.09	0.17
<i>Asclepias viridiflora</i>	0.00	13.04	0.00	0.00	0.00
<i>Aster porteri</i>	0.00	21.74	0.00	0.00	0.00
<i>Astragalus agrestis</i>	0.00	13.04	0.00	0.00	0.00
<i>Astragalus drummondii</i>	0.00	8.70	0.00	0.00	0.00
<i>Astragalus miser</i> var. <i>oblongifolius</i>	0.04	4.35	0.09	0.04	0.08
<i>Astragalus shortianus</i>	0.00	13.04	0.00	0.00	0.00
<i>Calylophus serrulatus</i>	0.00	8.70	0.00	0.00	0.00
<i>Castilleja sessiliflora</i>	0.00	8.70	0.00	0.00	0.00
<i>Comandra umbellata</i> ssp. <i>pallida</i>	0.00	13.04	0.00	0.00	0.00
<i>Cymopterus montanus</i>	0.00	13.04	0.00	0.04	0.08
<i>Dalea candida</i> var. <i>oiligophylla</i>	0.00	8.70	0.00	0.00	0.00
<i>Dalea purpurea</i>	0.00	13.04	0.00	0.00	0.00
<i>Epilobium ciliatum</i>	0.35	8.70	0.71	0.35	0.67
<i>Eremogone fendleri</i>	0.00	4.35	0.00	0.00	0.00
<i>Erigeron canus</i>	0.00	4.35	0.00	0.00	0.00
<i>Erigeron flagellaris</i>	0.00	4.35	0.00	0.00	0.00
<i>Erigeron pumilus</i>	0.00	4.35	0.00	0.00	0.00
<i>Eriogonum lonchophyllum</i>	0.00	4.35	0.00	0.00	0.00
<i>Evolvulus nuttalianus</i>	0.04	4.35	0.09	0.04	0.08
<i>Gaillardia aristata</i>	0.00	4.35	0.00	0.00	0.00
<i>Gastrolychnis drummondii</i>	0.00	4.35	0.00	0.00	0.00
<i>Gaura coccinea</i>	0.04	52.17	0.09	0.04	0.08
<i>Glandularia bipinnatifida</i>	0.00	4.35	0.00	0.00	0.00
<i>Helianthus rigidus</i> ssp. <i>subrhomboideus</i>	0.04	13.04	0.09	0.04	0.08
<i>Heterotheca fulcrata</i>	0.04	4.35	0.09	0.04	0.08
<i>Heterotheca villosa</i>	0.48	47.83	0.98	0.52	1.00
<i>Hymenopappus filifolius</i> var. <i>polycephalus</i>	0.00	4.35	0.00	0.00	0.00
<i>Ipomopsis spicata</i>	0.00	4.35	0.00	0.00	0.00
<i>Lesquerella montana</i>	0.00	26.09	0.00	0.00	0.00
<i>Leucocrinum montanum</i>	0.09	17.39	0.18	0.09	0.17
<i>Liatris punctata</i>	0.13	26.09	0.27	0.13	0.25
<i>Lithospermum incisum</i>	0.00	4.35	0.00	0.00	0.00
<i>Lomatium orientale</i>	0.00	4.35	0.00	0.00	0.00
<i>Lomatium</i> spp.	0.00	4.35	0.00	0.00	0.00
<i>Lygodesmia juncea</i>	0.00	4.35	0.00	0.00	0.00
<i>Machaeranthera pinnatifida</i>	0.00	13.04	0.00	0.00	0.00
<i>Mertensia lanceolata</i>	0.00	8.70	0.00	0.00	0.00
<i>Musineon divaricatum</i>	0.00	8.70	0.00	0.00	0.00
<i>Nothocalais cuspidata</i>	0.00	4.35	0.00	0.00	0.00
<i>Oenothera howardii</i>	0.00	21.74	0.00	0.00	0.00
<i>Oligoneuron rigidum</i>	0.17	8.70	0.36	0.17	0.33
<i>Oligosporus dracunculus</i> ssp. <i>glaucus</i>	0.13	34.78	0.27	0.13	0.25
<i>Onosmodium molle</i> ssp. <i>occidentale</i>	0.00	8.70	0.00	0.00	0.00

Table 3. Cover Data - Unoccupied Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	AVERAGE	FREQUENCY	RELATIVE	AVERAGE	RELATIVE
	COVER		VEGETATION	COVER-ALL	VEGETATION
	(%)	(%)	(%)	(%)	(%)
<b>NATIVE PERENNIAL FORBS (concluded)</b>					
<i>Orobanche ludoviciana</i>	0.00	4.35	0.00	0.00	0.00
<i>Oxalis dillenii</i>	0.00	8.70	0.00	0.00	0.00
<i>Oxybaphus linearis</i>	0.00	4.35	0.00	0.00	0.00
<i>Oxybaphus nyctagineus</i>	0.00	8.70	0.00	0.00	0.00
<i>Oxytropis x sericea</i>	0.13	30.43	0.27	0.17	0.33
<i>Penstemon linarioides</i> subsp. <i>coloradoensis</i>	0.00	4.35	0.00	0.00	0.00
<i>Penstemon secundiflorus</i>	0.00	26.09	0.00	0.00	0.00
<i>Physaria bellii</i>	0.00	4.35	0.00	0.00	0.00
<i>Psilochenia occidentalis</i>	0.04	4.35	0.09	0.04	0.08
<i>Psoralidium tenuiflorum</i>	1.52	82.61	3.12	1.52	2.93
<i>Ratibida columnifera</i>	0.13	39.13	0.27	0.13	0.25
<i>Rumex crispus</i>	0.00	4.35	0.00	0.00	0.00
<i>Senecio spartioides</i>	0.00	17.39	0.00	0.00	0.00
<i>Silene scouleri</i> ssp. <i>hallii</i>	0.04	4.35	0.09	0.04	0.08
<i>Sphaeralcea coccinea</i>	0.00	26.09	0.00	0.00	0.00
<i>Thelesperma megapotamicum</i>	0.04	30.43	0.09	0.04	0.08
<i>Tithymalus brachyceras</i>	0.00	17.39	0.00	0.00	0.00
<i>Townsendia hookeri</i>	0.00	4.35	0.00	0.00	0.00
<i>Tradescantia occidentalis</i>	0.00	4.35	0.00	0.00	0.00
<i>Vicia americana</i>	0.00	13.04	0.00	0.00	0.00
<i>Viola nuttallii</i>	0.00	26.09	0.00	0.04	0.08
<i>Virgulus falcatus</i>	0.78	56.52	1.60	0.83	1.59
<b>TOTAL NATIVE PERENNIAL FORBS</b>	<b>6.3</b>	<b>95.7</b>	<b>12.9</b>	<b>6.7</b>	<b>12.8</b>
<b>INTRODUCED PERENNIAL FORBS</b>					
<i>Brea arvensis</i>	0.13	4.35	0.27	0.13	0.25
<i>Cardaria chalapensis</i>	0.04	8.70	0.09	0.04	0.08
<i>Convolvulus arvensis</i>	3.91	69.57	8.01	4.22	8.12
<i>Medicago sativa</i>	0.09	8.70	0.18	0.09	0.17
<i>Taraxacum officinale</i>	0.00	34.78	0.00	0.00	0.00
<i>Verbena bracteata</i>	0.00	4.35	0.00	0.00	0.00
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>4.2</b>	<b>78.3</b>	<b>8.5</b>	<b>4.5</b>	<b>8.6</b>
<b>NATIVE PERENNIAL GRASSES (cool)</b>					
<i>Carex douglasii</i>	0.04	4.35	0.09	0.04	0.08
<i>Carex eleocharis</i>	0.00	4.35	0.00	0.00	0.00
<i>Carex pensylvanica</i> ssp. <i>heliophila</i>	1.30	43.48	2.67	1.39	2.68
<i>Carex praegracilis</i>	0.30	4.35	0.62	0.30	0.59
<i>Critesion jubatum</i>	0.00	4.35	0.00	0.00	0.00
<i>Elymus elymoides</i>	0.00	4.35	0.00	0.00	0.00
<i>Elymus longifolius</i>	0.04	26.09	0.09	0.04	0.08
<i>Elymus trachycaulus</i>	0.09	8.70	0.18	0.09	0.17
<i>Hesperostipa comata</i>	1.74	39.13	3.56	1.96	3.77
<i>Juncus arcticus</i> ssp. <i>ater</i>	0.00	4.35	0.00	0.00	0.00
<i>Koeleria macrantha</i>	0.78	39.13	1.60	0.78	1.51
<i>Nassella viridula</i>	0.48	21.74	0.98	0.57	1.09
<i>Pascopyrum smithii</i>	5.00	73.91	10.24	5.30	10.21
<i>Poa agassizensis</i>	4.48	47.83	9.17	4.70	9.04
<i>Poa compressa</i>	1.09	34.78	2.23	1.13	2.18
<i>Poa secunda</i>	0.00	8.70	0.00	0.00	0.00
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>15.3</b>	<b>91.3</b>	<b>31.4</b>	<b>16.3</b>	<b>31.4</b>

Table 3. Cover Data - Unoccupied Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	AVERAGE COVER (%)	FREQUENCY (%)	RELATIVE VEGETATION COVER (%)	AVERAGE COVER-ALL (%)	RELATIVE VEGETATION COVER-ALL (%)
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>					
<i>Agropyron cristatum</i>	0.74	13.04	1.51	0.74	1.42
<i>Bromopsis inermis</i>	0.83	26.09	1.69	0.83	1.59
<i>Dactylis glomerata</i>	0.39	17.39	0.80	0.39	0.75
<i>Elytrigia repens</i>	0.09	4.35	0.18	0.09	0.17
<i>Festuca arundinacea</i>	0.04	8.70	0.09	0.04	0.08
<i>Phleum pratense</i>	0.00	4.35	0.00	0.00	0.00
<i>Poa pratensis</i>	1.26	13.04	2.58	1.39	2.68
<i>Thinopyrum intermedium</i>	0.13	4.35	0.27	0.13	0.25
<b>TOTAL INTRO. PERENNIAL GRASSES (c)</b>	<b>3.5</b>	<b>56.5</b>	<b>7.1</b>	<b>3.6</b>	<b>6.9</b>
<b>NATIVE PERENNIAL GRASSES (warm)</b>					
<i>Andropogon gerardii</i>	2.00	34.78	4.10	2.13	4.10
<i>Aristida purpurea</i>	0.26	34.78	0.53	0.26	0.50
<i>Bouteloua curtipendula</i>	0.26	13.04	0.53	0.26	0.50
<i>Buchloe dactyloides</i>	1.96	43.48	4.01	2.17	4.18
<i>Calamovilfa longifolia</i>	0.00	4.35	0.00	0.00	0.00
<i>Chondrosum gracile</i>	1.74	43.48	3.56	1.91	3.68
<i>Schizachyrium scoparium</i>	0.17	17.39	0.36	0.17	0.33
<i>Sporobolus airoides</i>	0.00	8.70	0.00	0.00	0.00
<i>Sporobolus cryptandrus</i>	0.17	8.70	0.36	0.17	0.33
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>6.6</b>	<b>82.6</b>	<b>13.4</b>	<b>7.1</b>	<b>13.6</b>
<b>NATIVE SUBSHRUBS</b>					
<i>Gutierrezia sarothrae</i>	0.61	52.17	1.25	0.65	1.26
<b>TOTAL NATIVE SUBSHRUBS</b>	<b>0.6</b>	<b>52.2</b>	<b>1.2</b>	<b>0.7</b>	<b>1.3</b>
<b>NATIVE SHRUBS</b>					
<i>Amorpha nana</i>	0.00	4.35	0.00	0.00	0.00
<i>Chrysothamnus nauseosus</i>	0.17	17.39	0.36	0.17	0.33
<i>Crataegus macracantha</i> var. <i>occidentalis</i>	0.00	4.35	0.00	0.00	0.00
<i>Padus virginiana</i> ssp. <i>melanocarpa</i>	0.00	4.35	0.00	0.00	0.00
<i>Rosa sayi</i>	0.22	30.43	0.45	0.22	0.42
<i>Yucca glauca</i>	0.61	30.43	1.25	0.65	1.26
<b>TOTAL NATIVE SHRUBS</b>	<b>1.0</b>	<b>52.2</b>	<b>2.0</b>	<b>1.0</b>	<b>2.0</b>
<b>FERNS</b>					
<i>Hippochaete hyemalis</i> ssp. <i>affinis</i>	0.00	4.35	0.00	0.00	0.00
<b>TOTAL FERNS</b>	<b>0.0</b>	<b>4.3</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>BRYOPHYTES</b>					
<i>Moss</i>	0.00	4.35	0.00	0.00	0.00
<b>TOTAL BRYOPHYTES</b>	<b>0.0</b>	<b>4.3</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>LICHEN</b>					
<i>Cladonia</i> spp.	0.09	8.70	0.18	0.09	0.17
<i>Xanthoparmelia chlorochloa</i>	0.09	4.35	0.18	0.09	0.17
<i>Xanthoparmelia wyomingensis</i>	0.04	4.35	0.09	0.09	0.17
<b>TOTAL LICHEN</b>	<b>0.2</b>	<b>17.4</b>	<b>0.4</b>	<b>0.3</b>	<b>0.5</b>

Table 3. Cover Data - Unoccupied Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	AVERAGE COVER (%)	FREQUENCY (%)	RELATIVE VEGETATION COVER (%)	AVERAGE COVER-ALL (%)	RELATIVE VEGETATION COVER-ALL (%)
SUCCULENT					
<i>Coryphantha missouriensis</i>	0.00	4.35	0.00	0.00	0.00
<i>Coryphantha vivipara</i> var. <i>vivipara</i>	0.00	4.35	0.00	0.00	0.00
<i>Echinocereus viridiflorus</i>	0.04	13.04	0.09	0.04	0.08
<i>Opuntia fragilis</i>	0.04	30.43	0.09	0.04	0.08
<i>Opuntia macrorhiza</i>	0.04	47.83	0.09	0.04	0.08
<i>Opuntia polyacantha</i>	0.00	13.04	0.00	0.00	0.00
<b>TOTAL SUCCULENT</b>	<b>0.1</b>	<b>65.2</b>	<b>0.3</b>	<b>0.1</b>	<b>0.3</b>
EPIPHYTE (PARASITE)					
<i>Orobanche multiflora</i>	0.00	4.35	0.00	0.00	0.00
<b>TOTAL EPIPHYTE (PARASITE)</b>	<b>0.0</b>	<b>4.3</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
MUSHROOMS					
Fungus	0.00	8.70	0.00	0.00	0.00
<b>TOTAL MUSHROOMS</b>	<b>0.0</b>	<b>8.7</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
Standing dead	1.74	52.17		1.74	
Litter	40.74	100.00		40.74	
Bare soil	7.57	82.61		7.57	
Rock	1.13	52.17		1.13	
TOTALS	100.0			103.1	
<b>TOTAL VEGETATION COVER</b>	<b>48.8 (s=16.6)</b>		<b>100.0</b>	<b>52.0 (s=19.0)</b>	<b>100.0</b>
<b>GROUND COVER (Litter+Rock+Veg+St. Dead)</b>	<b>92.4</b>			<b>95.6</b>	
SPECIES DENSITY (# of species/100 sq.m.) (AVERAGE= 30.3 Std.Dev.= 12.0)					

Table 3. Cover Data - Unoccupied Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	Percent Foliar Cover*											
	---SAMPLE NUMBER---											
	2	4	6	8	10	14	16	18	20	22	24	26
<b>NATIVE ANNUAL &amp; BIENNIAL FORBS</b>												
<i>Androsace septentrionalis</i>												P
<i>Chamaesyce glyptosperma</i>												P
<i>Cirsium undulatum</i>	P			P		P					P	P
<i>Collinsia parviflora</i>		P										
<i>Descurainia incana</i>												
<i>Draba</i> spp.	P											
<i>Erigeron divergens</i>		1	P	P	1	1	4	1(2)				
<i>Erysimum asperum</i>	P			P							P	
<i>Gaura parviflora</i>			P									
<i>Grindelia squarrosa</i>	1	P		P		P						P
<i>Oligosporus pacificus</i>												P
<i>Oreocarya virgata</i>							P	P				
<i>Plantago patagonica</i>												
<i>Pterogonum alatum</i>				P			P					
<i>Silene antirrhina</i>								P				
<i>Tithymalus spathulatus</i>												
<b>TOTAL NATIVE ANN. &amp; BIEN. FORBS</b>	1	1	P	P	1	1	4	1(2)	--	--	P	P
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>												
<i>Acosta diffusa</i>			P		1				2		P	
<i>Alyssum alyssoides</i>				2					P			
<i>Alyssum minus</i>		1	P	3(1)	P	3(1)		1	P			P
<i>Camelina microcarpa</i>		P		P			P					
<i>Carduus nutans</i> ssp. <i>macrolepis</i>									P			P
<i>Cirsium vulgare</i>									P			
<i>Cynoglossum officinale</i>												
<i>Descurainia</i> spp.									P			
<i>Dipsacus sylvestris</i>												
<i>Erodium cicutarium</i>			11(2)			P						
<i>Lactuca serriola</i>		P	P			P	P	P			P	
<i>Lappula redowskii</i>												
<i>Lepidium densiflorum</i>					P	P		P	P			
<i>Medicago lupulina</i>						P			P	P		
<i>Melilotus officinalis</i>									1			6
<i>Neolepia campestre</i>		1										
<i>Plantago lanceolata</i>					P	P						
<i>Podospermum laciniatum</i>		2					P	P	P	P	P	
<i>Sisymbrium altissimum</i>												P
<i>Thlaspi arvense</i>												
<i>Tragopogon dubius</i> ssp. <i>major</i>		1	P	4	P	1	P	P	P	P	P	
<i>Verbascum blattaria</i>			2									
<i>Verbascum thapsus</i>			P									
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	--	5	13(2)	9(1)	1	4(1)	P	1	3	P	P	6
<b>NATIVE ANNUAL GRASSES</b>												
<i>Critesion pusillum</i>		P										
<i>Schedonnardus paniculatus</i>									P			
<i>Vulpia octoflora</i>							P				P	
<b>TOTAL NATIVE ANN. GRASSES</b>	--	P	--	--	--	--	P	--	--	P	--	--
<b>INTRODUCED ANNUAL GRASSES</b>												
<i>Anisantha tectorum</i>		5	33				6(1)	(1)	6		5	P
<i>Bromus japonicus</i>				1	P							
<i>Cylindropyrum cylindricum</i>			P									
<i>Hordeum vulgare</i>												
<i>Poa bulbosa</i>		3										
<b>TOTAL INTRO. ANN. GRASSES</b>	--	8	33	1	P		6(1)	(1)	6	--	5	P

Table 3. Cover Data - Unoccupied Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	Percent Foliar Cover*											
	—SAMPLE NUMBER—											
	2	4	6	8	10	14	16	18	20	22	24	26
NATIVE PERENNIAL FORBS												
<i>Achillea lanulosa</i>												
<i>Adenolinum lewisii</i>					P	P		3	1			
<i>Agoseris glauca</i>		P										
<i>Allium textile</i>	P	P										
<i>Ambrosia psilostachya</i> var. <i>coronopifolia</i>		10(1)	1	1	2	5(1)	4	1	1			
<i>Antennaria rosea</i>	P											
<i>Antennaria</i> spp.	2											
<i>Aphyllon fasciculatum</i>												P
<i>Argemone polyanthemus</i>												
<i>Arnica fulgens</i>		P										
<i>Artemisia frigida</i>		P		1	P	1	P	P			(1)	P
<i>Artemisia ludoviciana</i>	P		P		1		P	P				
<i>Asclepias viridiflora</i>							P	P				
<i>Aster porteri</i>	P		P					P				P
<i>Astragalus agrestis</i>								P				P
<i>Astragalus drummondii</i>												
<i>Astragalus miser</i> var. <i>oblongifolius</i>								P				
<i>Astragalus shortianus</i>								P				
<i>Calylophus serrulatus</i>								P	P			
<i>Castilleja sessiliflora</i>				P			P					
<i>Comandra umbellata</i> ssp. <i>pallida</i>	P											P
<i>Cymopterus montanus</i>	P	(1)		P								
<i>Dalea candida</i> var. <i>oligophylla</i>												
<i>Dalea purpurea</i>							P					P
<i>Epilobium ciliatum</i>		7								1		
<i>Eremogone fendleri</i>												
<i>Erigeron canus</i>												P
<i>Erigeron flagellaris</i>												
<i>Erigeron pumilus</i>				P								
<i>Eriogonum lonchophyllum</i>												
<i>Evolvulus nuttalianus</i>												
<i>Gaillardia aristata</i>							P					
<i>Gastrolychnis drummondii</i>												P
<i>Gaura coccinea</i>		P		P	P	P	P	P	P		P	P
<i>Glandularia bipinnatifida</i>												
<i>Helianthus rigidus</i> ssp. <i>subrhomboides</i>												P
<i>Heterotheca fulcrata</i>								1				
<i>Heterotheca villosa</i>			P	4(1)		P	2	1	P		3	
<i>Hymenopappus filifolius</i> var. <i>polycephalus</i>												
<i>Ipomopsis spicata</i>												
<i>Lesquerella montana</i>	P			P		P	P					P
<i>Leucocrinum montanum</i>	P					P						1
<i>Liatris punctata</i>	P			P			1				P	2
<i>Lithospermum incisum</i>					P							
<i>Lomatium orientale</i>	P											
<i>Lomatium</i> spp.									P			
<i>Lygodesmia juncea</i>												
<i>Machaeranthera pinnatifida</i>												P
<i>Mertensia lanceolata</i>												
<i>Musineon divaricatum</i>												
<i>Nothocalais cuspidata</i>								P				
<i>Oenothera howardii</i>								P				P
<i>Oligoneuron rigidum</i>							3		1			
<i>Oligosporus dracunculus</i> ssp. <i>glaucus</i>		1						P			P	P
<i>Onosmodium molle</i> ssp. <i>occidentale</i>					P							



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PLANT SPECIES	Percent Foliar Cover*											
	—SAMPLE NUMBER—											
	2	4	6	8	10	14	16	18	20	22	24	26
<b>NATIVE PERENNIAL FORBS (concluded)</b>												
<i>Orobanche ludoviciana</i>								P				
<i>Oxalis dillenii</i>					P							
<i>Oxybaphus linearis</i>						P						
<i>Oxybaphus nyctagineus</i>			P									
<i>Oxytropis x sericea</i>						P	P		1		1	
<i>Penstemon linarioides</i> subsp. <i>coloradoensis</i>												P
<i>Penstemon secundiflorus</i>					P	P						
<i>Physaria bellii</i>												
<i>Psilochenia occidentalis</i>												
<i>Psoralidium tenuiflorum</i>	P	1	P	P	P	11	8	3	P		6	2
<i>Ratibida columnifera</i>	P	P		2	P	P	1	P	P			
<i>Rumex crispus</i>												
<i>Senecio spartioides</i>						P		P			P	
<i>Silene scouleri</i> ssp. <i>hallii</i>		1										
<i>Sphaeralcea coccinea</i>								P			P	
<i>Thelesperma megapotamicum</i>				P		P	P	P			1	P
<i>Tithymalus brachyceras</i>					P			P				
<i>Townsendia hookeri</i>				P								
<i>Tradescantia occidentalis</i>		P										
<i>Vicia americana</i>							P					
<i>Viola nuttallii</i>				(1)		P		P				
<i>Virgulus falcatus</i>	2	2		1		P	1	1	P			
<b>TOTAL NATIVE PERENNIAL FORBS</b>	<b>4</b>	<b>22(2)</b>	<b>1</b>	<b>9(2)</b>	<b>3</b>	<b>20(1)</b>	<b>18</b>	<b>10</b>	<b>3</b>	<b>1</b>	<b>12(1)</b>	<b>4</b>
<b>INTRODUCED PERENNIAL FORBS</b>												
<i>Breua arvensis</i>										3		
<i>Cardaria chalapensis</i>			1							P		
<i>Convolvulus arvensis</i>			10(5)			2		4	2	P		3
<i>Medicago sativa</i>									1	1		
<i>Taraxacum officinale</i>		P				P	P	P	P			
<i>Verbena bracteata</i>												
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>—</b>	<b>P</b>	<b>11(5)</b>	<b>—</b>	<b>—</b>	<b>2</b>	<b>P</b>	<b>4</b>	<b>3</b>	<b>4</b>	<b>—</b>	<b>3</b>
<b>NATIVE PERENNIAL GRASSES (cool)</b>												
<i>Carex douglasii</i>												
<i>Carex eleocharis</i>							P					
<i>Carex pensylvanica</i> ssp. <i>heliophila</i>	5	P		2	P	1	4(1)					9
<i>Carex praegracilis</i>										7		
<i>Critesion jubatum</i>												
<i>Elymus elymoides</i>				P								
<i>Elymus longifolius</i>					P	P		1				P
<i>Elymus trachycaulus</i>												1
<i>Hesperostipa comata</i>				9(2)	P	13(2)			P		10(1)	P
<i>Juncus arcticus</i> ssp. <i>ater</i>										P		
<i>Koeleria macrantha</i>	12	P		3		1	P	P				P
<i>Nassella viridula</i>	1	2(1)	5									
<i>Pascopyrum smithii</i>	1	3	1		1(1)		3	2	1	7(2)		
<i>Poa agassizensis</i>	2		19(4)	P	34		1			22	1	
<i>Poa compressa</i>	4	3			3		8(1)		P		2	
<i>Poa secunda</i>		P										
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>25</b>	<b>8(1)</b>	<b>25(4)</b>	<b>14(2)</b>	<b>38(1)</b>	<b>15(2)</b>	<b>16(2)</b>	<b>3</b>	<b>1</b>	<b>36(2)</b>	<b>23(1)</b>	<b>P</b>



Table 3. Cover Data - Unoccupied Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	Percent Foliar Cover*											
	—SAMPLE NUMBER—											
	2	4	6	8	10	14	16	18	20	22	24	26
<b>SUCCULENT</b>												
<i>Coryphantha missouriensis</i>							P					
<i>Coryphantha vivipara</i> var. <i>vivipara</i>				P								
<i>Echinocereus viridiflorus</i>						P						
<i>Opuntia fragilis</i>	P	P					P	P			1	
<i>Opuntia macrorhiza</i>	P	1	P	P	P	P	P					P
<i>Opuntia polyacantha</i>												P
<b>TOTAL SUCCULENT</b>	P	1	P	P	P	P	P	P	—	—	1	P
<b>EPIPHYTE (PARASITE)</b>												
<i>Orobanche multiflora</i>						P						
<b>TOTAL EPIPHYTE (PARASITE)</b>	—	—	—	—	—	P	—	—	—	—	—	—
<b>MUSHROOMS</b>												
Fungus						P		P				
<b>TOTAL MUSHROOMS</b>	—	—	—	—	—	P	—	P	—	—	—	—
Standing dead	11	1		3	1			5	2	1		
Litter	43	40	14	42	53	26	40	23	27	56	54	25
Bare soil	3	2		2	2	3	9	4	25		1	54
Rock					1	4	1	5	2		1	
<b>TOTALS</b>	100	100	100	100	100	100	100	100	100	100	100	100
<b>TOTAL VEGETATION COVER</b>	43(1)	57(6)	86(11)	53(5)	43(1)	67(7)	50(5)	63(2)	44(1)	43(2)	44(2)	21
<b>GROUND COVER (Litter+Rock+Veg+St. Dead)</b>	97(1)	98(6)	100(11)	98(5)	98(1)	97(7)	91(5)	96(2)	75(1)	100(2)	99(2)	46
<b>SPECIES DENSITY (# of species/100 sq.m.)</b> (AVERAGE= 30.3 Std.Dev.= 12.0)	32	38	28	38	32	51	44	47	31	13	41	26

\*P= Present within 1 m. on either side of the cover transect, but not quantitatively encountered.

Table 3. Cover Data - Unoccupied Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	Percent Foliar Cover*										
	—SAMPLE NUMBER—										
	28	30	32	34	36	38	40	42	44	46	48
<b>NATIVE ANNUAL &amp; BIENNIAL FORBS</b>											
<i>Androsace septentrionalis</i>				P							
<i>Chamaesyce glyptosperma</i>											
<i>Cirsium undulatum</i>	P								P		P
<i>Collinsia parviflora</i>											
<i>Descurainia incana</i>			P								
<i>Draba</i> spp.											
<i>Erigeron divergens</i>		P							P		
<i>Erysimum asperum</i>									P		P
<i>Gaura parviflora</i>											
<i>Grindelia squarrosa</i>		P							P		
<i>Oligosporus pacificus</i>											
<i>Oreocarya virgata</i>											
<i>Plantago patagonica</i>		P	P	P							
<i>Pterogonum alatum</i>											
<i>Silene antirrhina</i>					P						
<i>Tithymalus spathulatus</i>					P						
<b>TOTAL NATIVE ANN. &amp; BIEN. FORBS</b>	P	P	P	P	P	—	—	—	P	—	P
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>											
<i>Acosta diffusa</i>			P				P	1		4	
<i>Alyssum alyssoides</i>		P		P							P
<i>Alyssum minus</i>	1	P		P				P		3(1)	
<i>Camelina microcarpa</i>		P		P					1		
<i>Carduus nutans</i> ssp. <i>macrolepis</i>								P		P	P
<i>Cirsium vulgare</i>											
<i>Cynoglossum officinale</i>										P	
<i>Descurainia</i> spp.											
<i>Dipsacus sylvestris</i>				1							
<i>Erodium cicutarium</i>			3	1						1	
<i>Lactuca serriola</i>		P						1			
<i>Lappula redowskii</i>					P						
<i>Lepidium densiflorum</i>		P	P								
<i>Medicago lupulina</i>				2							
<i>Melilotus officinalis</i>											
<i>Neolepia campestre</i>									P		
<i>Plantago lanceolata</i>			(1)								
<i>Podospermum laciniatum</i>		P									P
<i>Sisymbrium altissimum</i>								P			
<i>Thlaspi arvense</i>											P
<i>Tragopogon dubius</i> ssp. <i>major</i>	P	(1)	P					P	P	1	1
<i>Verbascum blattaria</i>											
<i>Verbascum thapsus</i>								30(6)			
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	1	(1)	3(1)	4	P	—	P	32(6)	1	9(1)	1
<b>NATIVE ANNUAL GRASSES</b>											
<i>Critesion pusillum</i>		5									
<i>Schedonnardus paniculatus</i>											
<i>Vulpia octoflora</i>	P	P	1								
<b>TOTAL NATIVE ANN. GRASSES</b>	P	5	1	—	—	—	—	—	—	—	—
<b>INTRODUCED ANNUAL GRASSES</b>											
<i>Anisantha tectorum</i>	8	14	8	4	2	1		13		35	P
<i>Bromus japonicus</i>						P			1		
<i>Cylindropyrum cylindricum</i>											
<i>Hordeum vulgare</i>		P									
<i>Poa bulbosa</i>											
<b>TOTAL INTRO. ANN. GRASSES</b>	8	14	8	4	2	1	—	13	1	35	P



Table 3. Cover Data - Unoccupied Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

13 of 15

PLANT SPECIES	Percent Foliar Cover*										
	—SAMPLE NUMBER—										
	28	30	32	34	36	38	40	42	44	46	48
<b>NATIVE PERENNIAL FORBS (concluded)</b>											
<i>Orobanche ludoviciana</i>											
<i>Oxalis dillenii</i>			P								
<i>Oxybaphus linearis</i>											
<i>Oxybaphus nyctagineus</i>										P	
<i>Oxytropis x sericea</i>	P						P				1(1)
<i>Penstemon linarioides</i> subsp. <i>coloradoensis</i>											
<i>Penstemon secundiflorus</i>	P					P	P				P
<i>Physaria bellii</i>							P				
<i>Psilochenia occidentalis</i>									1		
<i>Psoralidium tenuiflorum</i>	1	1				P	P	P	1	P	1
<i>Ratibida columnifera</i>											P
<i>Rumex crispus</i>										P	
<i>Senecio spartioides</i>	P										
<i>Silene scouleri</i> ssp. <i>hallii</i>											
<i>Sphaeralcea coccinea</i>	P	P					P				P
<i>Thelesperma megapotamicum</i>	P										
<i>Tithymalus brachyceras</i>			P						P		
<i>Townsendia hookeri</i>											
<i>Tradescantia occidentalis</i>											
<i>Vicia americana</i>							P		P		
<i>Viola nuttallii</i>	P								P		P
<i>Virgulus falcatus</i>	P			P			P	P	9	2(1)	
<b>TOTAL NATIVE PERENNIAL FORBS</b>	<b>4</b>	<b>3</b>	<b>1</b>	<b>P</b>	<b>—</b>	<b>P</b>	<b>2</b>	<b>P</b>	<b>18</b>	<b>3(1)</b>	<b>7(1)</b>
<b>INTRODUCED PERENNIAL FORBS</b>											
<i>Breua arvensis</i>											
<i>Cardaria chalepensis</i>											
<i>Convolvulus arvensis</i>	1		2	21	7(1)	P	7	15	P	16(1)	P
<i>Medicago sativa</i>											
<i>Taraxacum officinale</i>									P	P	P
<i>Verbena bracteata</i>										P	
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>1</b>	<b>—</b>	<b>2</b>	<b>21</b>	<b>7(1)</b>	<b>P</b>	<b>7</b>	<b>15</b>	<b>P</b>	<b>16(1)</b>	<b>P</b>
<b>NATIVE PERENNIAL GRASSES (cool)</b>											
<i>Carex douglasii</i>									1		
<i>Carex eleocharis</i>											
<i>Carex pensylvanica</i> ssp. <i>heliophila</i>			1		2(1)				6		
<i>Carex praegracilis</i>											
<i>Critesion jubatum</i>			P								
<i>Elymus elymoides</i>											
<i>Elymus longifolius</i>	P	P									
<i>Elymus trachycaulus</i>			1								
<i>Hesperostipa comata</i>	8	P									P
<i>Juncus arcticus</i> ssp. <i>ater</i>											
<i>Koeleria macrantha</i>	1								1		
<i>Nassella viridula</i>									2	1(1)	
<i>Pascopyrum smithii</i>	2	11(1)	2	23(2)	32	14			1	7(1)	4
<i>Poa agassizensis</i>			15(1)	3	2					4	
<i>Poa compressa</i>		P							5		
<i>Poa secunda</i>									P		
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>11</b>	<b>11(1)</b>	<b>19(1)</b>	<b>26(2)</b>	<b>36(1)</b>	<b>14</b>	<b>—</b>	<b>—</b>	<b>16</b>	<b>12(2)</b>	<b>4</b>

Table 3. Cover Data - Unoccupied Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	Percent Foliar Cover*										
	—SAMPLE NUMBER—										
	28	30	32	34	36	38	40	42	44	46	48
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>											
<i>Agropyron cristatum</i>							15				
<i>Bromopsis inermis</i>		1	P				3				
<i>Dactylis glomerata</i>										P	
<i>Elytrigia repens</i>									2		
<i>Festuca arundinacea</i>			P							1	
<i>Phleum pratense</i>											
<i>Poa pratensis</i>									21(3)		
<i>Thinopyrum intermedium</i>											
<b>TOTAL INTRO. PERENNIAL GRASSES (c)</b>	—	1	P	—	—	—	18	—	23(3)	1	—
<b>NATIVE PERENNIAL GRASSES (warm)</b>											
<i>Andropogon gerardii</i>	P								2		
<i>Aristida purpurea</i>							P			P	
<i>Bouteloua curtipendula</i>	1										5
<i>Buchloe dactyloides</i>	2	16(4)				4	1				12
<i>Calamovilfa longifolia</i>							P				
<i>Chondrosium gracile</i>	P					2					4
<i>Schizachyrium scoparium</i>											
<i>Sporobolus airoides</i>										P	
<i>Sporobolus cryptandrus</i>								4			
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	3	16(4)	—	—	—	6	1	4	2	P	21
<b>NATIVE SUBSHRUBS</b>											
<i>Gutierrezia sarothrae</i>	1						P		P	P	P
<b>TOTAL NATIVE SUBSHRUBS</b>	1	—	—	—	—	—	P	—	P	P	P
<b>NATIVE SHRUBS</b>											
<i>Amorpha nana</i>											
<i>Chrysothamnus nauseosus</i>						1					1
<i>Crataegus macracantha</i> var. <i>occidentalis</i>										P	
<i>Padus virginiana</i> ssp. <i>melanocarpa</i>											
<i>Rosa sayi</i>						P				1	
<i>Yucca glauca</i>	5(1)							1			P
<b>TOTAL NATIVE SHRUBS</b>	5(1)	—	—	—	—	1	—	1	—	1	1
<b>FERNS</b>											
<i>Hippochaete hyemalis</i> ssp. <i>affinis</i>											
<b>TOTAL FERNS</b>	—	—	—	—	—	—	—	—	—	—	—
<b>BRYOPHYTES</b>											
Moss		P									
<b>TOTAL BRYOPHYTES</b>	—	P	—	—	—	—	—	—	—	—	—
<b>LICHEN</b>											
<i>Cladonia</i> spp.											
<i>Xanthoparmelia chlorochloa</i>		2									
<i>Xanthoparmelia wyomingensis</i>									1(1)		
<b>TOTAL LICHEN</b>	—	2	—	—	—	—	—	—	1(1)	—	—

Table 3. Cover Data - Unoccupied Sites, City of Boulder Open Space Prairie Dog Study, CO - June 1998

PLANT SPECIES	Percent Foliar Cover*										
	---SAMPLE NUMBER---										
	28	30	32	34	36	38	40	42	44	46	48
SUCCULENT											
<i>Coryphantha missouriensis</i>											
<i>Coryphantha vivipara</i> var. <i>vivipara</i>											
<i>Echinocereus viridiflorus</i>	P	1									
<i>Opuntia fragilis</i>									P		P
<i>Opuntia macrorhiza</i>	P	P							P		
<i>Opuntia polyacantha</i>	P					P					
TOTAL SUCCULENT	P	1	--	--	--	P	--	--	P	--	P
EPIPHYTE (PARASITE)											
<i>Orobanche multiflora</i>											
TOTAL EPIPHYTE (PARASITE)	--	--	--	--	--	--	--	--	--	--	--
MUSHROOMS											
Fungus											
TOTAL MUSHROOMS	--	--	--	--	--	--	--	--	--	--	--
Standing dead	4	4						3	3		2
Litter	57	30	65	34	54	55	54	31	35	19	60
Bare soil	2	12	1	11	1	19	16			4	3
Rock	3	1					4	2	1		1
TOTALS	100	100	100	100	100	100	100	100	100	100	100
TOTAL VEGETATION COVER	34(1)	53(6)	34(2)	55(2)	45(2)	22	28	65(6)	62(4)	77(5)	34(1)
GROUND COVER (Litter+Rock+Veg+St. Dead)	98(1)	88(6)	99(2)	89(2)	99(2)	81	84	100(6)	100(4)	96(5)	97(1)
SPECIES DENSITY (# of species/100 sq.m.) (AVERAGE= 30.3 Std.Dev.= 12.0)	36	30	21	13	8	17	27	14	42	26	43



Table 4. Species Present - All Sites, Boulder City Open Space Prairie Dog Study, CO - June 1998

LATIN NAME	COMMON NAME	SAMPLE NUMBER																	
		1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19
<b>NATIVE ANNUAL &amp; BIENNIAL FORBS</b>																			
<i>Androsace septentrionalis</i>	PYGMYFLOWER ROCKJASMINE																		
<i>Chamaesyce glyptosperma</i>	RIDGESEED SPURGE																		X
<i>Chenopodium</i> spp.	GOOSEFOOT																		
<i>Cirsium undulatum</i>	WAVYLEAF THISTLE	X					X												
<i>Collinsia parviflora</i>	BABY BLUE-EYES			X															
<i>Collomia linearis</i>	LINEARLEAF COLLOMIA																		
<i>Descurainia incana</i>	RICHARDSON TANSYMUSTARD																		
<i>Draba</i> spp.	WHITLOWWORT	X																	
<i>Dyssodia papposa</i>	FETID MARGOLD																		
<i>Erigeron divergens</i>	SPREADING FLEABANE	X				X		X		X									
<i>Erysimum asperum</i>	WALLFLOWER		X																
<i>Evax prolifera</i>	RABBIT-TOBACCO																		
<i>Gaura parviflora</i>	WILLOW GAURA						X												
<i>Grindelia squarrosa</i>	GUMWEED	X	X	X				X					X						
<i>Oligosporus pacificus</i>	SAGEWORT																		
<i>Oreocarya virgata</i>	MINER'S CANDLE														X				
<i>Plantago patagonica</i>	WOOLLY PLANTAIN		X			X					X								
<i>Pterogonum alatum</i>	WINGED BUCKWHEAT							X											
<i>Salvia aethiops</i>	MEDITERRANEAN SAGE																		
<i>Silene antirrhina</i>	SLEEPY CATCHFLY								X				X					X	
<i>Tithymalus spathulatus</i>	PRAIRIE SPURGE																		
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>																			
<i>Acosta diffusa</i>	TUMBLE KNAPWEED	X				X					X								X
<i>Alyssum alyssoides</i>	ALYSSUM		X					X						X					
<i>Alyssum minus</i>	ALYSSUM	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Camelina microcarpa</i>	LITTLEPOD FALSEFLAX								X										
<i>Carduus nutans</i> ssp. <i>macrolepis</i>	MUSK THISTLE																		
<i>Chenopodium album</i>	LAMB'S QUARTERS																		
<i>Cirsium vulgare</i>	BULL THISTLE																		
<i>Cynoglossum officinale</i>	HOUND'S TONGUE																		
<i>Descurainia</i> spp.	TANSY MUSTARD																		
<i>Dianthus armeria</i>	DEPTFORD PINK								X										
<i>Dipsacus sylvestris</i>	TEASEL																		
<i>Erodium cicutarium</i>	FILAREE	X		X		X		X		X		X	X	X	X	X	X	X	X
<i>Lactuca serriola</i>	PRICKLY LETTUCE																		
<i>Lappula redowskii</i>	EARLY STICKSEED																		
<i>Lepidium densiflorum</i>	DENSEFLOWER PEPPERWEED	X		X							X		X					X	
<i>Medicago lupulina</i>	BLACK MEDIC											X	X	X					X

Table 4. Species Present - All Sites, Boulder City Open Space Prairie Dog Study, CO - June 1998

-----SAMPLE NUMBER-----

LATIN NAME	COMMON NAME	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS (concluded)</b>																			
<i>Melilotus officinalis</i>	YELLOW SWEETCLOVER																		X
<i>Neolepia campestre</i>	FIELD PEPPERWEED			X															
<i>Plantago lanceolata</i>	BUCKHORN PLAINTAIN										X								
<i>Pocilla biloba</i>	TWOLOBE SPEEDWELL																		
<i>Podospermum laciniatum</i>	FALSE SALSIFY			X			X								X			X	X
<i>Polygonum ramosissimum</i>	DEVIL'S SHOESTRINGS		X																
<i>Sisymbrium altissimum</i>	JIM HILL MUSTARD					X							X						
<i>Thlaspi arvense</i>	PENNYCRESS																		
<i>Tragopogon dubius</i> ssp. major	SALSIFY			X			X	X			X		X	X	X			X	X
<i>Verbascum blattaria</i>	MOTH MULLEIN				X	X													
<i>Verbascum thapsus</i>	MULLEIN				X	X				X									
<b>NATIVE ANNUAL GRASSES</b>																			
<i>Critesion pusillum</i>	LITTLE BARLEY			X					X										
<i>Schedonardus paniculatus</i>	COMMON THUMBLEGRASS												X						
<i>Vulpia octoflora</i>	SIX-WEEKS FESCUE	X																	
<b>INTRODUCED ANNUAL GRASSES</b>																			
<i>Anisantha tectorum</i>	CHEATGRASS	X		X	X	X	X	X		X			X	X	X	X	X	X	
<i>Bromus japonicus</i>	JAPANESE BROME		X						X										
<i>Cylindropyrum cylindricum</i>	GOAT GRASS						X												
<i>Hordeum vulgare</i>	BARLEY																		
<i>Poa bulbosa</i>	BULBOUS BLUEGRASS				X														
<b>NATIVE PERENNIAL FORBS</b>																			
<i>Acetosella vulgaris</i>	SHEEP SORREL									X									
<i>Achillea lanulosa</i>	WESTERN YARROW	X							X										
<i>Adenolinum lewisii</i>	BLUE FLAX									X				X				X	X
<i>Agoseris glauca</i>	FALSE DANDELION				X														
<i>Allium textile</i>	PRAIRIE ONION		X	X	X		X												
<i>Ambrosia psilostachya</i> var. <i>canonipifolia</i>	RAGWEED		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Antennaria corymbosa</i>	FLATTOP PUSSYTOES																		
<i>Antennaria rosea</i>	ROSE PUSSYTOES	X																	
<i>Antennaria</i> spp.	PUSSYTOES	X																	
<i>Aphyllon fasciculatum</i>	PURPLE BROOMRAPE												X						
<i>Argemone polyanthemus</i>	PRICKLEY POOPY																		
<i>Arnica fulgens</i>	ARNICA	X			X														
<i>Artemisia frigida</i>	FRINGED SAGE	X		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Artemisia ludoviciana</i>	PASTURE SAGE		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Asclepias purnila</i>	MILKWEED																		
<i>Asclepias viridiflora</i>	MILKWEED												X						X



Table 4. Species Present - All Sites, Boulder City Open Space Prairie Dog Study, CO - June 1998

-----SAMPLE NUMBER-----

LATIN NAME	COMMON NAME	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19
<b>NATIVE PERENNIAL FORBS (continued)</b>																			
<i>Lesquerella montana</i>	BLADDERPOD		X					X	X				X	X		X			
<i>Leucocrinum montanum</i>	SAND LILY		X					X					X	X	X		X		
<i>Liatris punctata</i>	GAYFEATHER		X					X	X				X		X	X	X		
<i>Lithospermum incisum</i>	NARROWLEAF PUCCOON									X	X		X				X		
<i>Lomatium orientale</i>	BISCUITROOT	X	X					X									X		
<i>Lomatium</i> spp.	BISCUITROOT																		X
<i>Lupinus argenteus</i>	SILVER LUPINE	X																	
<i>Lygodesmia juncea</i>	SKELETONWEED																		
<i>Machaeranthera canescens</i>	HOARY TANSYASTER																		
<i>Machaeranthera pinnatifida</i>	TANSEY ASTER																	X	
<i>Mertensia lanceolata</i>	BLUEBELLS																		
<i>Monarda pectinata</i>	PONY BEEBALM												X				X		
<i>Musineon divaricatum</i>	MUSINEOM							X											
<i>Nothocalais cuspidata</i>	FALSE DANDELION							X					X			X			
<i>Oenothera howardii</i>	HOWARD EVENINGPRIMROSE														X	X			
<i>Oligoneuron rigidum</i>	STIFF GOLDENROD													X	X		X	X	
<i>Oligosporus dracunculus</i> ssp. <i>glaucus</i>	WILD TARRAGON			X	X										X	X			
<i>Onosmodium molle</i> ssp. <i>occidentale</i>	MARBLESEED									X	X								
<i>Orobanche ludoviciana</i>	LOUISIANA BROOMRAPE																		X
<i>Oxalis dillenii</i>	WOOD SORREL									X	X								
<i>Oxybaphus linearis</i>	UMBRELLAWORT													X					
<i>Oxybaphus nyctagineus</i>	UMBRELLAWORT						X												
<i>Oxytropis x sericea</i>	LOCO HYBRID							X						X		X			
<i>Packera plattensis</i>	PRAIRIE GROUNDSSEL																		
<i>Penstemon linarioides</i> subsp. <i>coloradoensis</i>	BEARD-TONGUE																		
<i>Penstemon secundiflorus</i>	SIDEBELLS BEARD-TONGUE							X			X			X					
<i>Penstemon strictus</i>	ROCKY MOUNTAIN PENSTEMON																		
<i>Phyla cuneifolia</i>	FOGFRUIT					X													
<i>Physalis pumila</i> subsp. <i>hispida</i>	GROUND CHERRY																		X
<i>Physaria bellii</i>	DOUBLE BLADDERPOD																		
<i>Psilochenia occidentalis</i>	WESTERN HAWKSBEARD																		
<i>Psoraleidium tenuiflorum</i>	SCURFPEA		X		X		X	X	X	X	X		X	X	X	X	X	X	X
<i>Quincula lobata</i>	GROUND-CHERRY																		
<i>Ratibida columnifera</i>	PRAIRIE CONEFLOWER		X		X			X	X		X			X	X	X	X	X	
<i>Rumex crispus</i>	CURLY DOCK					X													
<i>Senecio integerrimus</i>	LAMBSTONGUE GROUNDSSEL																	X	
<i>Senecio spartioides</i>	SENECIO													X					X
<i>Silene scouleri</i> ssp. <i>hallii</i>	SCOULERS CAMPION				X														
<i>Solanum</i> spp.	NIGHTSHADE														X				



Table 4. Species Present - All Sites, Boulder City Open Space Prairie Dog Study, CO - June 1998

LATIN NAME	COMMON NAME	SAMPLE NUMBER																	
		1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19
<b>NATIVE PERENNIAL GRASSES ((cool) concluded)</b>																			
<i>Poa agassizensis</i>	AGASSIZ BLUEGRASS	X	X		X		X	X	X	X				X					
<i>Poa compressa</i>	CANADA BLUEGRASS		X					X	X						X				
<i>Poa secunda</i>	SANDBERG BLUEGRASS		X																
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>																			
<i>Agropyron cristatum</i>	CRESTED WHEATGRASS "FAIRWAY"											X							
<i>Bromopsis inermis</i>	SMOOTH BROME	X			X					X								X	
<i>Dactylis glomerata</i>	ORCHARD GRASS				X			X	X	X									
<i>Elytrigia repens</i>	QUACKGRASS																		
<i>Festuca arundinacea</i>	TALL FESCUE	X																	
<i>Pheium pratense</i>	TIMOTHY											X							
<i>Poa pratensis</i>	KENTUCKY BLUEGRASS		X							X									
<i>Setaria viridis</i>	BRISTLEGRASS										X								
<i>Thinopyrum intermedium</i>	INTERMEDIATE WHEATGRASS																		
<b>NATIVE PERENNIAL GRASSES (warm)</b>																			
<i>Andropogon gerardii</i>	BIG BLUESTEM, TURKEYFOOT		X				X	X	X	X		X	X	X	X	X	X	X	X
<i>Aristida purpurea</i>	THREE-AWN				X		X	X											
<i>Bouteloua curtipendula</i>	SIDEOATS GRAMA										X								
<i>Buchloe dactyloides</i>	BUFFALOGRASS	X	X				X	X			X				X	X	X	X	X
<i>Calamovilfa longifolia</i>	SANDREED																		
<i>Chondrosium gracile</i>	BLUE GRAMA GRASS		X	X			X	X				X	X	X	X	X	X	X	X
<i>Chondrosium hirsutum</i>	HAIRY GRAMA				X														
<i>Distichlis spicata</i> ssp. <i>stricta</i>	SALTGRASS																		
<i>Panicum hallii</i>	HALLS PANIC									X									
<i>Schizachyrium scoparium</i>	LITTLE BLUESTEM						X	X				X	X	X	X	X	X	X	X
<i>Sporobolus airoides</i>	ALKALI SACATON				X														
<i>Sporobolus cryptandrus</i>	SAND DROPSEED									X									
<b>NATIVE SUBSHRUBS</b>																			
<i>Gutierrezia sarothrae</i>	SNAKEWEED	X	X				X					X	X	X	X	X	X	X	X
<b>NATIVE SHRUBS</b>																			
<i>Amorpha nana</i>	LEAD PLANT							X											
<i>Chrysothamnus nauseosus</i>	RUBBER RABBITBRUSH		X													X	X	X	X
<i>Crataegus macracantha</i> var. <i>occidentalis</i>	HAWTHORN																		
<i>Padus virginiana</i> ssp. <i>melanocarpa</i>	CHOKECHERRY (SEEDLING)																		X
<i>Rhus aromatica</i> ssp. <i>triobata</i>	SKUNKBRUSH																		
<i>Rosa sayi</i>	PRICKLY ROSE				X	X									X	X	X	X	X
<i>Symphoricarpos occidentalis</i>	WESTERN SNOWBERRY							X											
<i>Yucca glauca</i>	SPANISH BAYONET											X		X	X	X	X	X	X

Table 4. Species Present - All Sites, Boulder City Open Space Prairie Dog Study, CO - June 1998

LATIN NAME	COMMON NAME	SAMPLE NUMBER																	
		1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19
<b>FERNS</b>																			
<i>Hippochaete hyemalis</i> ssp. <i>affinis</i>	SCOURING-RUSH				X														
<b>BRYOPHYTES</b>																			
Moss	MOSS		X																
<b>LICHEN</b>																			
<i>Cladonia</i> spp.	REINDEERMOSS		X					X											
<i>Xanthoparmelia chlorochloa</i>	LICHEN							X											
<i>Xanthoparmelia wyomingensis</i>	LICHEN																		
<b>SUCCULENT</b>																			
<i>Coryphantha missouriensis</i>	BALLCACTUS														X				
<i>Coryphantha vivipara</i> var. <i>vivipara</i>	NIPPLE CACTUS								X										
<i>Echinocereus viridiflorus</i>	HEN-AND-CHICKENS							X					X						
<i>Opuntia fragilis</i>	BRITTLE CACTUS		X		X									X				X	
<i>Opuntia macrorhiza</i>	PRICKLY-PEAR CACTUS		X		X			X	X				X	X	X				
<i>Opuntia polyacantha</i>	PRICKLYPEAR CACTUS																		
<b>EPIPHYTE (PARASITE)</b>																			
<i>Orobanche multiflora</i>	BROOMRAPE												X						
<b>MUSHROOMS</b>																			
Fungus	MUSHROOM			X									X						X

Table 4. Species Present - All Sites, Boulder City Open Space Prairie Dog Study, CO - June 1998

-----SAMPLE NUMBER-----

LATIN NAME	COMMON NAME	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
<b>NATIVE ANNUAL &amp; BIENNIAL FORBS</b>																			
<i>Androsace septentrionalis</i>	PYGMFLOWER ROCKJASMINE																		
<i>Chamaesyce glyptosperma</i>	RIDGESEED SPURGE						X									X			
<i>Chenopodium</i> spp.	GOOSEFOOT							X											
<i>Cirsium undulatum</i>	WAVYLEAF THISTLE					X		X					X						
<i>Collinsia parviflora</i>	BABY BLUE-EYES																		
<i>Collomia linearis</i>	LINEARLEAF COLLUMIA																		
<i>Descurainia incana</i>	RICHARDSON TANSYMUSTARD													X					
<i>Draba</i> spp.	WHITLOWWORT																		
<i>Dyssodia papposa</i>	FETID MARIGOLD																		X
<i>Erigeron divergens</i>	SPREADING FLEABANE										X								
<i>Erysimum asperum</i>	WALLFLOWER					X													
<i>Evax prolifera</i>	RABBIT-TOBACCO														X				
<i>Gaura parviflora</i>	WILLOW GAURA																		
<i>Grindelia squarrosa</i>	GUMWEED											X							
<i>Oligosporus pacificus</i>	SAGEWORT					X													
<i>Oreocarya virgata</i>	MINER'S CANDLE																		
<i>Plantago patagonica</i>	WOOLLY PLANTAIN				X							X	X	X		X			X
<i>Pterogonum alatum</i>	WINGED BUCKWHEAT																		
<i>Salvia aethiopsis</i>	MEDITERRANEAN SAGE																X		
<i>Silene antirrhina</i>	SLEEPY CATCHFLY																		X
<i>Titthalmus spathulatus</i>	PRAIRIE SPURGE																		X
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>																			
<i>Acosta diffusa</i>	TUMBLE KNAPWEED					X									X				
<i>Alyssum alyssoides</i>	ALYSSUM								X			X				X			
<i>Alyssum minus</i>	ALYSSUM							X				X				X			
<i>Camelina microcarpa</i>	LITTLEPOD FALSEFLAX											X				X			
<i>Carduus nutans</i> ssp. <i>macrolepis</i>	MUSK THISTLE							X											
<i>Chenopodium album</i>	LAMB'S QUARTERS																X		
<i>Cirsium vulgare</i>	BULL THISTLE																		
<i>Cynoglossum officinale</i>	HOUND'S TONGUE																		
<i>Descurainia</i> spp.	TANSY MUSTARD																		
<i>Dianthus armeria</i>	DEPTFORD PINK																		
<i>Dipsacus sylvestris</i>	TEASEL																		
<i>Erodium cicutarium</i>	FILAREE								X							X			X
<i>Lactuca scariola</i>	PRICKLY LETTUCE											X							
<i>Lappula redowskii</i>	EARLY STICKSEED																		X
<i>Lepidium densiflorum</i>	DENSEFLOWER PEPPERWEED				X														X
<i>Medicago lupulina</i>	BLACK MEDIC														X				X





Table 4. Species Present - All Sites, Boulder City Open Space Prairie Dog Study, CO - June 1998

		-----SAMPLE NUMBER-----																	
LATIN NAME	COMMON NAME	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
<b>NATIVE PERENNIAL FORBS (continued)</b>																			
<i>Aster laevis</i> var. <i>geyeri</i>	SMOOTH ASTER																		
<i>Aster porteri</i>	PORTER ASTER							X		X	X								
<i>Astragalus agrestis</i>	FIELD MILKVETCH					X			X										
<i>Astragalus crassicaarpus</i>	GROUNDPLUM MILKVETCH																		
<i>Astragalus drummondii</i>	DRUMMOND MILKVETCH																		
<i>Astragalus miser</i> var. <i>oblongifolius</i>	WEEDY MILKVETCH																		
<i>Astragalus shortianus</i>	MILK VETCH																		
<i>Astragalus tridactylicus</i>	MILK VETCH																		
<i>Brickellia eupatorioides</i>	FALSE BONESET																		
<i>Calylophus serrulatus</i>	CALYLOPHUS																		
<i>Castilleja sessiliflora</i>	LARGEFLOWERED PAINTBRUSH																		
<i>Comandra umbellata</i> ssp. <i>pallida</i>	BASTARD TOADFLAX							X											
<i>Cucurbita foetidissima</i>	GOURD, CALABAZILLA																		X
<i>Cymopterus montanus</i>	CYMOPTERUS																		
<i>Dalea candida</i> var. <i>oligophylla</i>	WHITE DALEA																		X
<i>Dalea purpurea</i>	DALEA					X			X	X									
<i>Drymocallis fissa</i>	BIGFLOWER CINQUEFOIL																		
<i>Epilobium ciliatum</i>	CILIATE WILLOW HERB			X															
<i>Eremogone fendleri</i>	DESERT SANDWORT																		
<i>Erigeron canus</i>	DAISY					X													
<i>Erigeron flagellaris</i>	WHIPLASH FLEABANE												X	X					
<i>Erigeron pumilus</i>	DAISY																		
<i>Eriogonum lonchophyllum</i>	FALSE BUCKWHEAT				X														
<i>Evolvulus nuttalianus</i>	NUTTALL'S EVOLVULUS																		
<i>Frasera speciosa</i>	GREEN GENTIAN																		
<i>Gaillardia aristata</i>	BLANKET-FLOWER																		
<i>Gastrolychnis drummondii</i>	DRUMMOND CAMPION					X													
<i>Gaura coccinea</i>	GAURA	X			X	X	X	X	X	X					X				
<i>Glandularia bipinnatifida</i>	SHOWY VERVAIN																	X	
<i>Helianthella uniflora</i>	ONE-FLOWER WOODSUNFLOWER																		
<i>Helianthus rigidus</i> ssp. <i>subrhomboides</i>	SUNFLOWER							X											
<i>Heterotheca fulcrata</i>	GOLDEN ASTER																		
<i>Heterotheca villosa</i>	GOLDEN ASTER	X			X	X				X		X			X				
<i>Heuchera hallii</i>	ALUMROOT																		
<i>Hybanthus verticillatus</i>	WHORLED NODVIOLET																		
<i>Hymenopappus filifolius</i> var. <i>polycephalus</i>	HYMENOPAPPUS																		
<i>Ipomopsis spicata</i>	SPIKE GILIA																		
<i>Iris missouriensis</i>	WILD IRIS																		
<i>Iva axillaris</i>	POVERTYWEED											X							











Table 4. Species Present - All Sites, Boulder City Open Space Prairie Dog Study, CO - June 1998

		-----SAMPLE NUMBER-----										
LATIN NAME	COMMON NAME	38	39	40	41	42	43	44	45	46	47	48
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS (concluded)</b>												
<i>Melilotus officinalis</i>	YELLOW SWEETCLOVER		X		X							
<i>Neolepia campestre</i>	FIELD PEPPERWEED							X				
<i>Plantago lanceolata</i>	BUCKHORN PLAINTAIN											
<i>Pocilla biloba</i>	TWOLOBE SPEEDWELL											
<i>Podospermum laciniatum</i>	FALSE SALSIFY										X	X
<i>Polygonum ramosissimum</i>	DEVIL'S SHOESTRINGS											
<i>Sisymbrium altissimum</i>	JIM HILL MUSTARD					X						
<i>Thlaspi arvense</i>	PENNYCRESS											X
<i>Tragopogon dubius</i> ssp. major	SALSIFY				X	X		X		X	X	X
<i>Verbascum blattaria</i>	MOTH MULLEIN											
<i>Verbascum thapsus</i>	MULLEIN				X	X						
<b>NATIVE ANNUAL GRASSES</b>												
<i>Critesion pusillum</i>	LITTLE BARLEY				X							
<i>Schedonnardus paniculatus</i>	COMMON THUMBLEGRASS											
<i>Vulpia octoflora</i>	SIX-WEEKS FESCUE						X					
<b>INTRODUCED ANNUAL GRASSES</b>												
<i>Anisantha tectorum</i>	CHEATGRASS	X			X	X	X		X	X	X	X
<i>Bromus japonicus</i>	JAPANESE BROME	X						X				
<i>Cylindropyrum cylindricum</i>	GOAT GRASS											
<i>Hordeum vulgare</i>	BARLEY											
<i>Poa bulbosa</i>	BULBOUS BLUEGRASS											
<b>NATIVE PERENNIAL FORBS</b>												
<i>Acetosella vulgaris</i>	SHEEP SORREL											
<i>Achillea lanulosa</i>	WESTERN YARROW							X				
<i>Adenolinum lewisii</i>	BLUE FLAX				X	X					X	X
<i>Agoseris glauca</i>	FALSE DANDELION							X				
<i>Allium textile</i>	PRAIRIE ONION	X					X					
<i>Ambrosia psilostachya</i> var. coronopifolia	RAGWEED		X		X		X	X		X		X
<i>Antennaria corymbosa</i>	FLATTOP PUSSYTOES						X					
<i>Antennaria rosea</i>	ROSE PUSSYTOES							X				
<i>Antennaria</i> spp.	PUSSYTOES											
<i>Aphyllon fasciculatum</i>	PURPLE BROOMRAPE											
<i>Argemone polyanthemos</i>	PRICKLEY POOPY		X									X
<i>Arnica fulgens</i>	ARNICA						X	X				
<i>Artemisia frigida</i>	FRINGED SAGE						X	X			X	X
<i>Artemisia ludoviciana</i>	PASTURE SAGE	X		X					X	X		X
<i>Asclepias pumila</i>	MILKWEED											
<i>Asclepias viridiflora</i>	MILKWEED			X	X							







Table 4. Species Present - All Sites, Boulder City Open Space Prairie Dog Study, CO - June 1998

-----SAMPLE NUMBER-----

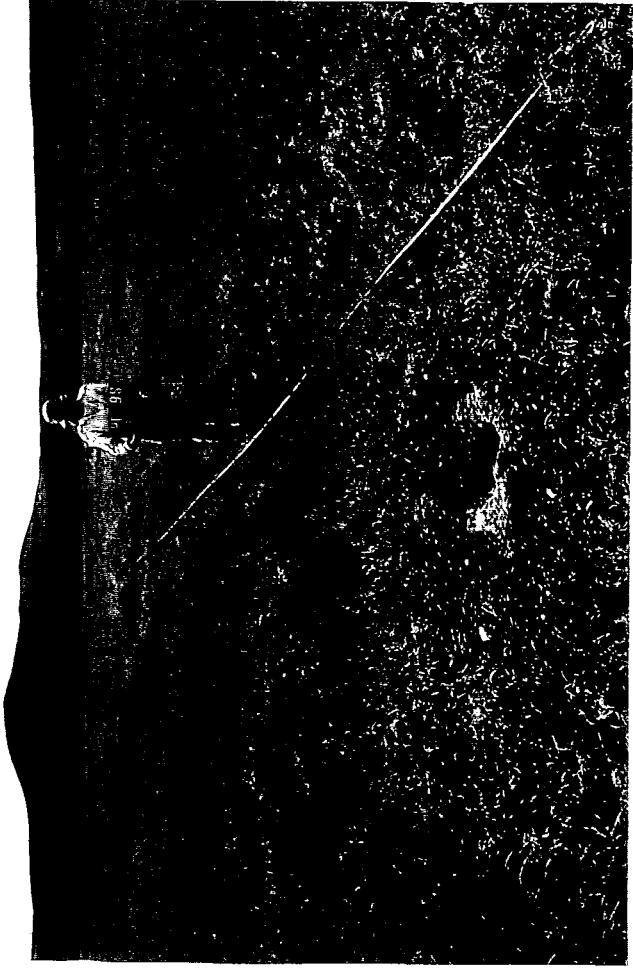
LATIN NAME	COMMON NAME	38	39	40	41	42	43	44	45	46	47	48
<b>NATIVE PERENNIAL FORBS (concluded))</b>												
<i>Solidago missouriensis</i>	MISSOURI GOLDENROD											
<i>Sphaeralcea coccinea</i>	COPPER MALLOW	X	X							X	X	X
<i>Thelesperma megapotamicum</i>	THELESPERMA	X										
<i>Tithymalus brachyceras</i>	SPURGE					X	X				X	
<i>Townsendia exscapa</i>	STEMLESS TOWNSENDIA											
<i>Townsendia hookeri</i>	HOOKEE'S EASTER DAISY											
<i>Tradescantia occidentalis</i>	SPIDERWORT					X						
<i>Vicia americana</i>	AMERICAN VETCH		X				X	X				X
<i>Viola nuttallii</i>	YELLOW PRAIRIE VIOLET			X	X	X	X	X	X	X	X	
<i>Virgulus falcatius</i>	FALCATE ASTER											
<b>INTRODUCED PERENNIAL FORBS</b>												
<i>Breca arvensis</i>	CANADA THISTLE			X								
<i>Cardaria chalapensis</i>	WHITETOP											
<i>Convolvulus arvensis</i>	BINDWEED	X	X	X	X	X	X	X	X	X	X	X
<i>Hypericum perforatum</i>	KLAMATH WEED					X						
<i>Linaria genistifolia</i> ssp. <i>dalmatica</i>	DALMATION TOADFLAX											
<i>Linaria vulgaris</i>	BUTTER-AND-EGGS			X								
<i>Lotus tenuis</i>	LOTUS											
<i>Marrubium vulgare</i>	HOREHOUND			X					X			
<i>Medicago sativa</i>	ALFALFA											
<i>Taraxacum officinale</i>	DANDELION			X				X	X	X	X	X
<i>Trifolium pratense</i>	RED CLOVER											
<i>Trifolium repens</i>	WHITE DUTCH CLOVER									X	X	
<i>Verbena bracteata</i>	VERVAIN											
<b>NATIVE PERENNIAL GRASSES (cool)</b>												
<i>Carex douglasii</i>	SEDGE							X				
<i>Carex oreocharis</i>	MOUNTAIN SEDGE					X						
<i>Carex pennsylvanica</i> ssp. <i>heliophila</i>	SUN SEDGE							X				
<i>Carex praegracilis</i>	SEDGE											
<i>Critision jubatum</i>	FOXTAIL BARLEY											
<i>Elymus elymoides</i>	BOTTLEBRUSH SQUIRRELTAIL											
<i>Elymus longifolius</i>	BOTTLEBRUSH SQUIRRELTAIL			X								
<i>Elymus trachycaulus</i>	SLENDER WHEATGRASS											X
<i>Hesperostipa comata</i>	NEEDLE-AND-THREAD											
<i>Juncus arcticus</i> ssp. <i>ater</i>	BALTIC RUSH											
<i>Koeleria macrantha</i>	JUNEGRASS				X			X				
<i>Nassella viridula</i>	GREEN NEEDLEGRASS							X		X		
<i>Pascopyrum smithii</i>	WESTERN WHEATGRASS	X						X	X	X	X	X

Table 4. Species Present - All Sites, Boulder City Open Space Prairie Dog Study, CO - June 1998

-----SAMPLE NUMBER-----

LATIN NAME	COMMON NAME	38	39	40	41	42	43	44	45	46	47	48
<b>NATIVE PERENNIAL GRASSES ((cool) concluded)</b>												
<i>Poa agassizensis</i>	AGASSIZ BLUEGRASS						X			X		
<i>Poa compressa</i>	CANADA BLUEGRASS						X	X				
<i>Poa secunda</i>	SANDBERG BLUEGRASS							X				
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>												
<i>Agropyron cristatum</i>	CRESTED WHEATGRASS "FAIRWA		X	X								
<i>Bromopsis inermis</i>	SMOOTH BROME		X	X	X							
<i>Dactylis glomerata</i>	ORCHARD GRASS									X		
<i>Elytrigia repens</i>	QUACKGRASS							X				
<i>Festuca arundinacea</i>	TALL FESCUE									X		
<i>Phleum pratense</i>	TIMOTHY											
<i>Poa pratensis</i>	KENTUCKY BLUEGRASS							X				
<i>Setaria viridis</i>	BRISTLEGRASS											
<i>Thinopyrum intermedium</i>	INTERMEDIATE WHEATGRASS										X	
<b>NATIVE PERENNIAL GRASSES (warm)</b>												
<i>Andropogon gerardii</i>	BIG BLUESTEM, TURKEYFOOT						X	X				
<i>Aristida purpurea</i>	THREE-AWN			X			X			X		
<i>Bouteloua curtipendula</i>	SIDEOATS GRAMA											X
<i>Buchloe dactyloides</i>	BUFFALOGRASS	X		X							X	X
<i>Calamovilfa longifolia</i>	SANDREED			X								
<i>Chondrosium gracile</i>	BLUE GRAMA GRASS	X									X	X
<i>Chondrosium hirsutum</i>	HAIRY GRAMA											
<i>Distichlis spicata ssp. stricta</i>	SALTGRASS											
<i>Panicum hallii</i>	HALLS PANIC											
<i>Schizachyrium scoparium</i>	LITTLE BLUESTEM											
<i>Sporobolus airoides</i>	ALKALI SACATON									X		
<i>Sporobolus cryptandrus</i>	SAND DROPSEED					X						
<b>NATIVE SUBSHRUBS</b>												
<i>Gutierrezia sarothrae</i>	SNAKEWEED	X	X				X	X		X	X	X
<b>NATIVE SHRUBS</b>												
<i>Amorpha nana</i>	LEAD PLANT											
<i>Chrysothamnus nauseosus</i>	RUBBER RABBITBRUSH	X	X									X
<i>Crataegus macracantha var. occidentalis</i>	HAWTHORN									X		
<i>Padus virginiana ssp. melanocarpa</i>	CHOKECHERRY (SEEDLING)											
<i>Rhus aromatica ssp. trilobata</i>	SKUNKBRUSH		X									
<i>Rosa sayi</i>	PRICKLY ROSE	X	X				X		X	X		
<i>Symphoricarpos occidentalis</i>	WESTERN SNOWBERRY											
<i>Yucca glauca</i>	SPANISH BAYONET		X			X						X

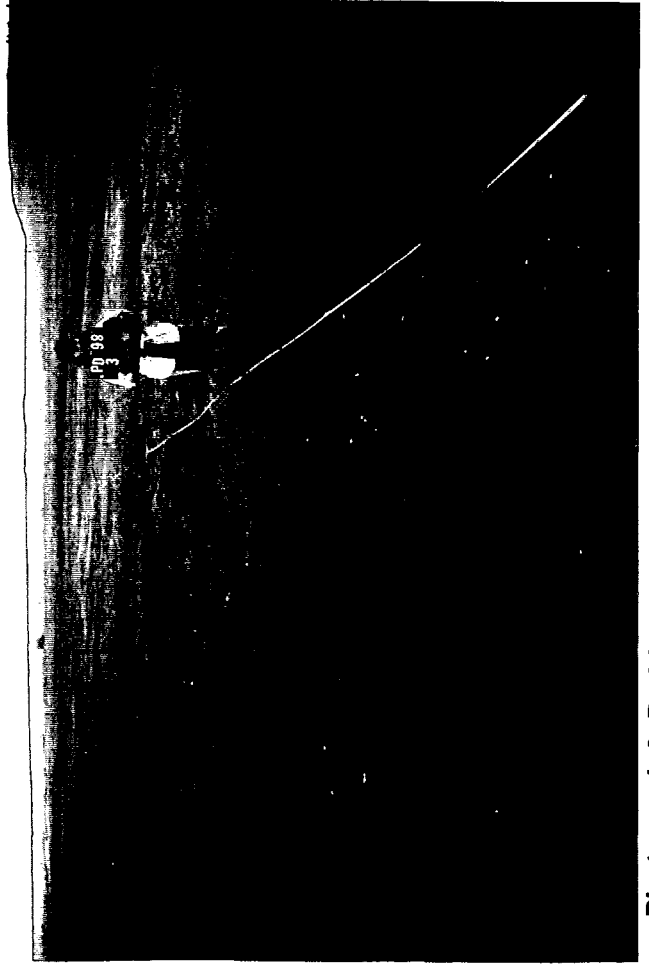




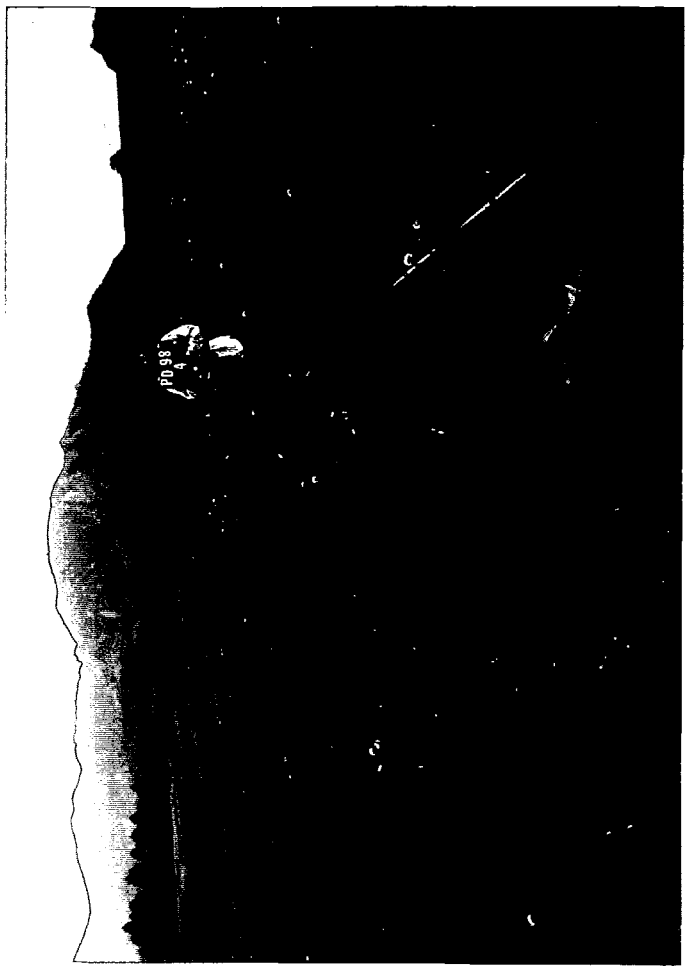
Photograph 1. Prairie Dog Study, Affected Sample 1-June '98.



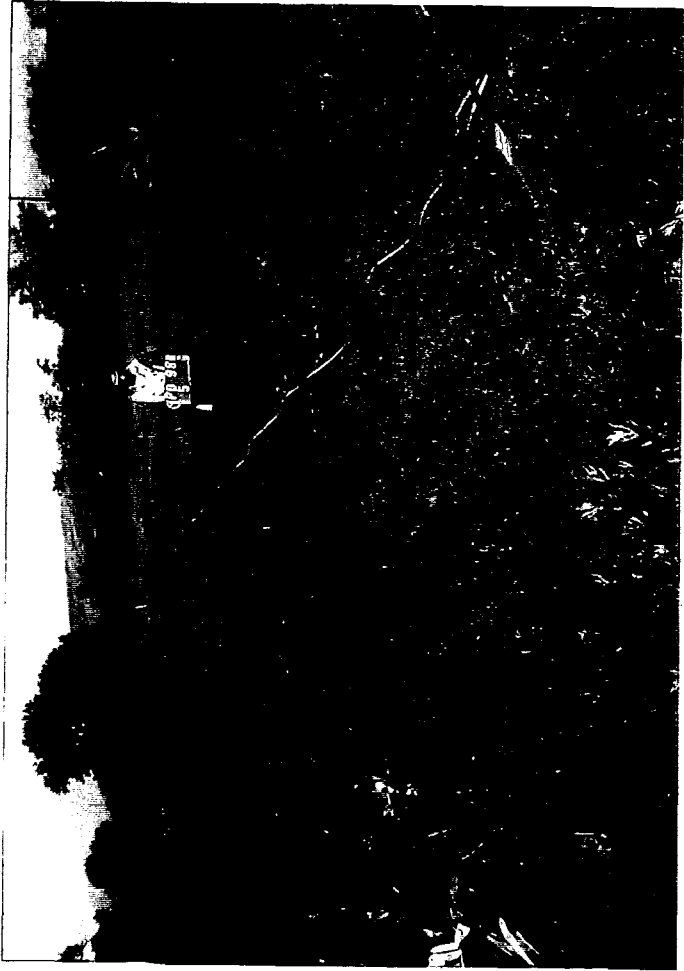
Photograph 2. Prairie Dog Study, Unaffected Sample 2-June '98.



Photograph 3. Prairie Dog Study, Affected Sample 3-June '98.



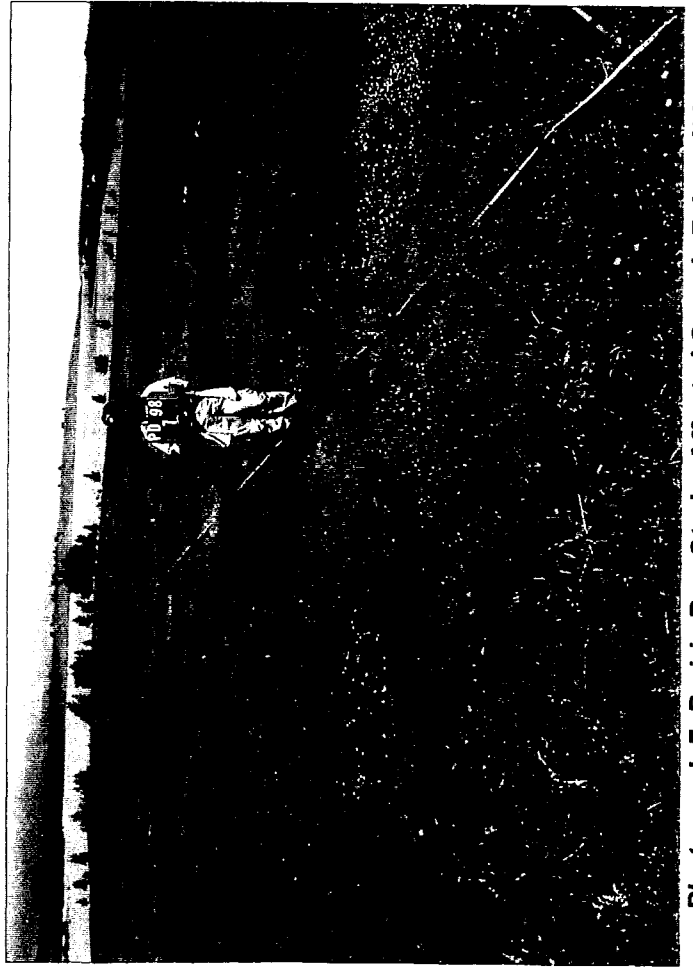
Photograph 4. Prairie Dog Study, Unaffected Sample 4-June '98.



Photograph 5. Prairie Dog Study, Affected Sample 5-June '98.



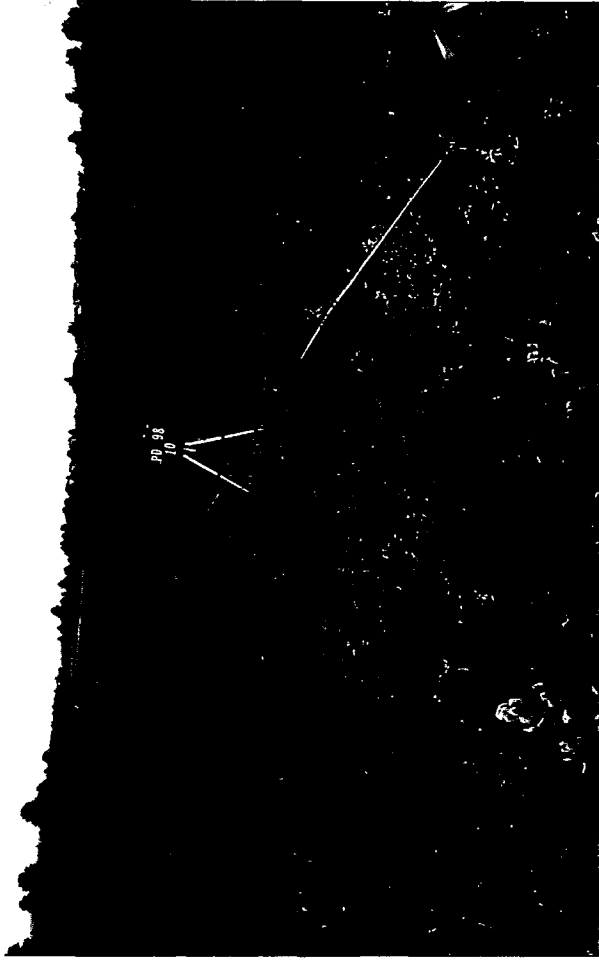
Photograph 6. Prairie Dog Study, Unaffected Sample 6-June '98.



Photograph 7. Prairie Dog Study, Affected Sample 7-June '98.



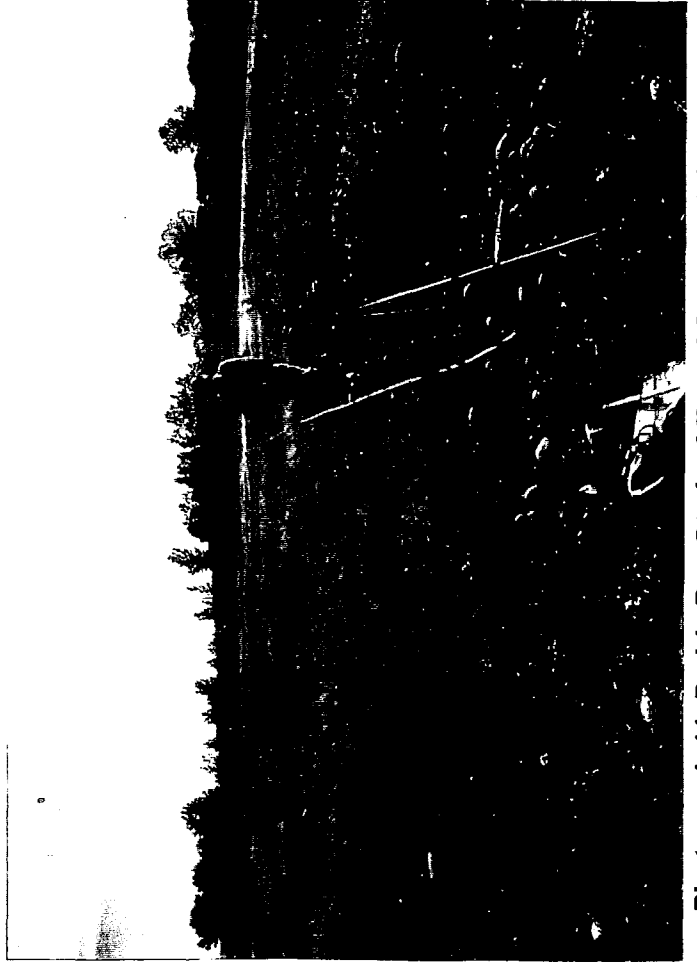
Photograph 8. Prairie Dog Study, Unaffected Sample 8-June '98.



Photograph 10. Prairie Dog Study, Unaffected Sample 10-June '98.



Photograph 9. Prairie Dog Study, Affected Sample 9-June '98.



Photograph 11. Prairie Dog Study, Affected Sample 11-June '98.

Sample 12 NOT COLLECTED.





Photograph 14. Prairie Dog Study, Unaffected Sample 14-June '98.



Photograph 16. Prairie Dog Study, Unaffected Sample 16-June '98.



Photograph 13. Prairie Dog Study, Affected Sample 13-June '98.



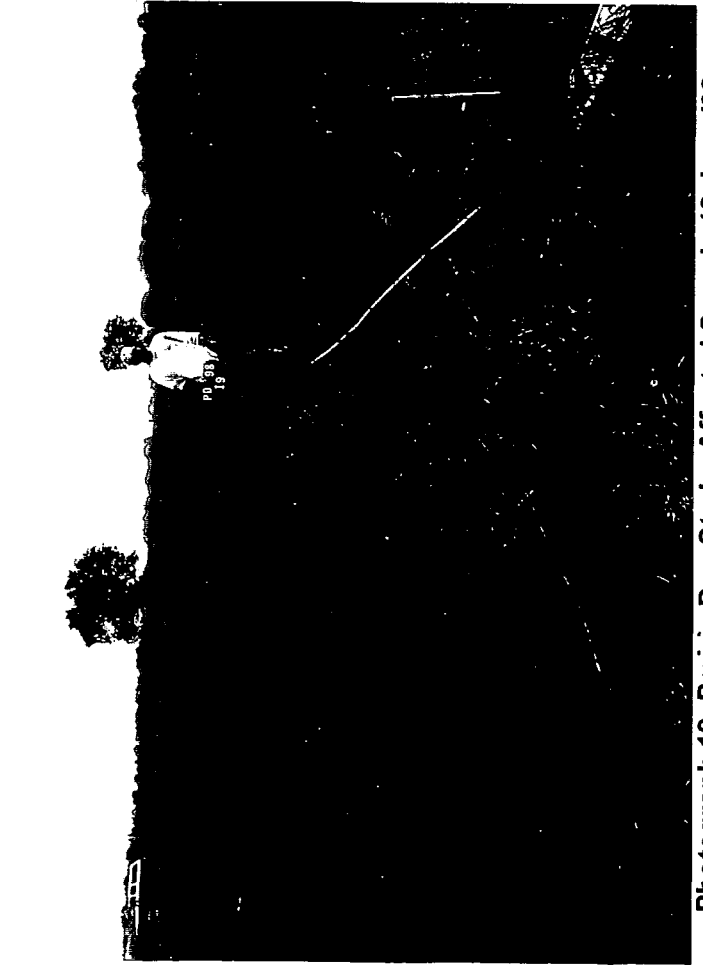
Photograph 15. Prairie Dog Study, Affected Sample 15-June '98.



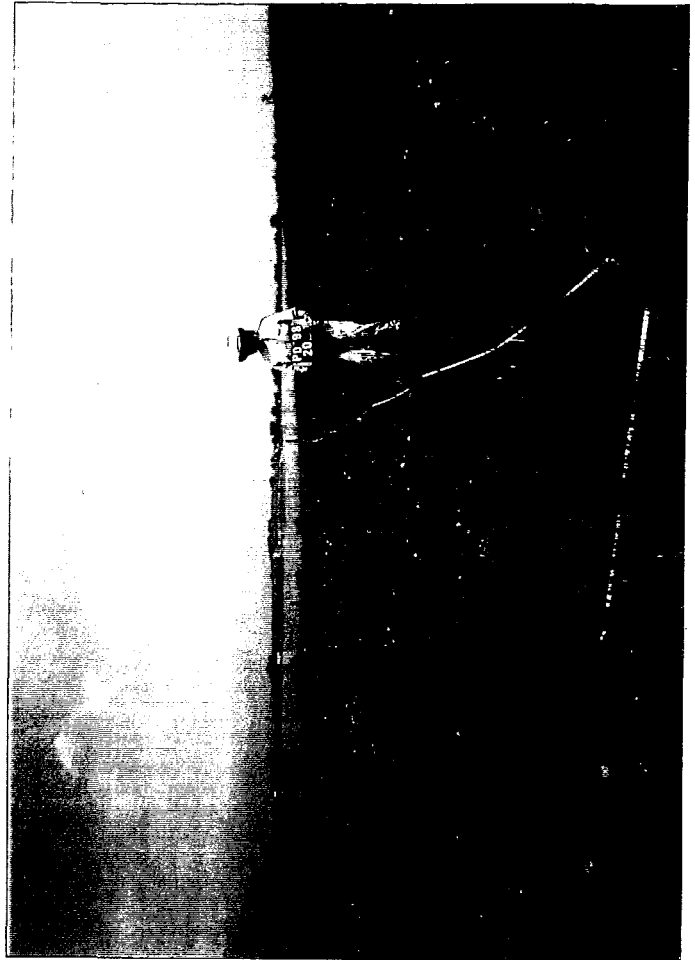
Photograph 17. Prairie Dog Study, Affected Sample 17-June '98.



Photograph 18. Prairie Dog Study, Unaffected Sample 18-June '98.



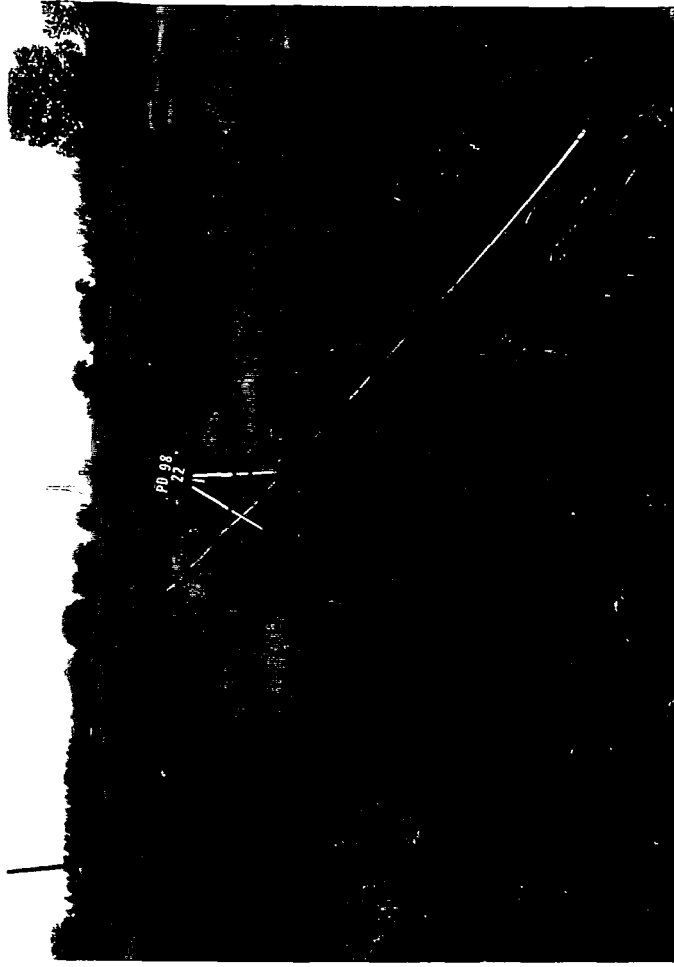
Photograph 19. Prairie Dog Study, Affected Sample 19-June '98.



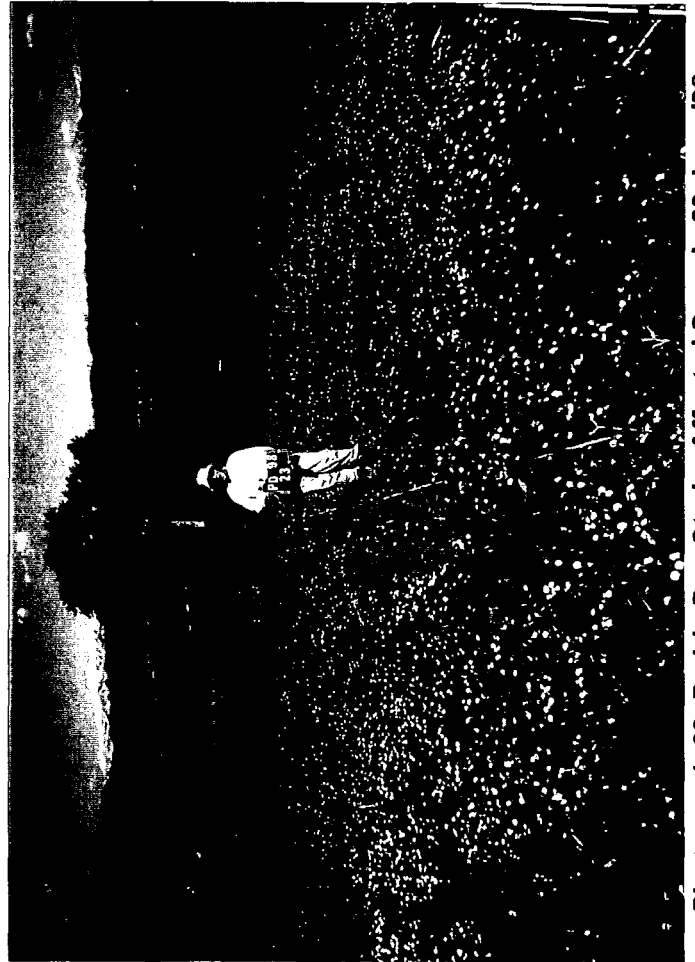
Photograph 20. Prairie Dog Study, Unaffected Sample 20-June '98.



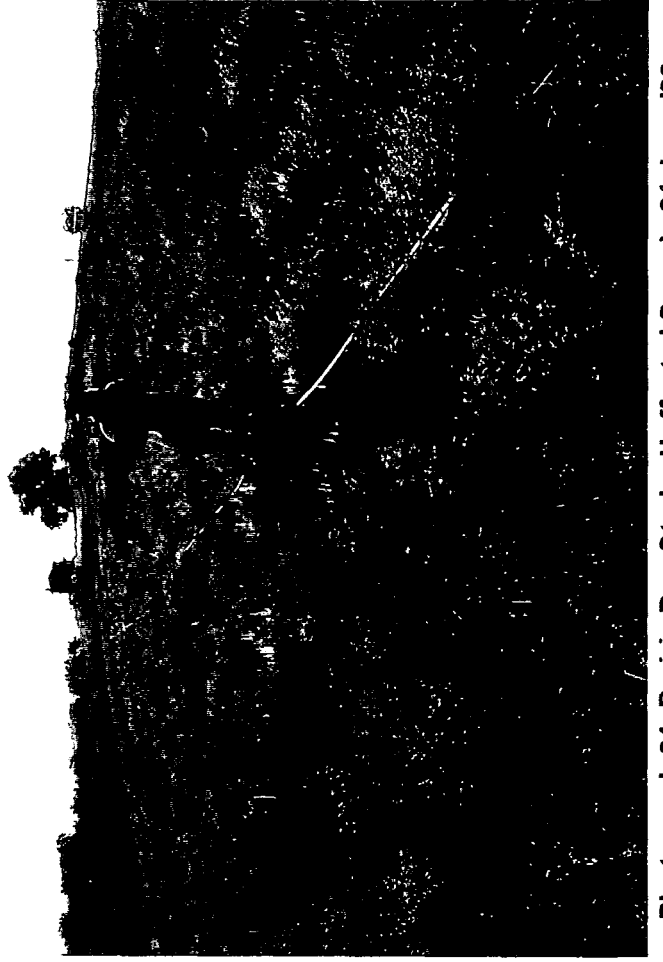
Photograph 21. Prairie Dog Study, Affected Sample 21~June '98.



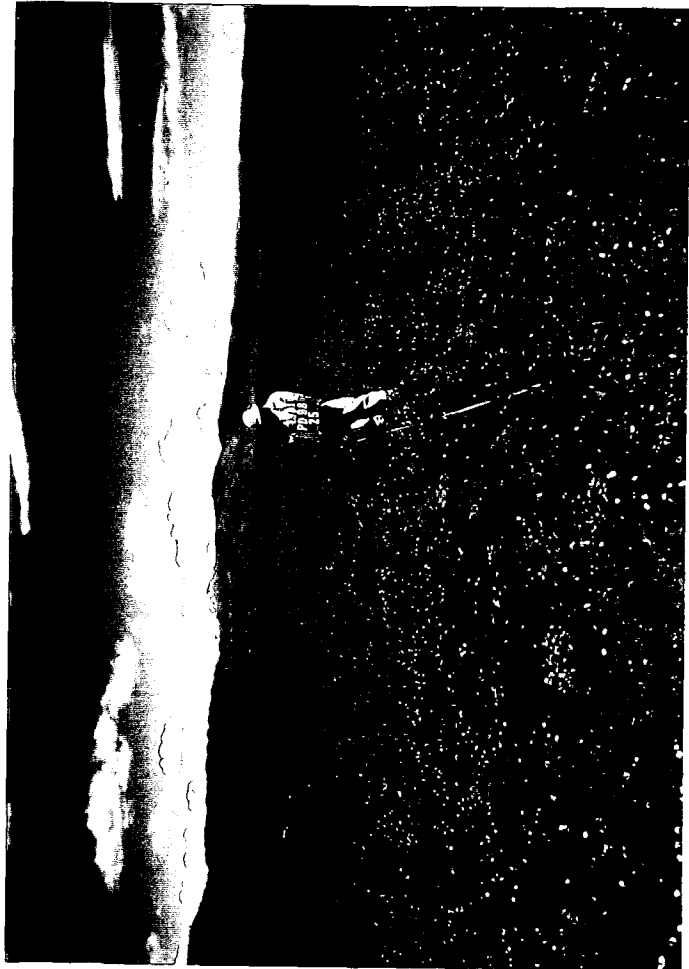
Photograph 22. Prairie Dog Study, Unaffected Sample 22~June '98.



Photograph 23. Prairie Dog Study, Affected Sample 23~June '98.



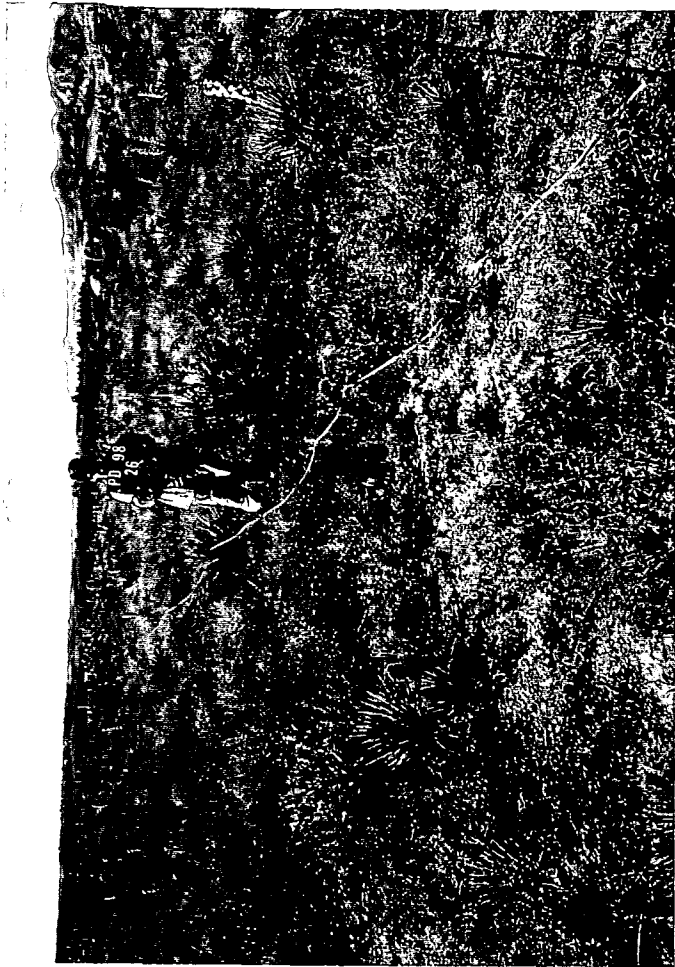
Photograph 24. Prairie Dog Study, Unaffected Sample 24~June '98.



Photograph 25. Prairie Dog Study, Affected Sample 25-June '98.



Photograph 27. Prairie Dog Study, Affected Sample 27-June '98.



Photograph 26. Prairie Dog Study, Unaffected Sample 26-June '98.



Photograph 28. Prairie Dog Study, Unaffected Sample 28-June '98.



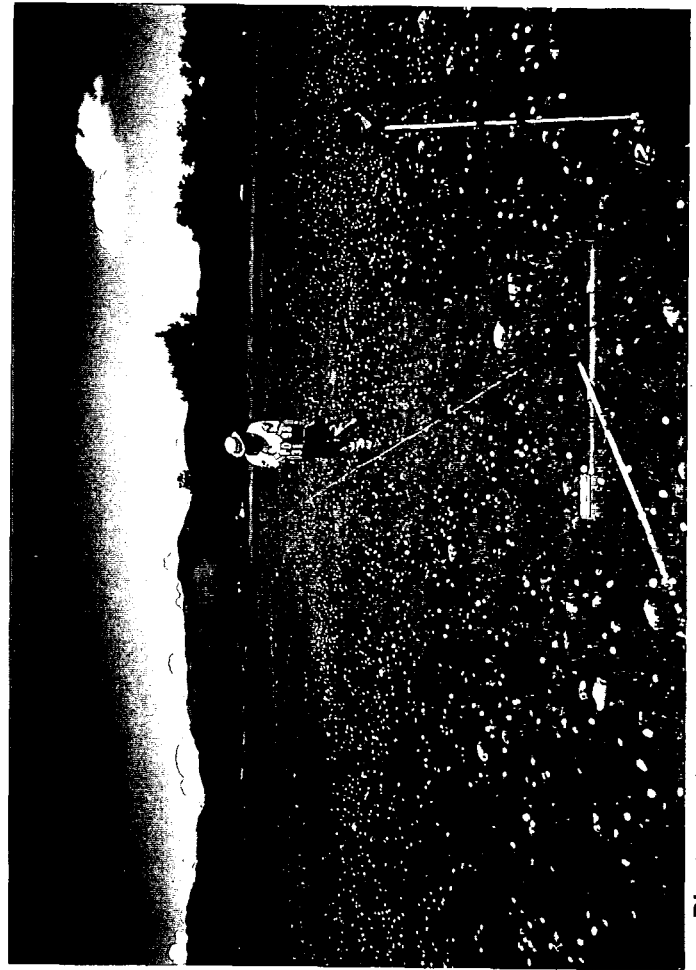
Photograph 30. Prairie Dog Study, Unaffected Sample 30-June '98.



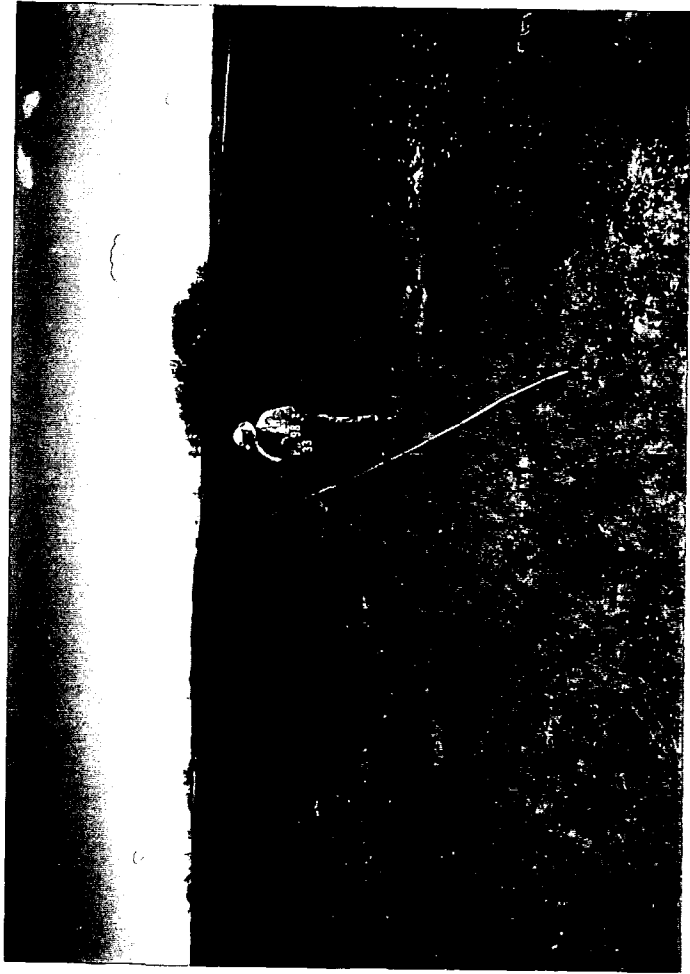
Photograph 32. Prairie Dog Study, Unaffected Sample 32-June '98.



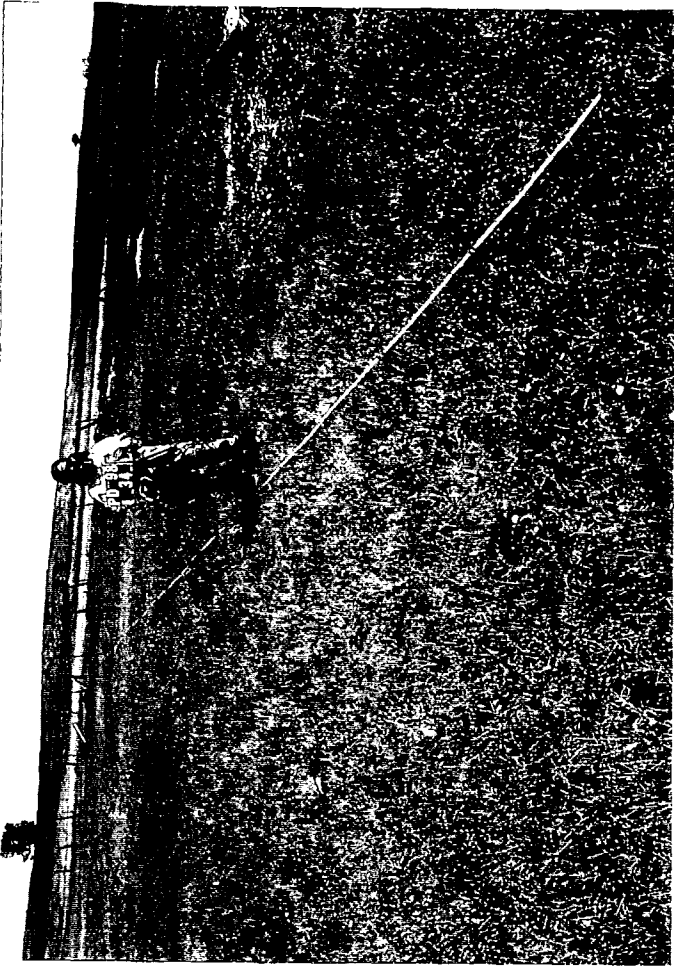
Photograph 29. Prairie Dog Study, Affected Sample 29-June '98.



Photograph 31. Prairie Dog Study, Affected Sample 31-June '98.



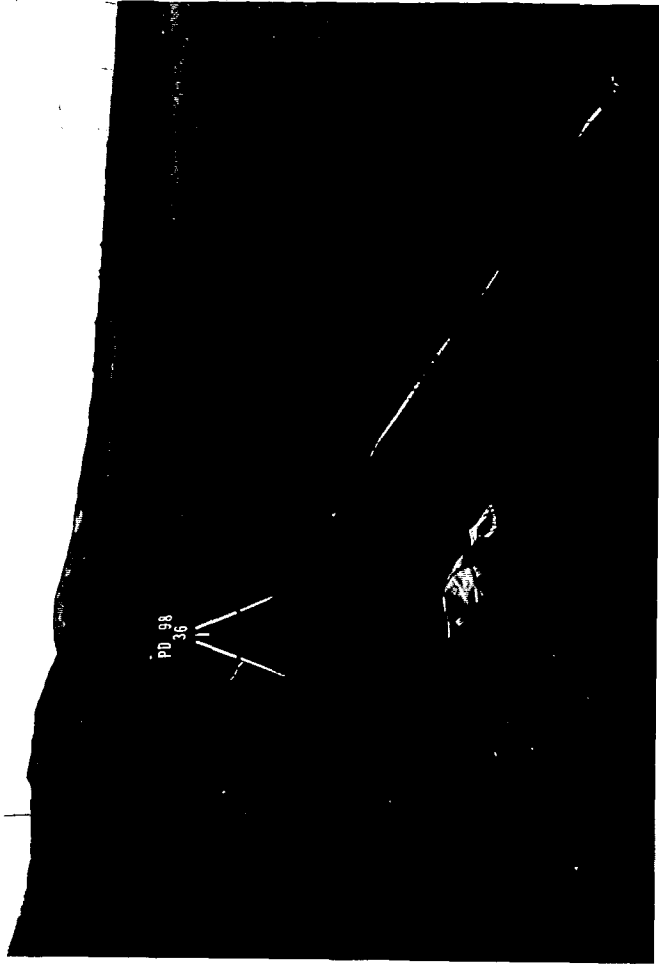
Photograph 33. Prairie Dog Study, Affected Sample 33~June '98.



Photograph 34. Prairie Dog Study, Unaffected Sample 34~June '98.



Photograph 35. Prairie Dog Study, Affected Sample 35~June '98.



Photograph 36. Prairie Dog Study, Unaffected Sample 36~June '98.



Photograph 37. Prairie Dog Study, Affected Sample 37-June '98.



Photograph 38. Prairie Dog Study, Unaffected Sample 38-June '98.



Photograph 39. Prairie Dog Study, Affected Sample 39-June '98.



Photograph 40. Prairie Dog Study, Unaffected Sample 40-June '98.



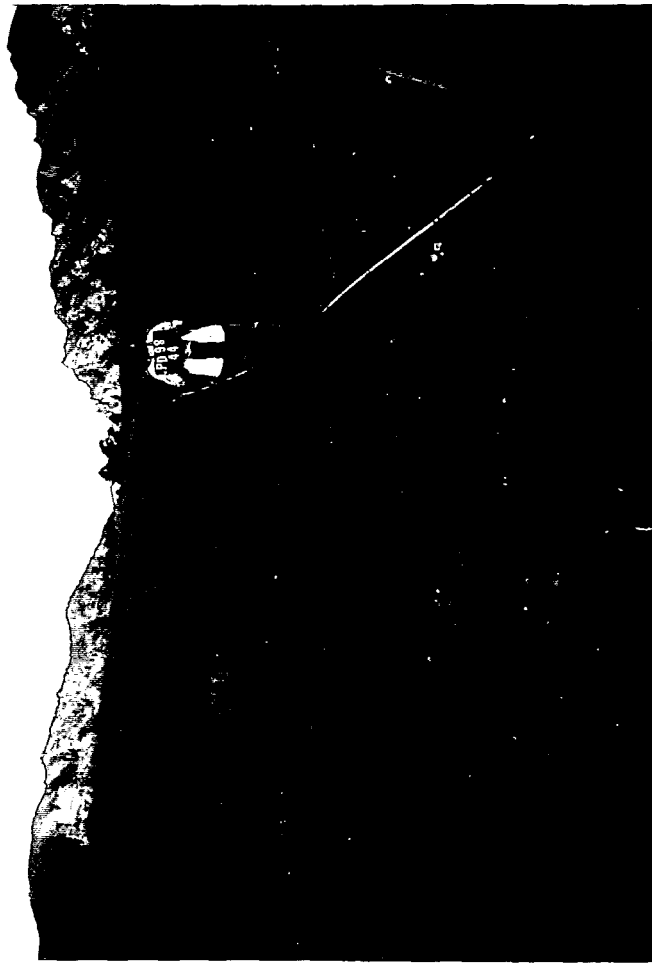
Photograph 41. Prairie Dog Study, Affected Sample 41~June '98.



Photograph 42. Prairie Dog Study, Unaffected Sample 42~June '98.

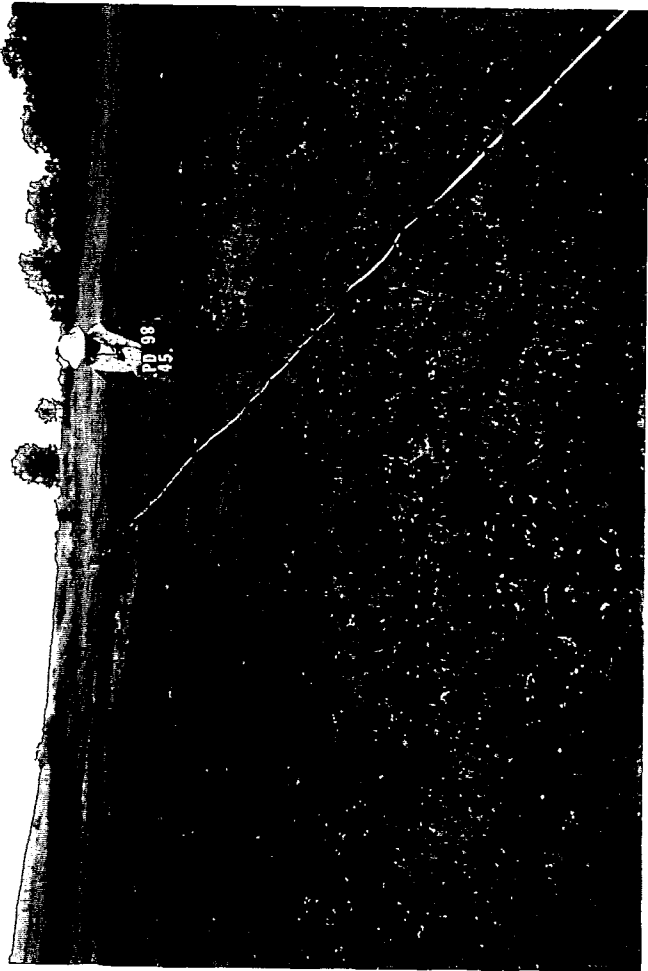


Photograph 43. Prairie Dog Study, Affected Sample 43~June '98.

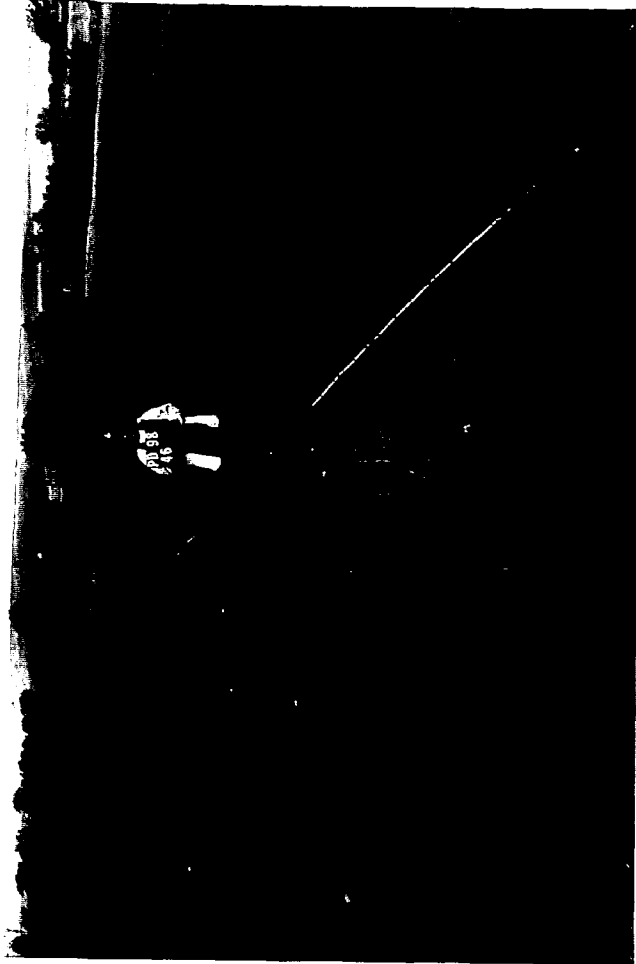


Photograph 44. Prairie Dog Study, Unaffected Sample 44~June '98.





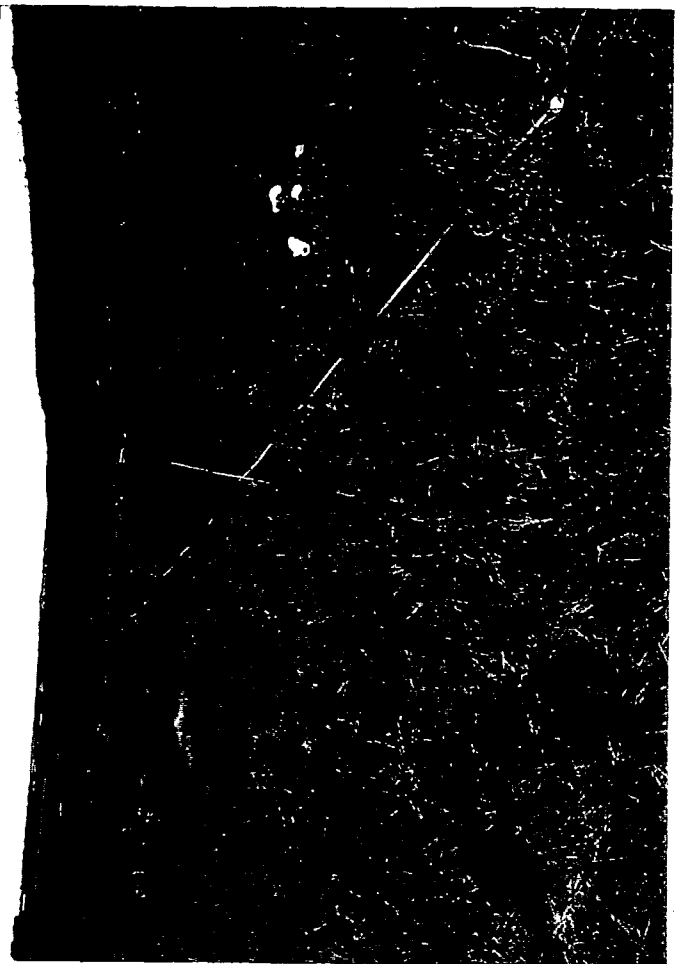
Photograph 45. Prairie Dog Study, Affected Sample 45-June '98.



Photograph 46. Prairie Dog Study, Unaffected Sample 46-June '98.



Photograph 47. Prairie Dog Study, Affected Sample 47-June '98.



Photograph 48. Prairie Dog Study, Unaffected Sample 48-June '98.