

ESCO

Tallgrass Natural Area Vegetation Moni
OSMP Studies 3591

Study



ESCO Associates, Inc.



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1997

ESCO

**Tallgrass Natural Area
Vegetation Monitoring Data
1997**
City of Boulder Open Space

Data Collected for:

City of Boulder
Open Space Dept.
66 So. Cherryvale Rd.
Boulder, CO 80303

Data Collected by:

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Boulder, CO 80308

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1997

Table 1. Cover Data – Area 3, Boulder City Open Space, CO – 1997

PLANT SPECIES	AVERAGE COVER (%)	FREQUENCY (%)	RELATIVE VEGETATION COVER (%)	AVERAGE COVER-ALL (%)	RELATIVE VEGETATION COVER-ALL (%)
NATIVE ANNUAL & BIENNIAL FORBS					
<i>Dracocephalum parviflorum</i>	0.00	50.00	0.00	0.00	0.00
<i>Grindelia squarrosa</i>	0.00	33.33	0.00	0.00	0.00
TOTAL NATIVE ANN. & BIEN. FORBS	0.0	66.7	0.0	0.0	0.0
INTRODUCED ANNUAL & BIENNIAL FORBS					
<i>Acosta diffusa</i>	0.00	16.67	0.00	0.00	0.00
<i>Alyssum minus</i>	0.00	16.67	0.00	0.00	0.00
<i>Cirsium vulgare</i>	0.00	33.33	0.00	0.00	0.00
<i>Dianthus armeria</i>	0.00	66.67	0.00	0.00	0.00
<i>Lactuca serriola</i>	0.00	16.67	0.00	0.00	0.00
<i>Medicago lupulina</i>	0.17	16.67	0.32	0.17	0.30
<i>Melilotus alba</i>	0.00	16.67	0.00	0.00	0.00
<i>Melilotus officinalis</i>	0.00	16.67	0.00	0.00	0.00
<i>Neolepia campestre</i>	0.00	16.67	0.00	0.00	0.00
<i>Plantago lanceolata</i>	2.50	100.00	4.75	2.50	4.53
<i>Tragopogon dubius ssp. major</i>	0.00	33.33	0.00	0.00	0.00
TOTAL INTRO. ANN. & BIEN. FORBS	2.7	100.0	5.1	2.7	4.8
INTRODUCED ANNUAL GRASSES					
<i>Bromus japonicus</i>	0.00	16.67	0.00	0.00	0.00
TOTAL INTRO. ANN. GRASSES	0.0	16.7	0.0	0.0	0.0
NATIVE PERENNIAL FORBS					
<i>Acetosella vulgaris</i>	0.00	16.67	0.00	0.00	0.00
<i>Achillea lanulosa</i>	0.00	33.33	0.00	0.00	0.00
<i>Ambrosia psilostachya var. coronopifolia</i>	0.33	66.67	0.63	0.33	0.60
<i>Apocynum cannabinum</i>	0.33	83.33	0.63	0.33	0.60
<i>Artemisia ludoviciana</i>	0.17	16.67	0.32	0.17	0.30
<i>Asclepias speciosa</i>	0.33	66.67	0.63	0.33	0.60
<i>Aster lanceolatus ssp. hesperius</i>	0.33	33.33	0.63	0.33	0.60
<i>Aster porteri</i>	0.00	16.67	0.00	0.00	0.00
<i>Dalea purpurea</i>	0.00	16.67	0.00	0.00	0.00
<i>Epilobium ciliatum</i>	0.00	16.67	0.00	0.00	0.00
<i>Erigeron flagellaris</i>	0.00	16.67	0.00	0.00	0.00
<i>Evolvulus nuttalianus</i>	0.00	16.67	0.00	0.00	0.00
<i>Gaura coccinea</i>	0.00	16.67	0.00	0.00	0.00
<i>Heterotheca fulcrata</i>	0.00	16.67	0.00	0.00	0.00
<i>Heterotheca villosa</i>	0.00	16.67	0.00	0.00	0.00
<i>Liatris punctata</i>	0.00	16.67	0.00	0.00	0.00
<i>Lycopus americanus</i>	0.00	16.67	0.00	0.00	0.00
<i>Mentha arvensis</i>	0.17	16.67	0.32	0.17	0.30
<i>Oenothera villosa</i>	0.00	50.00	0.00	0.00	0.00
<i>Oligoneuron rigidum</i>	0.00	83.33	0.00	0.00	0.00
<i>Oxalis dillenii</i>	0.00	16.67	0.00	0.00	0.00
<i>Psoraleidum tenuiflorum</i>	0.17	83.33	0.32	0.17	0.30
<i>Rumex crispus</i>	0.00	33.33	0.00	0.00	0.00
<i>Sisyrinchium montanum</i>	0.00	33.33	0.00	0.00	0.00
<i>Solidago missouriensis</i>	0.17	33.33	0.32	0.17	0.30
<i>Solidago speciosa var. pallida</i>	0.00	16.67	0.00	0.00	0.00
<i>Thermopsis divaricarpa</i>	0.00	16.67	0.00	0.00	0.00
<i>Verbena hastata</i>	0.00	16.67	0.00	0.00	0.00
<i>Verbena stricta</i>	1.00	50.00	1.90	1.00	1.81
<i>Vicia americana</i>	0.00	16.67	0.00	0.00	0.00
<i>Virgulus falcatus</i>	0.83	83.33	1.58	1.00	1.81
TOTAL NATIVE PERENNIAL FORBS	3.8	100.0	7.3	4.0	7.3
INTRODUCED PERENNIAL FORBS					
<i>Breca arvensis</i>	1.50	83.33	2.85	1.67	3.02
<i>Cichorium intybus</i>	0.83	83.33	1.58	0.83	1.51
<i>Convolvulus arvensis</i>	0.17	50.00	0.32	0.17	0.30
<i>Daucus carota</i>	3.17	83.33	6.01	3.33	6.04
<i>Hypericum perforatum</i>	0.00	16.67	0.00	0.00	0.00
<i>Sonchus uliginosus</i>	0.00	16.67	0.00	0.00	0.00
<i>Taraxacum officinale</i>	0.50	66.67	0.95	0.50	0.91
<i>Trifolium repens</i>	0.00	66.67	0.00	0.00	0.00
TOTAL INTRO. PERENNIAL FORBS	6.2	100.0	11.7	6.5	11.8

Table 1. Cover Data – Area 3, Boulder City Open Space, CO – 1997

PLANT SPECIES	AVERAGE COVER (%)	FREQUENCY (%)	RELATIVE VEGETATION COVER (%)	AVERAGE COVER-ALL (%)	RELATIVE VEGETATION COVER-ALL (%)
NATIVE PERENNIAL GRASSES (cool)					
<i>Carex lanuginosa</i>	0.83	33.33	1.58	0.83	1.51
<i>Carex nebrascensis</i>	0.00	33.33	0.00	0.00	0.00
<i>Carex praegracilis</i>	2.17	66.67	4.11	2.17	3.93
<i>Critesion jubatum</i>	0.00	16.67	0.00	0.00	0.00
<i>Dicanthelium oligosanthes</i> var. <i>scribnerianum</i>	0.17	16.67	0.32	0.17	0.30
<i>Eleocharis palustris</i>	0.33	66.67	0.63	0.33	0.60
<i>Juncus arcticus</i> ssp. <i>ater</i>	8.67	100.00	16.46	8.83	16.01
<i>Juncus interior</i>	0.33	83.33	0.63	0.33	0.60
<i>Juncus longistylis</i>	0.17	83.33	0.32	0.17	0.30
<i>Juncus saximontanus</i>	0.17	66.67	0.32	0.17	0.30
<i>Juncus</i> spp.	0.17	33.33	0.32	0.17	0.30
<i>Poa agassizensis</i>	5.50	100.00	10.44	5.83	10.57
<i>Poa compressa</i>	2.00	50.00	3.80	2.17	3.93
<i>Typha latifolia</i>	0.00	16.67	0.00	0.00	0.00
TOTAL NATIVE PERENNIAL GRASSES (c)	20.5	100.0	38.9	21.2	38.4
INTRODUCED PERENNIAL GRASSES (cool)					
<i>Agrostis stolonifera</i>	2.83	100.00	5.38	3.17	5.74
<i>Bromopsis inermis</i>	0.17	33.33	0.32	0.17	0.30
<i>Dactylis glomerata</i>	0.50	50.00	0.95	0.50	0.91
<i>Elytrigia repens</i>	0.17	83.33	0.32	0.17	0.30
<i>Phleum pratense</i>	0.00	50.00	0.00	0.00	0.00
TOTAL INTRO. PERENNIAL GRASSES (c)	3.7	100.0	7.0	4.0	7.3
NATIVE PERENNIAL GRASSES (warm)					
<i>Andropogon gerardii</i>	1.00	83.33	1.90	1.17	2.11
<i>Chondrosium gracile</i>	0.00	16.67	0.00	0.00	0.00
<i>Chondrosium hirsutum</i>	0.00	16.67	0.00	0.00	0.00
<i>Muhlenbergia asperifolia</i>	0.33	83.33	0.63	0.67	1.21
<i>Panicum virgatum</i>	4.33	100.00	8.23	4.50	8.16
<i>Schizachyrium scoparium</i>	0.00	33.33	0.00	0.00	0.00
<i>Sorghastrum avenaceum</i>	3.50	100.00	6.65	3.67	6.65
<i>Spartina pectinata</i>	1.00	16.67	1.90	1.00	1.81
<i>Sporobolus asper</i>	3.50	83.33	6.65	3.67	6.65
<i>Sporobolus cryptandrus</i>	0.67	16.67	1.27	0.67	1.21
<i>Sporobolus heterolepis</i>	0.17	16.67	0.32	0.17	0.30
TOTAL NATIVE PERENNIAL GRASSES (w)	14.5	100.0	27.5	15.5	28.1
NATIVE SHRUBS					
<i>Crataegus macracantha</i> var. <i>occidentalis</i>	0.00	16.67	0.00	0.00	0.00
<i>Rosa sayi</i>	0.00	66.67	0.00	0.00	0.00
<i>Rosa woodsii</i>	0.83	33.33	1.58	0.83	1.51
<i>Symphoricarpos rotundifolius</i>	0.17	50.00	0.32	0.17	0.30
<i>Yucca glauca</i>	0.00	16.67	0.00	0.00	0.00
TOTAL NATIVE SHRUBS	1.0	100.0	1.9	1.0	1.8
INTRODUCED TREES					
<i>Elaeagnus angustifolia</i>	0.00	16.67	0.00	0.00	0.00
TOTAL INTRODUCED TREES	0.0	16.7	0.0	0.0	0.0
FERNS					
<i>Hippochaete laevigata</i>	0.17	66.67	0.32	0.17	0.30
TOTAL FERNS	0.2	66.7	0.3	0.2	0.3
SUCCULENT					
<i>Opuntia macrorhiza</i>	0.17	33.33	0.32	0.17	0.30
TOTAL SUCCULENT	0.2	33.3	0.3	0.2	0.3

Table 1. Cover Data – Area 3, Boulder City Open Space, CO – 1997

PLANT SPECIES	AVERAGE COVER (%)	FREQUENCY (%)	RELATIVE VEGETATION COVER (%)	AVERAGE COVER-ALL (%)	RELATIVE VEGETATION COVER-ALL (%)
Standing dead	1.50	66.67		1.50	
Litter	38.83	100.00		38.83	
Bare soil	6.17	100.00		6.17	
Rock	0.67	50.00		0.67	
Water	0.17	16.67		0.17	
TOTALS	100.0			102.5	
TOTAL VEGETATION COVER	52.7 (s=4.5)		100.0	55.2 (s=4.2)	100.0
GROUND COVER (Litter+Rock+Veg+St.Dead)	93.8			96.3	
SPECIES DENSITY (# of species/100 sq.m.) (AVERAGE= 39.0 Std.Dev.= 7.7)					

Table 1. Cover Data -- Area 3, Boulder City Open Space, CO -- 1997

PLANT SPECIES	Percent Foliar Cover*					
	----- SAMPLE NUMBER -----					
	1	2	3	4	5	6
NATIVE ANNUAL & BIENNIAL FORBS						
<i>Dracocephalum parviflorum</i>	P				P	P
<i>Grindelia squarrosa</i>		P				P
TOTAL NATIVE ANN. & BIEN. FORBS	P	P	---	---	P	P
INTRODUCED ANNUAL & BIENNIAL FORBS						
<i>Acosta diffusa</i>		P				
<i>Alyssum minus</i>						P
<i>Cirsium vulgare</i>			P	P		
<i>Dianthus armeria</i>		P	P		P	P
<i>Lactuca serriola</i>	P					
<i>Medicago lupulina</i>			1			
<i>Melilotus alba</i>						P
<i>Melilotus officinalis</i>					P	
<i>Neolepia campestre</i>		P				
<i>Plantago lanceolata</i>	P	5	1	1	P	8
<i>Tragopogon dubius ssp. major</i>		P	P			
TOTAL INTRO. ANN. & BIEN. FORBS	P	5	2	1	P	8
INTRODUCED ANNUAL GRASSES						
<i>Bromus japonicus</i>		P				
TOTAL INTRO. ANN. GRASSES	---	P	---	---	---	---
NATIVE PERENNIAL FORBS						
<i>Acetosella vulgaris</i>		P				
<i>Achillea lanulosa</i>		P				
<i>Ambrosia psilostachya var. coronopifolia</i>		P	1		P	1
<i>Apocynum cannabinum</i>	P		P	1	1	P
<i>Artemisia ludoviciana</i>		1				
<i>Asclepias speciosa</i>	P			P	P	2
<i>Aster lanceolatus ssp. hesperius</i>				P	2	
<i>Aster porteri</i>		P				
<i>Dalea purpurea</i>		P				
<i>Epilobium ciliatum</i>				P		
<i>Erigeron flagellaris</i>		P				
<i>Evolvulus nuttalianus</i>		P				
<i>Gaura coccinea</i>		P				
<i>Heterotheca fulcrata</i>						P
<i>Heterotheca villosa</i>		P				
<i>Liatris punctata</i>		P				
<i>Lycopus americanus</i>				P		
<i>Mentha arvensis</i>				1		
<i>Oenothera villosa</i>	P	P		P		
<i>Oligoneuron rigidum</i>		P	P	P	P	P
<i>Oxalis dillenii</i>		P				
<i>Psoraleidum tenuiflorum</i>		P	1	P	P	P
<i>Rumex crispus</i>	P			P		
<i>Sisyrinchium montanum</i>					P	P
<i>Solidago missouriensis</i>		P		1		
<i>Solidago speciosa var. pallida</i>		P				
<i>Thermopsis divaricarpa</i>						P
<i>Verbena hastata</i>				P		
<i>Verbena stricta</i>	6			P		
<i>Vicia americana</i>					P	
<i>Virgulus falcatus</i>		1	1	1	(1)	2
TOTAL NATIVE PERENNIAL FORBS	6	2	3	4	3(1)	5
INTRODUCED PERENNIAL FORBS						
<i>Breea arvensis</i>	P		P	5(1)	1	3
<i>Cichorium intybus</i>		P	3	P	P	2
<i>Convolvulus arvensis</i>		P	1			P
<i>Daucus carota</i>		P	1	1	12(1)	5
<i>Hypericum perforatum</i>		P				
<i>Sonchus uliginosus</i>				P		
<i>Taraxacum officinale</i>		P		1	1	1
<i>Trifolium repens</i>		P	P		P	P
TOTAL INTRO. PERENNIAL FORBS	P	P	5	7(1)	14(1)	11

Table 1. Cover Data -- Area 3, Boulder City Open Space, CO -- 1997

PLANT SPECIES	Percent Foliar Cover*					
	----- SAMPLE NUMBER -----					
	1	2	3	4	5	6
NATIVE PERENNIAL GRASSES (cool)						
<i>Carex lanuginosa</i>				5	P	
<i>Carex nebrascensis</i>	P			P		
<i>Carex praegracilis</i>	5		3	3	2	
<i>Critesion jubatum</i>	P					
<i>Dicanthelium oligosanthes</i> var. <i>scribnerianum</i>		1				
<i>Eleocharis palustris</i>	1			P	P	1
<i>Juncus arcticus</i> ssp. <i>ater</i>	25	3	1	20(1)	P	3
<i>Juncus interior</i>	2	P	P	P		P
<i>Juncus longistylis</i>	P	P		P	1	P
<i>Juncus saximontanus</i>	P			1	P	P
<i>Juncus</i> spp.				P	1	
<i>Poa agassizensis</i>	1	7	22(1)	P	2(1)	1
<i>Poa compressa</i>		12(1)	P			P
<i>Typha latifolia</i>	P					
TOTAL NATIVE PERENNIAL GRASSES (c)	34	23(1)	26(1)	29(1)	6(1)	5
INTRODUCED PERENNIAL GRASSES (cool)						
<i>Agrostis stolonifera</i>	P	P	P	6	3	8(2)
<i>Bromopsis inermis</i>			1			P
<i>Dactylis glomerata</i>		3	P		P	
<i>Elytrigia repens</i>	P		P	1	P	P
<i>Phleum pratense</i>		P	P			P
TOTAL INTRO. PERENNIAL GRASSES (c)	P	3	1	7	3	8(2)
NATIVE PERENNIAL GRASSES (warm)						
<i>Andropogon gerardii</i>	P	3(1)	P	P	3	
<i>Chondrosum gracile</i>		P				
<i>Chondrosum hirsutum</i>						P
<i>Muhlenbergia asperifolia</i>	1(2)		P	1	P	P
<i>Panicum virgatum</i>	2	3	1	1	7(1)	12
<i>Schizachyrium scoparium</i>			P			P
<i>Sorghastrum avenaceum</i>	P	11	5(1)	P	4	1
<i>Spartina pectinata</i>	6					
<i>Sporobolus asper</i>		P	7	P	5	9(1)
<i>Sporobolus cryptandrus</i>				4		
<i>Sporobolus heterolepis</i>		1				
TOTAL NATIVE PERENNIAL GRASSES (w)	9(2)	18(1)	13(1)	6	19(1)	22(1)
NATIVE SHRUBS						
<i>Crataegus macracantha</i> var. <i>occidentalis</i>		P				
<i>Rosa sayi</i>		P		P	P	P
<i>Rosa woodsii</i>	4		1			
<i>Symphoricarpos rotundifolius</i>	P			P		
<i>Yucca glauca</i>		P				
TOTAL NATIVE SHRUBS	4	1	1	P	P	P
INTRODUCED TREES						
<i>Elaeagnus angustifolia</i>			P			
TOTAL INTRODUCED TREES	---	---	P	---	---	---
FERNS						
<i>Hippochaete laevigata</i>			1	P	P	P
TOTAL FERNS	---	---	1	P	P	P
SUCCULENT						
<i>Opuntia macrorhiza</i>		1				P
TOTAL SUCCULENT	---	1	---	---	---	P

Table 1. Cover Data – Area 3, Boulder City Open Space, CO – 1997

PLANT SPECIES	Percent Foliar Cover*					
	----- SAMPLE NUMBER -----					
	1	2	3	4	5	6
Standing dead			1	2	3	3
Litter	44	46	38	38	45	22
Bare soil	3	1	7	4	7	15
Rock			2	1		1
Water				1		
TOTALS	100	100	100	100	100	100
TOTAL VEGETATION COVER	53(2)	53(2)	52(2)	54(2)	45(4)	59(3)
GROUND COVER (Litter+Rock+Veg+St.Deed)	97(2)	99(2)	93(2)	96(2)	93(4)	85(3)
SPECIES DENSITY (# of species/100 sq.m.) (AVERAGE= 39.0 Std.Dev.= 7.7)	28	51	35	42	37	41

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

Table 2. Cover Data – Area 6, Boulder City Open Space, CO – 1997

PLANT SPECIES	AVERAGE COVER (%)	FREQUENCY (%)	RELATIVE VEGETATION COVER (%)	AVERAGE COVER-ALL (%)	RELATIVE VEGETATION COVER-ALL (%)
NATIVE ANNUAL & BIENNIAL FORBS					
<i>Gaura parviflora</i>	0.00	50.00	0.00	0.00	0.00
TOTAL NATIVE ANN. & BIEN. FORBS	0.0	50.0	0.0	0.0	0.0
INTRODUCED ANNUAL & BIENNIAL FORBS					
<i>Lactuca serriola</i>	0.00	100.00	0.00	0.00	0.00
<i>Plantago lanceolata</i>	0.00	50.00	0.00	0.00	0.00
TOTAL INTRO. ANN. & BIEN. FORBS	0.0	100.0	0.0	0.0	0.0
NATIVE PERENNIAL FORBS					
<i>Ambrosia psilostachya</i> var. <i>coronopifolia</i>	0.00	50.00	0.00	1.00	1.06
<i>Apocynum cannabinum</i>	1.00	100.00	1.14	1.00	1.06
<i>Asclepias speciosa</i>	5.00	100.00	5.71	5.00	5.32
<i>Rumex crispus</i>	0.00	100.00	0.00	0.00	0.00
<i>Virgulus falcatus</i>	0.00	50.00	0.00	0.00	0.00
TOTAL NATIVE PERENNIAL FORBS	6.0	100.0	6.9	7.0	7.4
INTRODUCED PERENNIAL FORBS					
<i>Breea arvensis</i>	4.50	50.00	5.14	5.50	5.85
<i>Convolvulus arvensis</i>	0.00	50.00	0.00	0.00	0.00
<i>Verbena bracteata</i>	0.00	50.00	0.00	0.00	0.00
TOTAL INTRO. PERENNIAL FORBS	4.5	50.0	5.1	5.5	5.9
NATIVE PERENNIAL GRASSES (cool)					
<i>Carex praeegracilis</i>	0.00	50.00	0.00	0.00	0.00
<i>Carex vulpinoidea</i>	2.00	100.00	2.29	2.50	2.66
<i>Eleocharis palustris</i>	2.00	50.00	2.29	2.00	2.13
<i>Juncus arcticus</i> ssp. <i>ater</i>	8.00	100.00	9.14	9.00	9.57
<i>Juncus longistylis</i>	0.00	50.00	0.00	0.00	0.00
<i>Juncus saximontanus</i>	0.00	50.00	0.00	0.00	0.00
<i>Pascopyrum smithii</i>	0.00	50.00	0.00	0.00	0.00
<i>Poa agassizensis</i>	0.00	100.00	0.00	0.50	0.53
TOTAL NATIVE PERENNIAL GRASSES (c)	12.0	100.0	13.7	14.0	14.9
INTRODUCED PERENNIAL GRASSES (cool)					
<i>Agrostis gigantea</i>	0.00	100.00	0.00	0.00	0.00
<i>Agrostis stolonifera</i>	0.00	50.00	0.00	0.00	0.00
TOTAL INTRO. PERENNIAL GRASSES (c)	0.0	100.0	0.0	0.0	0.0
NATIVE PERENNIAL GRASSES (warm)					
<i>Andropogon gerardii</i>	30.50	100.00	34.86	32.50	34.57
<i>Muhlenbergia asperifolia</i>	1.50	50.00	1.71	1.50	1.60
<i>Panicum virgatum</i>	9.00	100.00	10.29	9.00	9.57
<i>Schizachyrium scoparium</i>	0.00	50.00	0.00	0.00	0.00
<i>Sporobolus asper</i>	10.00	100.00	11.43	10.00	10.64
TOTAL NATIVE PERENNIAL GRASSES (w)	51.0	100.0	58.3	53.0	56.4
NATIVE SHRUBS					
<i>Rosa sayi</i>	13.50	100.00	15.43	14.00	14.89
<i>Symphoricarpos occidentalis</i>	0.50	50.00	0.57	0.50	0.53
TOTAL NATIVE SHRUBS	14.0	100.0	16.0	14.5	15.4
Litter	7.50	100.00		7.50	
Bare soil	4.50	50.00		4.50	
Rock	0.50	50.00		0.50	
TOTALS	100.0			106.5	
TOTAL VEGETATION COVER	87.5 (s=6.4)		100.0	94.0 (s=4.2)	100.0
GROUND COVER (Litter+Rock+Veg+St. Dead)	95.5			102.0	
SPECIES DENSITY (# of species/100 sq.m.)					
(AVERAGE= 20.0 Std.Dev.= 4.2)					

Table 2. Cover Data – Area 6, Boulder City Open Space, CO – 1997

PLANT SPECIES	Percent Foliar Cover*	
	– SAMPLE NUMBER –	
	1	2
NATIVE ANNUAL & BIENNIAL FORBS		
<i>Gaura parviflora</i>	P	
TOTAL NATIVE ANN. & BIEN. FORBS	P	---
INTRODUCED ANNUAL & BIENNIAL FORBS		
<i>Lactuca serriola</i>	P	P
<i>Plantago lanceolata</i>	P	
TOTAL INTRO. ANN. & BIEN. FORBS	P	P
NATIVE PERENNIAL FORBS		
<i>Ambrosia psilostachya</i> var. <i>coronopifolia</i>	(2)	
<i>Apocynum cannabinum</i>	2	P
<i>Asclepias speciosa</i>	9	1
<i>Rumex crispus</i>	P	P
<i>Virgulus falcatus</i>	P	
TOTAL NATIVE PERENNIAL FORBS	11(2)	1
INTRODUCED PERENNIAL FORBS		
<i>Breea arvensis</i>	9(2)	
<i>Convolvulus arvensis</i>	P	
<i>Verbena bracteata</i>	P	
TOTAL INTRO. PERENNIAL FORBS	9(2)	---
NATIVE PERENNIAL GRASSES (cool)		
<i>Carex praegracilis</i>		P
<i>Carex vulpinoidea</i>	P	4(1)
<i>Eleocharis palustris</i>		4
<i>Juncus arcticus</i> ssp. <i>ater</i>	10(2)	6
<i>Juncus longistylis</i>		P
<i>Juncus saximontanus</i>	P	
<i>Pascopyrum smithii</i>		P
<i>Poa agassizensis</i>	(1)	P
TOTAL NATIVE PERENNIAL GRASSES (c)	10(3)	14(1)
INTRODUCED PERENNIAL GRASSES (cool)		
<i>Agrostis gigantea</i>	P	P
<i>Agrostis stolonifera</i>		P
TOTAL INTRO. PERENNIAL GRASSES (c)	P	P
NATIVE PERENNIAL GRASSES (warm)		
<i>Andropogon gerardii</i>	5	56(4)
<i>Muhlenbergia asperifolia</i>	3	
<i>Panicum virgatum</i>	1	17
<i>Schizachyrium scoparium</i>	P	
<i>Sporobolus asper</i>	20	P
TOTAL NATIVE PERENNIAL GRASSES (w)	29	73(4)
NATIVE SHRUBS		
<i>Rosa sayi</i>	23(1)	4
<i>Symphoricarpos occidentalis</i>	1	
TOTAL NATIVE SHRUBS	24(1)	4
Litter	7	8
Bare soil	9	
Rock	1	
TOTALS	100	100
TOTAL VEGETATION COVER	83(8)	92(5)
GROUND COVER (Litter + Rock + Veg + St. Dead)	91(8)	100(5)
SPECIES DENSITY (# of species/100 sq.m.)	23	17
(AVERAGE = 20.0 Std.Dev. = 4.2)		

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

Table 3. Cover Data – Area 7, Boulder City Open Space, CO – 1997

PLANT SPECIES	AVERAGE COVER (%)	FREQUENCY (%)	RELATIVE VEGETATION COVER (%)	AVERAGE COVER-ALL (%)	RELATIVE VEGETATION COVER-ALL (%)
NATIVE ANNUAL & BIENNIAL FORBS					
<i>Chamaesyce</i> spp.	0.00	10.00	0.00	0.00	0.00
<i>Chenopodium rubrum</i>	0.00	10.00	0.00	0.00	0.00
<i>Cirsium undulatum</i>	0.00	50.00	0.00	0.00	0.00
<i>Erigeron divergens</i>	0.10	40.00	0.17	0.20	0.30
<i>Erysimum asperum</i>	0.00	20.00	0.00	0.00	0.00
<i>Gaura parviflora</i>	0.00	10.00	0.00	0.00	0.00
<i>Grindelia squarrosa</i>	0.00	50.00	0.00	0.00	0.00
<i>Oligosporus pacificus</i>	0.00	60.00	0.00	0.00	0.00
<i>Oreocarya virgata</i>	0.00	40.00	0.00	0.00	0.00
<i>Plantago patagonica</i>	0.00	40.00	0.00	0.00	0.00
<i>Pterogonum alatum</i>	0.00	20.00	0.00	0.00	0.00
<i>Silene antirrhina</i>	0.00	40.00	0.00	0.00	0.00
TOTAL NATIVE ANN. & BIEN. FORBS	0.1	90.0	0.2	0.2	0.3
INTRODUCED ANNUAL & BIENNIAL FORBS					
<i>Acosta diffusa</i>	0.00	10.00	0.00	0.00	0.00
<i>Alyssum minus</i>	0.10	60.00	0.17	0.10	0.15
<i>Camelina microcarpa</i>	0.00	10.00	0.00	0.00	0.00
<i>Carduus nutans</i> ssp. <i>macrolepis</i>	0.00	20.00	0.00	0.00	0.00
<i>Cynoglossum officinale</i>	0.00	10.00	0.00	0.00	0.00
<i>Dianthus armeria</i>	0.00	70.00	0.00	0.00	0.00
<i>Erodium cicutarium</i>	0.40	30.00	0.68	0.50	0.74
<i>Lactuca serriola</i>	0.00	40.00	0.00	0.00	0.00
<i>Lepidium densiflorum</i>	0.00	20.00	0.00	0.00	0.00
<i>Medicago lupulina</i>	0.00	10.00	0.00	0.00	0.00
<i>Noccaea montana</i>	0.00	40.00	0.00	0.00	0.00
<i>Plantago lanceolata</i>	1.50	80.00	2.53	1.80	2.66
<i>Podospermum laciniatum</i>	0.00	40.00	0.00	0.00	0.00
<i>Polygonum arenastrum</i>	0.00	10.00	0.00	0.00	0.00
<i>Sisymbrium altissimum</i>	0.00	20.00	0.00	0.00	0.00
<i>Tragopogon dubius</i> ssp. <i>major</i>	0.40	80.00	0.68	0.50	0.74
<i>Verbascum thapsus</i>	0.30	20.00	0.51	0.30	0.44
<i>Xanthium strumarium</i>	0.00	10.00	0.00	0.00	0.00
TOTAL INTRO. ANN. & BIEN. FORBS	2.7	100.0	4.6	3.2	4.7
INTRODUCED ANNUAL GRASSES					
<i>Bromus japonicus</i>	0.40	70.00	0.68	0.60	0.89
TOTAL INTRO. ANN. GRASSES	0.4	70.0	0.7	0.6	0.9
NATIVE PERENNIAL FORBS					
<i>Acetosella vulgaris</i>	1.50	70.00	2.53	2.00	2.96
<i>Achillea lanulosa</i>	0.00	50.00	0.00	0.00	0.00
<i>Ambrosia psilostachya</i> var. <i>coronopifolia</i>	1.40	100.00	2.36	1.60	2.37
<i>Artemisia frigida</i>	0.20	70.00	0.34	0.20	0.30
<i>Artemisia ludoviciana</i>	0.10	60.00	0.17	0.30	0.44
<i>Asclepias asperula</i>	0.00	10.00	0.00	0.00	0.00
<i>Asclepias stenophylla</i>	0.00	20.00	0.00	0.00	0.00
<i>Aster lanceolatus</i> ssp. <i>hesperius</i>	0.00	10.00	0.00	0.00	0.00
<i>Aster porteri</i>	0.40	80.00	0.68	0.40	0.59
<i>Astragalus crassicaarpus</i>	0.00	10.00	0.00	0.00	0.00
<i>Astragalus miser</i> var. <i>oblongifolius</i>	0.00	10.00	0.00	0.00	0.00
<i>Brickellia rosmarinifolia</i> ssp. <i>chlorolepis</i>	0.10	40.00	0.17	0.10	0.15
<i>Calylophus serrulatus</i>	0.00	30.00	0.00	0.00	0.00
<i>Cerastium strictum</i>	0.10	20.00	0.17	0.10	0.15
<i>Comandra umbellata</i> ssp. <i>pallida</i>	0.00	40.00	0.00	0.00	0.00
<i>Dalea purpurea</i>	0.00	70.00	0.00	0.00	0.00
<i>Delphinium</i> spp.	0.00	10.00	0.00	0.00	0.00
<i>Drymocallis fissa</i>	0.00	30.00	0.00	0.00	0.00
<i>Epilobium ciliatum</i>	0.00	10.00	0.00	0.00	0.00
<i>Erigeron flagellaris</i>	0.80	20.00	1.35	0.80	1.18
<i>Eriogonum flavum</i> var. <i>flavum</i>	0.10	10.00	0.17	0.10	0.15
<i>Evolvulus nuttalianus</i>	0.00	40.00	0.00	0.00	0.00
<i>Gaillardia aristata</i>	0.00	10.00	0.00	0.00	0.00
<i>Gaura coccinea</i>	0.00	10.00	0.00	0.00	0.00

Table 3. Cover Data – Area 7, Boulder City Open Space, CO – 1997

PLANT SPECIES	AVERAGE COVER (%)	FREQUENCY (%)	RELATIVE VEGETATION COVER (%)	AVERAGE COVER-ALL (%)	RELATIVE VEGETATION COVER-ALL (%)
NATIVE PERENNIAL FORBS (concluded)					
Geranium spp.	0.00	10.00	0.00	0.00	0.00
Gutierrezia sarothrae	0.20	40.00	0.34	0.30	0.44
Heliomeris multiflora	0.00	10.00	0.00	0.00	0.00
Heterotheca fulcrata	0.10	60.00	0.17	0.10	0.15
Heterotheca villosa	0.00	10.00	0.00	0.00	0.00
Iris missouriensis	0.10	30.00	0.17	0.20	0.30
Lesquerella montana	0.00	10.00	0.00	0.00	0.00
Liatris punctata	0.20	60.00	0.34	0.20	0.30
Lithospermum ruderales	0.00	40.00	0.00	0.00	0.00
Lupinus argenteus	0.10	30.00	0.17	0.10	0.15
Lycopus americanus	0.00	10.00	0.00	0.00	0.00
Mentha arvensis	0.00	10.00	0.00	0.00	0.00
Oenothera villosa	0.00	20.00	0.00	0.00	0.00
Oligoneuron rigidum	0.00	40.00	0.00	0.00	0.00
Oxalis dillenii	0.00	70.00	0.00	0.00	0.00
Oxybaphus hirsutus	0.00	10.00	0.00	0.00	0.00
Oxybaphus linearis	0.10	80.00	0.17	0.10	0.15
Oxytropis x sericea	0.00	50.00	0.00	0.00	0.00
Paronychia jamesii	0.20	20.00	0.34	0.20	0.30
Penstemon strictus	0.00	20.00	0.00	0.00	0.00
Phacelia heterophylla	0.10	40.00	0.17	0.10	0.15
Pneumonanthe parryi	0.00	10.00	0.00	0.00	0.00
Potentilla hippiana	0.00	10.00	0.00	0.00	0.00
Potentilla spp.	0.00	10.00	0.00	0.00	0.00
Psoralidium tenuiflorum	1.40	80.00	2.36	1.40	2.07
Ratibida columnifera	0.00	50.00	0.00	0.00	0.00
Rumex triangulivalvis	0.00	10.00	0.00	0.10	0.15
Senecio spartioides	0.00	20.00	0.00	0.00	0.00
Solanum spp.	0.00	10.00	0.00	0.00	0.00
Talinum parviflorum	0.00	30.00	0.00	0.00	0.00
Thermopsis rhombifolia	0.10	30.00	0.17	0.20	0.30
Tragia ramosa	0.00	10.00	0.00	0.00	0.00
Verbena hastata	0.00	10.00	0.00	0.10	0.15
Virgulus falcatus	0.40	90.00	0.68	0.40	0.59
TOTAL NATIVE PERENNIAL FORBS	7.7	100.0	13.0	9.1	13.5
INTRODUCED PERENNIAL FORBS					
Breca arvensis	0.70	50.00	1.18	1.40	2.07
Cichorium intybus	2.20	70.00	3.72	2.50	3.70
Convolvulus arvensis	1.20	60.00	2.03	1.40	2.07
Hypericum perforatum	0.00	80.00	0.00	0.00	0.00
Lotus tenuis	0.00	10.00	0.00	0.00	0.00
Taraxacum officinale	0.20	80.00	0.34	0.40	0.59
Trifolium repens	0.00	10.00	0.00	0.00	0.00
Verbena bracteata	0.00	10.00	0.00	0.00	0.00
TOTAL INTRO. PERENNIAL FORBS	4.3	100.0	7.3	5.7	8.4
NATIVE PERENNIAL GRASSES (cool)					
Agrostis scabra	0.00	30.00	0.00	0.00	0.00
Carex nebrascensis	0.60	10.00	1.01	0.70	1.04
Carex pensylvanica ssp. heliophila	0.50	70.00	0.84	0.80	1.18
Carex praeegracilis	0.60	20.00	1.01	0.70	1.04
Carex spp.	0.00	10.00	0.00	0.00	0.00
Critesion jubatum	0.00	10.00	0.00	0.00	0.00
Dicanthelium oligosanthos var. scribnerianum	0.00	40.00	0.00	0.00	0.00
Eleocharis palustris	0.00	20.00	0.00	0.00	0.00
Elymus longifolius	0.00	10.00	0.00	0.00	0.00
Hesperostipa comata	2.10	60.00	3.55	2.20	3.25
Juncus arcticus ssp. ater	1.20	80.00	2.03	1.60	2.37
Juncus interior	0.20	50.00	0.34	0.20	0.30
Koeleria macrantha	0.30	50.00	0.51	0.30	0.44
Pascopyrum smithii	0.20	50.00	0.34	0.20	0.30
Poa agassizensis	5.80	80.00	9.80	8.10	11.98
Poa compressa	1.30	80.00	2.20	1.70	2.51
TOTAL NATIVE PERENNIAL GRASSES (c)	12.8	100.0	21.6	16.5	24.4

Table 3. Cover Data – Area 7, Boulder City Open Space, CO – 1997

PLANT SPECIES	AVERAGE COVER (%)	FREQUENCY (%)	RELATIVE VEGETATION COVER (%)	AVERAGE COVER-ALL (%)	RELATIVE VEGETATION COVER-ALL (%)
INTRODUCED PERENNIAL GRASSES (cool)					
<i>Agrostis stolonifera</i>	0.00	10.00	0.00	0.00	0.00
<i>Dactylis glomerata</i>	0.00	10.00	0.00	0.00	0.00
<i>Phleum pratense</i>	0.00	10.00	0.00	0.00	0.00
TOTAL INTRO. PERENNIAL GRASSES (c)	0.0	30.0	0.0	0.0	0.0
NATIVE PERENNIAL GRASSES (warm)					
<i>Andropogon gerardii</i>	10.20	90.00	17.23	10.50	15.53
<i>Aristida purpurea</i>	0.00	30.00	0.00	0.00	0.00
<i>Bouteloua curtipendula</i>	0.20	60.00	0.34	0.20	0.30
<i>Buchloe dactyloides</i>	0.00	20.00	0.00	0.00	0.00
<i>Calamovilfa longifolia</i>	0.00	10.00	0.00	0.00	0.00
<i>Chondrosium gracile</i>	1.20	80.00	2.03	1.40	2.07
<i>Chondrosium hirsutum</i>	0.30	60.00	0.51	0.30	0.44
<i>Muhlenbergia cuspidata</i>	0.40	40.00	0.68	0.40	0.59
<i>Muhlenbergia filiculmis</i>	0.00	20.00	0.00	0.00	0.00
<i>Panicum virgatum</i>	5.40	90.00	9.12	5.60	8.28
<i>Schizachyrium scoparium</i>	0.30	70.00	0.51	0.30	0.44
<i>Sorghastrum avenaceum</i>	1.10	80.00	1.86	1.10	1.63
<i>Spartina pectinata</i>	8.50	20.00	14.36	8.60	12.72
<i>Sporobolus asper</i>	1.30	40.00	2.20	1.30	1.92
<i>Sporobolus cryptandrus</i>	0.30	50.00	0.51	0.30	0.44
<i>Sporobolus heterolepis</i>	0.80	40.00	1.35	0.80	1.18
TOTAL NATIVE PERENNIAL GRASSES (w)	30.0	100.0	50.7	30.8	45.6
NATIVE SHRUBS					
<i>Amorpha nana</i>	0.00	20.00	0.00	0.00	0.00
<i>Eriogonum effusum</i>	0.00	10.00	0.00	0.00	0.00
<i>Rosa sayi</i>	0.90	50.00	1.52	0.90	1.33
<i>Symphoricarpos occidentalis</i>	0.10	20.00	0.17	0.10	0.15
<i>Yucca glauca</i>	0.00	30.00	0.00	0.00	0.00
TOTAL NATIVE SHRUBS	1.0	70.0	1.7	1.0	1.5
INTRODUCED SHRUBS					
<i>Rhamnus cathartica</i>	0.00	10.00	0.00	0.00	0.00
TOTAL INTRODUCED SHRUBS	0.0	10.0	0.0	0.0	0.0
FERNS					
<i>Hippochaete variegata</i>	0.00	10.00	0.00	0.00	0.00
TOTAL FERNS	0.0	10.0	0.0	0.0	0.0
SUCCULENT					
<i>Coryphantha vivipara</i> var. <i>vivipara</i>	0.00	10.00	0.00	0.00	0.00
<i>Echinocereus viridiflorus</i>	0.10	50.00	0.17	0.30	0.44
<i>Opuntia fragilis</i>	0.10	50.00	0.17	0.20	0.30
<i>Opuntia macrorhiza</i>	0.00	80.00	0.00	0.00	0.00
<i>Pediocactus simpsonii</i>	0.00	10.00	0.00	0.00	0.00
TOTAL SUCCULENT	0.2	80.0	0.3	0.5	0.7
Standing dead	0.30	20.00		0.30	
Litter	24.00	100.00		24.00	
Bare soil	12.70	100.00		12.70	
Rock	3.80	70.00		3.80	
TOTALS	100.0			108.4	
TOTAL VEGETATION COVER	59.2 (s=13.5)		100.0	67.6 (s=16.4)	100.0
GROUND COVER (Litter+Rock+Veg+St.Dead)	87.3			95.7	
SPECIES DENSITY (# of species/100 sq.m.)					
(AVERAGE = 51.3 Std.Dev. = 19.4)					

SPECIES	Percent Foliar Cover*										10
	----- SAMPLE NUMBER -----										
	1	2	3	4	5	6	7	8	9	10	
PERENNIAL & BIENNIAL FORBS											
<i>Salvia</i> spp.					P						
<i>Podium rubrum</i>						P					2(1)
<i>Podium undulatum</i>		P	P			P			P	P	
<i>Podium divergens</i>		P	P	P					1(1)		1
<i>Podium asperum</i>		P	P								
<i>Podium parviflora</i>								P			
<i>Podium squarrosa</i>	P	P			P				P	P	P
<i>Podium pacificus</i>		P	P	P		P			P	P	P
<i>Podium virgata</i>		P	P			P				P	P
<i>Podium patagonica</i>		P	P						P	P	P
<i>Podium alatum</i>			P							P	P
<i>Podium rhina</i>		P	P		P					P	P
PERENNIAL ANN. & BIEN. FORBS											
	P	P	P	P	P	P	---	P	1(1)	P	
PERENNIAL ANNUAL & BIENNIAL FORBS											
<i>Podium</i>									P		P
<i>Podium minus</i>		P	P	P	P				P	1	P
<i>Podium microcarpa</i>			P								P
<i>Podium nutans</i> ssp. <i>macrolepis</i>		P				P					2
<i>Podium officinale</i>						P					P
<i>Podium sermeria</i>	P	P		P	P		P		P	P	P
<i>Podium cicutarium</i>		4(1)		P					P		P
<i>Podium serriola</i>			P		P	P					P
<i>Podium densiflorum</i>			P								P
<i>Podium lupulina</i>									P		2
<i>Podium montana</i>		P			P	P			P		P
<i>Podium lanceolata</i>	P	P		P	P	P	P		15(3)	P	P
<i>Podium laciniatum</i>		P		P		P			P		P
<i>Podium arenastrum</i>								P			P
<i>Podium altissimum</i>		P	P								P
<i>Podium dubius</i> ssp. <i>major</i>	P	1	P	(1)	P	1			2	P	P
<i>Podium thapsus</i>		2				1					P
<i>Podium strumarium</i>					P						P
PERENNIAL ANN. & BIEN. FORBS											
	P	7(1)	P	(1)	P	2	P	P	17(3)	1	P
PERENNIAL ANNUAL GRASSES											
<i>Podium monicus</i>		2	1(2)	1	P	P			P	P	
PERENNIAL ANN. GRASSES											
	---	2	1(2)	1	P	P	---	---	P	P	
PERENNIAL FORBS											
<i>Podium vulgare</i>		P	1	P	(1)	6(3)			2	6(1)	P
<i>Podium ulosa</i>		P		P	P	P			P		P
<i>Podium psilostachya</i> var. <i>coronopifolia</i>	P	1	1	P	(1)	3	P	P	1	8(1)	P
<i>Podium frigida</i>		P	1	P	P	P			P	1	
<i>Podium andoviciana</i>	P	P	P	1(1)	(1)						P
<i>Podium asperula</i>											P
<i>Podium stenophylla</i>				P					P		
<i>Podium anceplatus</i> ssp. <i>hesperius</i>								P			
<i>Podium</i>	1	P	P	1	P		P		P	2	
<i>Podium brassicarpus</i>									P		
<i>Podium miser</i> var. <i>oblongifolius</i>						P					1(1)
<i>Podium rosmarinifolia</i> ssp. <i>chlorolepis</i>		1				P			P	P	
<i>Podium serrulatus</i>			P			P				P	
<i>Podium strictum</i>			P							1	P
<i>Podium umbellata</i> ssp. <i>pallida</i>			P	P		P				P	P
<i>Podium purpurea</i>	P	P	P	P		P			P	P	P
<i>Podium</i> spp.						P					1
<i>Podium fissa</i>		P	P			P					
<i>Podium ciliatum</i>								P			
<i>Podium flagellaris</i>						P					8
<i>Podium</i> var. <i>flavum</i>			1								P
<i>Podium italicus</i>		P	P						P	P	P
<i>Podium aristata</i>				P							2(1)
<i>Podium coccinea</i>									P		

Table 3. Cover Data -- Area 7, Boulder City Open Space, CO -- 1997

PLANT SPECIES	Percent Foliar Cover*									
	----- SAMPLE NUMBER -----									
	1	2	3	4	5	6	7	8	9	10
INTRODUCED PERENNIAL GRASSES (cool)										
<i>Agrostis stolonifera</i>	P									
<i>Dactylis glomerata</i>									P	
<i>Phleum pratense</i>							P			
TOTAL INTRO. PERENNIAL GRASSES (c)	P	---	---	---	---	---	P	---	P	---
NATIVE PERENNIAL GRASSES (warm)										
<i>Andropogon gerardii</i>	10	11(1)	19	26	19(1)	6	2		6(1)	3
<i>Aristida purpurea</i>		P							P	P
<i>Bouteloua curtipendula</i>		1	P	1		P			P	P
<i>Buchloe dactyloides</i>					P					P
<i>Calamovilfa longifolia</i>									P	
<i>Chondrosium gracile</i>	P	3	(1)	2	P	2			2	3(1)
<i>Chondrosium hirsutum</i>	2	P		1		P	P			P
<i>Muhlenbergia cuspidata</i>	2			P			2			P
<i>Muhlenbergia filiculmis</i>		P	P							
<i>Panicum virgatum</i>	5(1)	6	2	4	3	21	6(1)		1	6
<i>Schizachyrium scoparium</i>	P		P	P		P	P		2	1
<i>Sorghastrum avenaceum</i>	1	P	P	2		P	5		2	1
<i>Spartina pectinata</i>					5			80(1)		
<i>Sporobolus asper</i>	10			P			3			P
<i>Sporobolus cryptandrus</i>		2	P			P			P	1
<i>Sporobolus heterolepis</i>	2			1		P	5			
TOTAL NATIVE PERENNIAL GRASSES (w)	32(1)	23(1)	21(1)	37	27(1)	29	23(1)	80(1)	13(1)	15(1)
NATIVE SHRUBS										
<i>Amorpha nana</i>		P							P	
<i>Eriogonum effusum</i>			P							
<i>Rosa sayi</i>		P			5	2	2		P	
<i>Symphoricarpos occidentalis</i>		P			1					
<i>Yucca glauca</i>			P			P				P
TOTAL NATIVE SHRUBS	---	P	P	---	6	2	2	---	P	P
INTRODUCED SHRUBS										
<i>Rhamnus cathartica</i>										P
TOTAL INTRODUCED SHRUBS	---	---	---	---	---	---	---	---	---	P
FERNS										
<i>Hippochaete variegata</i>						P				
TOTAL FERNS	---	---	---	---	---	P	---	---	---	---
SUCCULENT										
<i>Coryphantha vivipara</i> var. <i>vivipara</i>						P				
<i>Echinocereus viridiflorus</i>		P	1(2)	P		P				P
<i>Opuntia fragilis</i>		(1)	1			P			P	P
<i>Opuntia macrorhiza</i>	P	P	P	P	P	P			P	P
<i>Pediocactus simpsonii</i>										P
TOTAL SUCCULENT	P	(1)	2(2)	P	P	P	---	---	P	P
Standing dead			1						2	
Litter	20	24	39	29	20	25	20	10	26	27
Bare soil	23	22	9	20	4	14	12	5	7	11
Rock	9	7	5	2	1	3				11
TOTALS	100	100	100	100	100	100	100	100	100	100
TOTAL VEGETATION COVER	48(5)	47(5)	46(7)	49(5)	75(16)	58(10)	68(12)	85(8)	65(11)	51(5)
GROUND COVER (Litter+Rock+Veg+St.Dead)	77(5)	78(5)	91(7)	80(5)	96(16)	86(10)	88(12)	95(8)	93(11)	89(5)
SPECIES DENSITY (# of species/100 sq.m.)	33	72	58	54	50	66	31	14	64	71
(AVERAGE= 51.3 Std.Dev.= 19.4)										

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

Table 4. Frequency Data – Area 3, Transect 1, Boulder City Open Space, CO – 1997

PLANT SPECIES	FREQUENCY (%)	PRESENCE* ----- SAMPLE NUMBER -----										
		1	2	3	4	5	6	7	8	9	10	
NATIVE ANNUAL & BIENNIAL FORBS												
<i>Dracocephalum parviflorum</i>	10.00											P
TOTAL NATIVE ANN. & BIEN. FORBS	10.0											P
INTRODUCED ANNUAL & BIENNIAL FORBS												
<i>Plantago lanceolata</i>	10.00	P										
TOTAL INTRO. ANN. & BIEN. FORBS	10.0	P										
NATIVE PERENNIAL FORBS												
<i>Apocynum cannabinum</i>	30.00	P		P		P						
<i>Oenothera villosa</i>	30.00						P			P		
<i>Verbena stricta</i>	30.00									P	P	P
TOTAL NATIVE PERENNIAL FORBS	70.0	P		P		P	P			P	P	P
INTRODUCED PERENNIAL FORBS												
<i>Breca arvensis</i>	80.00	P		P		P	P	P	P	P	P	P
TOTAL INTRO. PERENNIAL FORBS	80.0	P		P		P	P	P	P	P	P	P
NATIVE PERENNIAL GRASSES (cool)												
<i>Carex nebrascensis</i>	10.00											P
<i>Carex praegracilis</i>	80.00	P	P	P	P			P		P	P	P
<i>Critesion jubatum</i>	20.00										P	P
<i>Eleocharis palustris</i>	20.00	P					P					
<i>Juncus arcticus ssp. ater</i>	100.00	P	P	P	P	P	P	P	P	P	P	P
<i>Juncus interior</i>	100.00	P	P	P	P	P	P	P	P	P	P	P
<i>Juncus longistylis</i>	10.00	P										
<i>Juncus saximontanus</i>	40.00					P		P	P	P		
<i>Poa agassizensis</i>	60.00		P	P				P	P	P		P
TOTAL NATIVE PERENNIAL GRASSES (c)	100.0	P	P	P	P	P	P	P	P	P	P	P
INTRODUCED PERENNIAL GRASSES (cool)												
<i>Agrostis stolonifera</i>	50.00	P		P	P	P						P
<i>Elytrigia repens</i>	20.00			P	P							
TOTAL INTRO. PERENNIAL GRASSES (c)	50.0	P		P	P	P						P
NATIVE PERENNIAL GRASSES (warm)												
<i>Muhlenbergia asperifolia</i>	70.00	P	P	P	P				P		P	P
<i>Panicum virgatum</i>	50.00	P	P	P	P	P						
<i>Sorghastrum avenaceum</i>	20.00				P	P						
<i>Spartina pectinata</i>	40.00				P	P	P	P				
TOTAL NATIVE PERENNIAL GRASSES (w)	90.0	P	P	P	P	P	P	P			P	P
NATIVE SHRUBS												
<i>Rosa woodsii</i>	50.00	P	P	P					P	P		
<i>Symphoricarpos rotundifolius</i>	10.00					P						
TOTAL NATIVE SHRUBS	60.0	P	P	P		P			P	P		
SPECIES DENSITY (# of species/5 sq.m.) (AVERAGE= 9.4 Std.Dev.= 1.7)		12	7	11	9	11	7	8	9	10	10	

*P=Present within 1m X 5m plot on right side (when standing at origin and facing the endpoint) of the cover transect.

Table 5. Frequency Data – Area 3, Transect 2, Boulder City Open Space, CO – 1997

PLANT SPECIES	FREQUENCY (%)	PRESENCE* ----- SAMPLE NUMBER -----									
		1	2	3	4	5	6	7	8	9	10
NATIVE SHRUBS											
<i>Crataegus macracantha</i> var. <i>occidentalis</i>	20.00					P	P			P ^s	
<i>Rosa sayi</i>	10.00										P
<i>Symphoricarpos rotundifolius</i>	10.00									P	
<i>Yucca glauca</i>	10.00										P
TOTAL NATIVE SHRUBS	50.0	---	---	---	---	P	P	P	P	---	P
SUCCULENT											
<i>Opuntia macrorhiza</i>	50.00			P					P	P	P
TOTAL SUCCULENT	50.0	---	---	P	---	---	---	P	P	P	P
SPECIES DENSITY (# of species/5 sq.m.) (AVERAGE= 14.6 Std.Dev.= 2.9)		15	16	11	10	12	16	18	14	15	19

*P=Present within 1m X 5m plot on right side (when standing at origin and facing the endpoint) of the cover transect.

Table 6. Frequency Data – Area 3, Transect 3, Boulder City Open Space, CO – 1997

PLANT SPECIES	FREQUENCY (%)	PRESENCE* ----- SAMPLE NUMBER -----									
		1	2	3	4	5	6	7	8	9	10
INTRODUCED ANNUAL & BIENNIAL FORBS											
<i>Cirsium vulgare</i>	20.00	P	P								
<i>Dianthus armeria</i>	20.00						P	P			
<i>Medicago lupulina</i>	20.00						P	P			
<i>Plantago lanceolata</i>	90.00		P	P	P	P	P	P	P	P	P
TOTAL INTRO. ANN. & BIEN. FORBS	100.0	P	P	P	P	P	P	P	P	P	P
NATIVE PERENNIAL FORBS											
<i>Achillea lanulosa</i>	10.00						P				
<i>Ambrosia psilostachya</i> var. <i>coronopifolia</i>	60.00	P			P	P	P			P	P
<i>Apocynum cannabinum</i>	10.00									P	
<i>Oligoneuron rigidum</i>	70.00		P		P	P	P		P	P	P
<i>Psoraleidium tenuiflorum</i>	40.00		P				P	P	P		
<i>Virgulus falcatus</i>	100.00	P	P	P	P	P	P	P	P	P	P
TOTAL NATIVE PERENNIAL FORBS	100.0	P	P	P	P	P	P	P	P	P	P
INTRODUCED PERENNIAL FORBS											
<i>Breera arvensis</i>	10.00		P								
<i>Cichorium intybus</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Convolvulus arvensis</i>	60.00	P			P	P	P	P	P		
<i>Daucus carota</i>	70.00	P	P			P	P	P		P	P
<i>Trifolium repens</i>	30.00	P							P	P	
TOTAL INTRO. PERENNIAL FORBS	100.0	P	P	P	P	P	P	P	P	P	P
NATIVE PERENNIAL GRASSES (cool)											
<i>Carex praegracilis</i>	30.00				P		P		P		
<i>Juncus arcticus</i> ssp. <i>ater</i>	70.00	P	P	P	P		P	P	P		
<i>Juncus interior</i>	10.00				P						
<i>Poa agassizensis</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Poa compressa</i>	30.00						P			P	P
TOTAL NATIVE PERENNIAL GRASSES (c)	100.0	P	P	P	P	P	P	P	P	P	P
INTRODUCED PERENNIAL GRASSES (cool)											
<i>Agrostis stolonifera</i>	50.00				P	P			P	P	P
<i>Bromopsis inermis</i>	10.00							P			
<i>Dactylis glomerata</i>	20.00	P				P					
TOTAL INTRO. PERENNIAL GRASSES (c)	70.0	P	---	---	P	P	---	P	P	P	P
NATIVE PERENNIAL GRASSES (warm)											
<i>Andropogon gerardii</i>	10.00						P				
<i>Muhlenbergia asperifolia</i>	10.00									P	
<i>Panicum virgatum</i>	90.00		P	P	P	P	P	P	P	P	P
<i>Schizachyrium scoparium</i>	20.00							P			P
<i>Sorghastrum avenaceum</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Sporobolus asper</i>	80.00	P	P	P	P	P	P	P	P	P	P
TOTAL NATIVE PERENNIAL GRASSES (w)	100.0	P	P	P	P	P	P	P	P	P	P
NATIVE SHRUBS											
<i>Rosa woodsii</i>	20.00		P	P							
TOTAL NATIVE SHRUBS	20.0	---	P	P	---	---	---	---	---	---	---
INTRODUCED TREES											
<i>Elaeagnus angustifolia</i>	10.00										P
TOTAL INTRODUCED TREES	10.0	---	---	---	---	---	---	---	---	---	P
FERNS											
<i>Hippochaete laevigata</i>	70.00	P	P	P	P	P			P	P	
TOTAL FERNS	70.0	P	P	P	P	P	---	---	P	P	---
SPECIES DENSITY (# of species/5 sq.m.) (AVERAGE= 14.4 Std.Dev.= 2.5)		13	15	9	15	14	19	14	15	16	14

*P=Present within 1m X 5m plot on right side (when standing at origin and facing the endpoint) of the cover transect.

Table 7. Frequency Data – Area 3, Transect 4, Boulder City Open Space, CO – 1997

PLANT SPECIES	FREQUENCY (%)	PRESENCE* ----- SAMPLE NUMBER -----									
		1	2	3	4	5	6	7	8	9	10
INTRODUCED ANNUAL & BIENNIAL FORBS											
<i>Cirsium vulgare</i>	10.00							P			
<i>Plantago lanceolata</i>	70.00	P	P	P				P	P	P	P
TOTAL INTRO. ANN. & BIEN. FORBS	70.0	P	P	P	---	---	P	P	P	P	---
NATIVE PERENNIAL FORBS											
<i>Apocynum cannabinum</i>	50.00		P	P		P	P			P	
<i>Asclepias speciosa</i>	50.00	P	P	P			P	P			
<i>Aster lanceolatus ssp. hesperius</i>	40.00			P	P	P	P				
<i>Epilobium ciliatum</i>	10.00										P
<i>Lycopus americanus</i>	10.00										P
<i>Mentha arvensis</i>	40.00				P	P	P				P
<i>Oenothera villosa</i>	30.00						P			P	P
<i>Oligoneuron rigidum</i>	50.00	P	P				P	P	P		
<i>Psoralea tenuiflorum</i>	10.00	P									
<i>Rumex crispus</i>	10.00										P
<i>Verbena hastata</i>	10.00										P
<i>Virgulus falcatus</i>	60.00	P	P	P	P			P	P		
TOTAL NATIVE PERENNIAL FORBS	100.0	P	P	P	P	P	P	P	P	P	P
INTRODUCED PERENNIAL FORBS											
<i>Breua arvensis</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Cichorium intybus</i>	10.00	P									
<i>Daucus carota</i>	40.00	P	P	P				P			
<i>Sonchus uliginosus</i>	20.00		P	P							
TOTAL INTRO. PERENNIAL FORBS	100.0	P	P	P	P	P	P	P	P	P	P
NATIVE PERENNIAL GRASSES (cool)											
<i>Carex lanuginosa</i>	20.00										P
<i>Carex nebrascensis</i>	30.00					P					P
<i>Carex praegracilis</i>	60.00	P	P	P		P	P	P			
<i>Eleocharis palustris</i>	20.00										P
<i>Juncus arcticus ssp. ater</i>	70.00				P	P	P	P	P		P
<i>Juncus interior</i>	30.00		P	P							P
<i>Juncus longistylis</i>	20.00					P	P				
<i>Juncus saximontanus</i>	40.00			P	P	P	P				
<i>Poa agassizensis</i>	60.00	P	P				P	P	P	P	
TOTAL NATIVE PERENNIAL GRASSES (c)	100.0	P	P	P	P	P	P	P	P	P	P
INTRODUCED PERENNIAL GRASSES (cool)											
<i>Agrostis stolonifera</i>	70.00		P	P	P	P	P		P	P	
<i>Elytrigia repens</i>	40.00	P	P	P	P						
TOTAL INTRO. PERENNIAL GRASSES (c)	80.0	P	P	P	P	P	P	---	P	P	---
NATIVE PERENNIAL GRASSES (warm)											
<i>Andropogon gerardii</i>	10.00		P								
<i>Muhlenbergia asperifolia</i>	30.00			P	P						P
<i>Panicum virgatum</i>	50.00	P	P	P	P		P				
<i>Sorghastrum avenaceum</i>	80.00	P	P	P	P	P	P	P	P		
<i>Sporobolus asper</i>	20.00	P		P							
TOTAL NATIVE PERENNIAL GRASSES (w)	90.0	P	P	P	P	P	P	P	P	P	---
NATIVE SHRUBS											
<i>Rosa sayi</i>	10.00			P							
TOTAL NATIVE SHRUBS	10.0	---	---	P	---	---	---	---	---	---	---
SPECIES DENSITY (# of species/5 sq.m.)											
(AVERAGE = 12.8 Std.Dev. = 3.3)											
		14	16	18	11	11	16	11	9	14	8

*P=Present within 1m X 5m plot on right side (when standing at origin and facing the endpoint) of the cover transect.

Table 8. Frequency Data -- Area 3, Transect 5, Boulder City Open Space, CO -- 1997

PLANT SPECIES	FREQUENCY (%)	PRESENCE* ----- SAMPLE NUMBER -----									
		1	2	3	4	5	6	7	8	9	10
NATIVE ANNUAL & BIENNIAL FORBS											
<i>Dracocephalum parviflorum</i>	30.00					P			P	P	
TOTAL NATIVE ANN. & BIEN. FORBS	30.0	---	---	---	---	P	---	---	P	P	---
INTRODUCED ANNUAL & BIENNIAL FORBS											
<i>Dianthus armeria</i>	20.00	P	P								
<i>Melilotus officinalis</i>	10.00	P									
<i>Plantago lanceolata</i>	100.00	P	P	P	P	P	P	P	P	P	P
TOTAL INTRO. ANN. & BIEN. FORBS	100.0	P	P	P	P	P	P	P	P	P	P
NATIVE PERENNIAL FORBS											
<i>Ambrosia psilostachya</i> var. <i>coronopifolia</i>	40.00		P		P	P					P
<i>Apocynum cannabinum</i>	60.00					P	P	P	P	P	P
<i>Asclepias speciosa</i>	20.00						P	P			
<i>Aster lanceolatus</i> ssp. <i>hesperius</i>	30.00								P	P	P
<i>Oligoneuron rigidum</i>	10.00		P								
<i>Psoraleidium tenuiflorum</i>	20.00	P	P								
<i>Sisyrinchium montanum</i>	20.00					P	P				
<i>Verbena stricta</i>	20.00							P	P		
<i>Vicia americana</i>	10.00	P									
<i>Virgulus falcatus</i>	70.00	P	P	P	P	P		P			P
TOTAL NATIVE PERENNIAL FORBS	100.0	P	P	P	P	P	P	P	P	P	P
INTRODUCED PERENNIAL FORBS											
<i>Breera arvensis</i>	70.00				P	P	P	P	P	P	P
<i>Cichorium intybus</i>	30.00	P	P	P							
<i>Daucus carota</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Taraxacum officinale</i>	70.00	P	P	P	P	P				P	
<i>Trifolium repens</i>	20.00			P		P					
TOTAL INTRO. PERENNIAL FORBS	100.0	P	P	P	P	P	P	P	P	P	P
NATIVE PERENNIAL GRASSES (cool)											
<i>Carex praegracilis</i>	50.00				P	P	P		P	P	
<i>Eleocharis palustris</i>	30.00							P	P		P
<i>Juncus arcticus</i> ssp. <i>ater</i>	10.00										P
<i>Juncus longistylis</i>	50.00			P			P		P	P	P
<i>Juncus saximontanus</i>	70.00				P	P	P	P	P	P	P
<i>Juncus</i> spp.	50.00					P		P	P	P	P
<i>Poa agassizensis</i>	40.00	P	P		P		P				
TOTAL NATIVE PERENNIAL GRASSES (c)	100.0	P	P	P	P	P	P	P	P	P	P
INTRODUCED PERENNIAL GRASSES (cool)											
<i>Agrostis stolonifera</i>	70.00				P	P	P	P	P	P	P
<i>Dactylis glomerata</i>	10.00								P		
<i>Elytrigia repens</i>	40.00					P	P		P		P
TOTAL INTRO. PERENNIAL GRASSES (c)	70.0	---	---	---	P	P	P	P	P	P	P
NATIVE PERENNIAL GRASSES (warm)											
<i>Andropogon gerardii</i>	30.00	P	P	P							
<i>Muhlenbergia asperifolia</i>	60.00					P	P	P	P	P	P
<i>Panicum virgatum</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Sorghastrum avenaceum</i>	60.00		P	P	P	P	P	P			
<i>Sporobolus asper</i>	50.00		P	P	P	P	P				
TOTAL NATIVE PERENNIAL GRASSES (w)	100.0	P	P	P	P	P	P	P	P	P	P
FERNS											
<i>Hippochaete laevigata</i>	40.00	P				P	P	P			
TOTAL FERNS	40.0	P	---	---	---	P	P	P	---	---	---
SPECIES DENSITY (# of species/5 sq.m.) (AVERAGE= 15.1 Std.Dev.= 2.7)		13	14	11	13	20	18	15	17	14	16

*P=Present within 1m X 5m plot on right side (when standing at origin and facing the endpoint) of the cover transect.

Table 9. Frequency Data – Area 3, Transect 6, Boulder City Open Space, CO – 1997

PLANT SPECIES	FREQUENCY (%)	PRESENCE* ----- SAMPLE NUMBER -----									
		1	2	3	4	5	6	7	8	9	10
NATIVE ANNUAL & BIENNIAL FORBS											
<i>Dracocephalum parviflorum</i>	30.00						P	P	P		
TOTAL NATIVE ANN. & BIEN. FORBS	30.0	---	---	---	---	---	P	P	P	---	---
INTRODUCED ANNUAL & BIENNIAL FORBS											
<i>Alyssum minus</i>	10.00										P
<i>Dianthus armeria</i>	10.00										P
<i>Meiblotus alba</i>	10.00										P
<i>Plantago lanceolata</i>	90.00	P	P	P	P	P	P	P	P	P	P
TOTAL INTRO. ANN. & BIEN. FORBS	100.0	P	P	P	P	P	P	P	P	P	P
NATIVE PERENNIAL FORBS											
<i>Ambrosia psilostachya</i> var. <i>coronopifolia</i>	70.00				P	P	P	P	P	P	P
<i>Apocynum cannabinum</i>	50.00		P			P		P	P	P	
<i>Asclepias speciosa</i>	50.00	P	P					P	P	P	
<i>Oligoneuron rigidum</i>	30.00	P	P		P						
<i>Psoraleidum tenuiflorum</i>	30.00	P	P								P
<i>Sisyrinchium montanum</i>	10.00							P			
<i>Thermopsis divaricarpa</i>	20.00	P	P								
<i>Virgulus falcatus</i>	70.00	P	P		P		P		P	P	P
TOTAL NATIVE PERENNIAL FORBS	90.0	P	P	---	P	P	P	P	P	P	P
INTRODUCED PERENNIAL FORBS											
<i>Breera arvensis</i>	30.00							P	P	P	
<i>Cichorium intybus</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Daucus carota</i>	60.00	P	P	P	P					P	P
<i>Trifolium repens</i>	10.00	P									
TOTAL INTRO. PERENNIAL FORBS	100.0	P	P	P	P	P	P	P	P	P	P
NATIVE PERENNIAL GRASSES (cool)											
<i>Juncus arcticus</i> ssp. <i>ater</i>	30.00								P	P	P
<i>Juncus interior</i>	10.00							P			
<i>Juncus longistylis</i>	20.00							P	P		
<i>Juncus saximontanus</i>	20.00					P		P			
<i>Poa agassizensis</i>	40.00		P					P		P	P
<i>Poa compressa</i>	40.00	P			P			P			P
TOTAL NATIVE PERENNIAL GRASSES (c)	90.0	P	P	---	P	P	P	P	P	P	P
INTRODUCED PERENNIAL GRASSES (cool)											
<i>Agrostis stolonifera</i>	40.00				P	P	P	P			
<i>Bromopsis inermis</i>	10.00										P
<i>Elytrigia repens</i>	30.00					P	P	P			
TOTAL INTRO. PERENNIAL GRASSES (c)	50.0	---	---	---	P	P	P	P	---	---	P
NATIVE PERENNIAL GRASSES (warm)											
<i>Muhlenbergia asperifolia</i>	10.00						P				
<i>Panicum virgatum</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Schizachyrium scoparium</i>	20.00			P	P						
<i>Sorghastrum avenaceum</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Sporobolus asper</i>	80.00	P	P		P		P	P	P	P	P
TOTAL NATIVE PERENNIAL GRASSES (w)	100.0	P	P	P	P	P	P	P	P	P	P
NATIVE SHRUBS											
<i>Rosa sayi</i>	20.00										P
TOTAL NATIVE SHRUBS	20.0	---	---	---	---	---	---	---	---	---	P
FERNS											
<i>Hippochaete laevigata</i>	80.00	P	P	P				P	P	P	P
TOTAL FERNS	80.0	P	P	P	---	---		P	P	P	P
SPECIES DENSITY (# of species/5 sq.m.) (AVERAGE= 13.3 Std.Dev.= 3.2)		14	14	7	12	9	17	16	13	16	15

*P=Present within 1m X 5m plot on right side (when standing at origin and facing the endpoint) of the cover transect.

Table 10. Frequency Data – Area 6, Transect 1, Boulder City Open Space, CO – 1997

PLANT SPECIES	FREQUENCY (%)	PRESENCE* ----- SAMPLE NUMBER -----									
		1	2	3	4	5	6	7	8	9	10
NATIVE ANNUAL & BIENNIAL FORBS											
<i>Gaura parviflora</i>	10.00		P								
TOTAL NATIVE ANN. & BIEN. FORBS	10.0	---	P	---	---	---	---	---	---	---	---
INTRODUCED ANNUAL & BIENNIAL FORBS											
<i>Lactuca serriola</i>	30.00		P	P							P
<i>Plantago lanceolata</i>	10.00										P
TOTAL INTRO. ANN. & BIEN. FORBS	30.0	---	P	P	---	---	---	---	---	---	P
NATIVE PERENNIAL FORBS											
<i>Ambrosia psilostachya</i> var. <i>coronopifolia</i>	10.00										P
<i>Apocynum cannabinum</i>	90.00	P	P	P	P	P	P	P	P	P	P
<i>Asclepias speciosa</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Rumex crispus</i>	10.00	P									
<i>Virgulus falcatus</i>	10.00										P
TOTAL NATIVE PERENNIAL FORBS	100.0	P	P	P	P	P	P	P	P	P	P
INTRODUCED PERENNIAL FORBS											
<i>Breea arvensis</i>	90.00	P	P	P	P	P		P	P	P	P
<i>Convolvulus arvensis</i>	10.00										P
<i>Verbena bracteata</i>	10.00				P						
TOTAL INTRO. PERENNIAL FORBS	90.0	P	P	P	P	P	---	P	P	P	P
NATIVE PERENNIAL GRASSES (cool)											
<i>Carex vulpinoidea</i>	10.00		P								
<i>Juncus arcticus</i> ssp. <i>ater</i>	100.00	P	P	P	P	P	P	P	P	P	P
TOTAL NATIVE PERENNIAL GRASSES (c)	100.0	P	P	P	P	P	P	P	P	P	P
INTRODUCED PERENNIAL GRASSES (cool)											
<i>Agrostis gigantea</i>	10.00					P					
TOTAL INTRO. PERENNIAL GRASSES (c)	10.0	---	---	---	---	P	---	---	---	---	---
NATIVE PERENNIAL GRASSES (warm)											
<i>Andropogon gerardii</i>	40.00	P	P		P						P
<i>Muhlenbergia asperifolia</i>	80.00	P	P	P		P	P	P	P	P	
<i>Panicum virgatum</i>	40.00					P			P	P	P
<i>Schizachyrium scoparium</i>	10.00									P	
<i>Sporobolus asper</i>	100.00	P	P	P	P	P	P	P	P	P	P
TOTAL NATIVE PERENNIAL GRASSES (w)	100.0	P	P	P	P	P	P	P	P	P	P
NATIVE SHRUBS											
<i>Rosa sayi</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Symphoricarpos occidentalis</i>	10.00										P
TOTAL NATIVE SHRUBS	100.0	P	P	P	P	P	P	P	P	P	P
SPECIES DENSITY (# of species/5 sq.m.)		9	11	8	8	9	6	7	8	10	12
(AVERAGE= 8.8 Std.Dev.= 1.8)											

*P=Present within 1m X 5m plot on right side (when standing at origin and facing the endpoint) of the cover transect.

Table 11. Frequency Data – Area 6, Transect 2, Boulder City Open Space, CO – 1997

PLANT SPECIES	FREQUENCY (%)	PRESENCE* ----- SAMPLE NUMBER -----									
		1	2	3	4	5	6	7	8	9	10
INTRODUCED ANNUAL & BIENNIAL FORBS											
<i>Lactuca serriola</i>	10.00				P						
TOTAL INTRO. ANN. & BIEN. FORBS	10.0	-----	-----	-----	P	-----	-----	-----	-----	-----	-----
NATIVE PERENNIAL FORBS											
<i>Apocynum cannabinum</i>	30.00						P	P	P		
<i>Asclepias speciosa</i>	30.00	P						P	P		
<i>Rumex crispus</i>	20.00		P		P						
TOTAL NATIVE PERENNIAL FORBS	60.0	P	P	-----	P	-----	P	P	P	-----	-----
NATIVE PERENNIAL GRASSES (cool)											
<i>Carex praegracilis</i>	60.00		P		P		P		P	P	P
<i>Carex vulpinoidea</i>	70.00	P	P	P			P	P		P	P
<i>Eleocharis palustris</i>	30.00								P	P	P
<i>Juncus arcticus ssp. ater</i>	90.00	P	P	P	P	P	P	P	P		P
<i>Juncus longistylis</i>	30.00			P		P					P
<i>Pascopyrum smithii</i>	10.00										P
<i>Poa agassizensis</i>	10.00		P								
TOTAL NATIVE PERENNIAL GRASSES (c)	100.0	P	P	P	P	P	P	P	P	P	P
INTRODUCED PERENNIAL GRASSES (cool)											
<i>Agrostis gigantea</i>	30.00		P			P	P				
<i>Agrostis stolonifera</i>	20.00						P				P
TOTAL INTRO. PERENNIAL GRASSES (c)	40.0	-----	P	-----	-----	P	P	-----	-----	-----	P
NATIVE PERENNIAL GRASSES (warm)											
<i>Andropogon gerardii</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Panicum virgatum</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Sporobolus asper</i>	20.00			P							P
TOTAL NATIVE PERENNIAL GRASSES (w)	100.0	P	P	P	P	P	P	P	P	P	P
NATIVE SHRUBS											
<i>Rosa sayi</i>	60.00	P	P	P				P	P	P	
TOTAL NATIVE SHRUBS	60.0	P	P	P	-----	-----	-----	P	P	P	-----
SPECIES DENSITY (# of species/5 sq.m.) (AVERAGE= 7.2 Std.Dev.= 1.5)		6	9	7	6	5	8	7	8	6	10

*P=Present within 1m X 5m plot on right side (when standing at origin and facing the endpoint) of the cover transect.

Table 12. Frequency Data – Area 7, Transect 1, Boulder City Open Space, CO – 1997

PLANT SPECIES	FREQUENCY (%)	PRESENCE* ----- SAMPLE NUMBER -----									
		1	2	3	4	5	6	7	8	9	10
INTRODUCED ANNUAL & BIENNIAL FORBS											
<i>Dianthus armeria</i>	30.00				P	P		P			
<i>Plantago lanceolata</i>	30.00							P	P		P
<i>Tragopogon dubius</i> ssp. <i>major</i>	20.00			P				P			
TOTAL INTRO. ANN. & BIEN. FORBS	60.0	---	---	P	P	P	---	P	P	---	P
NATIVE PERENNIAL FORBS											
<i>Ambrosia psilostachya</i> var. <i>coronopifolia</i>	80.00	P	P	P	P	P	P		P		P
<i>Artemisia ludoviciana</i>	30.00	P		P			P				
<i>Aster porteri</i>	80.00	P	P	P	P	P	P	P		P	
<i>Dalea purpurea</i>	20.00					P	P				
<i>Oxalis dillenii</i>	50.00			P	P	P	P	P			
<i>Psoraleidum tenuiflorum</i>	60.00	P	P	P	P	P	P				
<i>Virgulus falcatus</i>	100.00	P	P	P	P	P	P	P	P	P	P
TOTAL NATIVE PERENNIAL FORBS	100.0	P	P	P	P	P	P	P	P	P	P
INTRODUCED PERENNIAL FORBS											
<i>Cichorium intybus</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Convolvulus arvensis</i>	50.00			P				P	P	P	P
<i>Hypericum perforatum</i>	50.00		P		P	P	P	P			
TOTAL INTRO. PERENNIAL FORBS	100.0	P	P	P	P	P	P	P	P	P	P
NATIVE PERENNIAL GRASSES (cool)											
<i>Carex</i> spp.	10.00									P	
<i>Eleocharis palustris</i>	10.00										P
<i>Juncus arcticus</i> ssp. <i>ater</i>	10.00										P
<i>Juncus interior</i>	40.00							P	P	P	P
<i>Poa compressa</i>	100.00	P	P	P	P	P	P	P	P	P	P
TOTAL NATIVE PERENNIAL GRASSES (c)	100.0	P	P	P	P	P	P	P	P	P	P
INTRODUCED PERENNIAL GRASSES (cool)											
<i>Agrostis stolonifera</i>	10.00										P
TOTAL INTRO. PERENNIAL GRASSES (c)	10.0	---	---	---	---	---	---	---	---	---	P
NATIVE PERENNIAL GRASSES (warm)											
<i>Andropogon gerardii</i>	90.00	P	P	P	P	P		P	P	P	P
<i>Chondrosium gracile</i>	70.00	P	P	P	P	P	P	P			
<i>Chondrosium hirsutum</i>	80.00	P	P	P	P		P	P	P	P	
<i>Muhlenbergia cuspidata</i>	60.00	P		P	P			P	P	P	
<i>Panicum virgatum</i>	90.00	P	P	P	P	P		P	P	P	P
<i>Schizachyrium scoparium</i>	40.00	P				P			P		P
<i>Sorghastrum avenaceum</i>	60.00					P	P	P	P	P	P
<i>Sporobolus asper</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Sporobolus heterolepis</i>	60.00			P	P	P	P	P			P
TOTAL NATIVE PERENNIAL GRASSES (w)	100.0	P	P	P	P	P	P	P	P	P	P
SUCCULENT											
<i>Opuntia macrorhiza</i>	50.00	P	P	P		P	P				
TOTAL SUCCULENT	50.0	P	P	P	---	P	P	---	---	---	---
SPECIES DENSITY (# of species/5 sq.m.) (AVERAGE= 15.8 Std.Dev.= 2.1)											
		15	13	18	16	18	16	19	14	13	16

*P=Present within 1m X 5m plot on right side (when standing at origin and facing the endpoint) of the cover transect.

Table 13. Frequency Data – Area 7, Transect 2, Boulder City Open Space, CO – 1997

PLANT SPECIES	FREQUENCY (%)	PRESENCE* ----- SAMPLE NUMBER -----									
		1	2	3	4	5	6	7	8	9	10
NATIVE ANNUAL & BIENNIAL FORBS											
<i>Cirsium undulatum</i>	10.00			P							
<i>Grindelia squarrosa</i>	30.00	P	P		P						
<i>Oligosporus pacificus</i>	40.00		P	P	P				P		
<i>Oreocarya virgata</i>	10.00							P			
<i>Silene antirrhina</i>	10.00					P					
TOTAL NATIVE ANN. & BIEN. FORBS	70.0	P	P	P	P	P	P	P	P	---	---
INTRODUCED ANNUAL & BIENNIAL FORBS											
<i>Alyssum minus</i>	30.00	P	P	P							
<i>Carduus nutans ssp. macrolepis</i>	20.00								P	P	
<i>Dianthus armeria</i>	10.00	P									
<i>Erodium cicutarium</i>	60.00		P	P		P	P	P	P		
<i>Noccaea montana</i>	30.00					P	P	P			
<i>Plantago lanceolata</i>	10.00										P
<i>Podospermum laciniatum</i>	10.00	P									
<i>Tragopogon dubius ssp. major</i>	40.00		P		P			P			P
<i>Verbascum thapsus</i>	30.00								P	P	P
TOTAL INTRO. ANN. & BIEN. FORBS	100.0	P	P	P	P	P	P	P	P	P	P
INTRODUCED ANNUAL GRASSES											
<i>Bromus japonicus</i>	40.00		P	P				P	P		
TOTAL INTRO. ANN. GRASSES	40.0	---	P	P	---	---	P	P	---	---	---
NATIVE PERENNIAL FORBS											
<i>Acetosella vulgaris</i>	40.00		P						P	P	P
<i>Achillea lanulosa</i>	20.00	P									P
<i>Ambrosia psilostachya var. coronopifolia</i>	60.00	P	P					P		P	P
<i>Artemisia frigida</i>	40.00		P	P		P	P				
<i>Artemisia ludoviciana</i>	30.00				P	P					P
<i>Aster porteri</i>	40.00	P		P			P	P			
<i>Brickellia rosmarinifolia ssp. chlorolepis</i>	10.00					P					
<i>Dalea purpurea</i>	30.00				P	P	P				
<i>Drymocallis fissa</i>	10.00										P
<i>Evolvulus nuttalianus</i>	10.00		P								
<i>Heterotheca fulcrata</i>	30.00		P				P	P			
<i>Liatris punctata</i>	70.00	P	P	P	P	P	P	P			
<i>Oenothera villosa</i>	20.00								P	P	
<i>Oxalis dillenii</i>	30.00	P						P			P
<i>Oxybaphus linearis</i>	30.00				P	P	P				
<i>Oxytropis x sericea</i>	20.00					P	P				
<i>Penstemon strictus</i>	10.00					P					
<i>Phacelia heterophylla</i>	30.00				P		P		P		
<i>Psoralidium tenuiflorum</i>	70.00	P			P	P	P	P		P	P
<i>Thermopsis rhombifolia</i>	10.00								P		
<i>Virgulus falcatus</i>	30.00	P							P	P	
TOTAL NATIVE PERENNIAL FORBS	100.0	P	P	P	P	P	P	P	P	P	P
INTRODUCED PERENNIAL FORBS											
<i>Breca arvensis</i>	30.00								P	P	P
<i>Cichorium intybus</i>	10.00	P									
<i>Convolvulus arvensis</i>	10.00										P
<i>Hypericum perforatum</i>	20.00	P		P							
<i>Taraxacum officinale</i>	40.00	P				P		P			P
TOTAL INTRO. PERENNIAL FORBS	70.0	P	---	P	---	P	---	P	P	P	P

Table 13. Frequency Data – Area 7, Transect 2, Boulder City Open Space, CO – 1997

PLANT SPECIES	FREQUENCY (%)	PRESENCE* ----- SAMPLE NUMBER -----										
		1	2	3	4	5	6	7	8	9	10	
NATIVE PERENNIAL GRASSES (cool)												
<i>Agrostis scabra</i>	20.00										P	P
<i>Carex pensylvanica</i> ssp. <i>heliophila</i>	20.00			P	P							
<i>Dicanthelium oligosanthes</i> var. <i>scribnerianum</i>	30.00	P							P	P		
<i>Hesperostipa comata</i>	60.00	P	P	P		P	P		P			
<i>Juncus arcticus</i> ssp. <i>ater</i>	40.00	P							P		P	P
<i>Juncus interior</i>	10.00	P										
<i>Koeleria macrantha</i>	20.00			P	P							
<i>Pascopyrum smithii</i>	20.00	P	P									
<i>Poa agassizensis</i>	30.00									P	P	P
<i>Poa compressa</i>	20.00	P			P							
TOTAL NATIVE PERENNIAL GRASSES (c)	100.0	P	P	P	P	P	P	P	P	P	P	P
NATIVE PERENNIAL GRASSES (warm)												
<i>Andropogon gerardii</i>	60.00	P		P	P	P	P	P				
<i>Aristida purpurea</i>	20.00		P	P								
<i>Bouteloua curtipendula</i>	30.00			P	P	P						
<i>Chondrosium gracile</i>	60.00	P	P	P	P	P	P					
<i>Chondrosium hirsutum</i>	10.00	P										
<i>Muhlenbergia filiculmis</i>	10.00	P										
<i>Panicum virgatum</i>	60.00	P						P	P	P	P	P
<i>Sorghastrum avenaceum</i>	10.00	P										
<i>Sporobolus cryptandrus</i>	50.00	P	P	P	P				P			
TOTAL NATIVE PERENNIAL GRASSES (w)	100.0	P	P	P	P	P	P	P	P	P	P	P
NATIVE SHRUBS												
<i>Rosa sayi</i>	10.00									P		
TOTAL NATIVE SHRUBS	10.0									P		
SUCCULENT												
<i>Echinocereus viridiflorus</i>	30.00			P		P	P					
<i>Opuntia fragilis</i>	40.00		P		P	P	P					
<i>Opuntia macrorhiza</i>	50.00		P	P			P	P	P			
TOTAL SUCCULENT	70.0		P	P	P	P	P	P	P			
SPECIES DENSITY (# of species/5 sq.m.) (AVERAGE= 18.4 Std.Dev.= 4.1)		27	19	19	17	19	22	18	15	12	16	

*P=Present within 1m X 5m plot on right side (when standing at origin and facing the endpoint) of the cover transect.

Table 14. Frequency Data — Area 7, Transect 3, Boulder City Open Space, CO — 1997

PLANT SPECIES	FREQUENCY (%)	PRESENCE* ----- SAMPLE NUMBER -----									
		1	2	3	4	5	6	7	8	9	10
NATIVE PERENNIAL GRASSES (warm)											
<i>Andropogon gerardii</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Bouteloua curtipendula</i>	90.00		P	P	P	P	P	P	P	P	P
<i>Chondrosium gracile</i>	90.00	P		P	P	P	P	P	P	P	P
<i>Muhlenbergia filiculmis</i>	10.00			P							
<i>Panicum virgatum</i>	30.00		P							P	P
<i>Schizachyrium scoparium</i>	10.00							P			
<i>Sporobolus cryptandrus</i>	10.00										P
TOTAL NATIVE PERENNIAL GRASSES (w)	100.0	P	P	P	P	P	P	P	P	P	P
NATIVE SHRUBS											
<i>Eriogonum effusum</i>	10.00							P			
<i>Yucca glauca</i>	30.00		P					P			P
TOTAL NATIVE SHRUBS	30.0	---	P	---	---	---	---	P	---	---	P
SUCCULENT											
<i>Echinocereus viridiflorus</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Opuntia fragilis</i>	50.00	P			P	P	P	P			
<i>Opuntia macrorhiza</i>	20.00								P		P
TOTAL SUCCULENT	100.0	P	P	P	P	P	P	P	P	P	P
SPECIES DENSITY (# of species/5 sq.m.) (AVERAGE= 22.7 Std.Dev.= 3.0)		23	24	21	26	23	19	28	24	20	19

*P=Present within 1m X 5m plot on right side (when standing at origin and facing the endpoint) of the cover transect.

Table 15. Frequency Data – Area 7, Transect 4, Boulder City Open Space, CO – 1997

PLANT SPECIES	FREQUENCY (%)	PRESENCE* ----- SAMPLE NUMBER -----									
		1	2	3	4	5	6	7	8	9	10
NATIVE PERENNIAL GRASSES (warm)											
Andropogon gerardii	100.00	P	P	P	P	P	P	P	P	P	P
Bouteloua curtipendula	60.00	P	P	P		P	P	P			
Chondrosium gracile	100.00	P	P	P	P	P	P	P	P	P	P
Chondrosium hirsutum	50.00	P	P			P			P	P	
Muhlenbergia cuspidata	20.00						P	P			
Panicum virgatum	70.00		P	P	P	P	P	P			P
Schizachyrium scoparium	30.00					P	P		P		
Sorghastrum avenaceum	30.00			P	P		P				
Sporobolus asper	30.00				P	P	P				
Sporobolus heterolepis	20.00		P			P					
TOTAL NATIVE PERENNIAL GRASSES (w)	100.0	P	P	P	P	P	P	P	P	P	P
SUCCULENT											
Opuntia macrorhiza	80.00	P	P	P	P	P	P	P			P
TOTAL SUCCULENT	80.0	P	P	P	P	P	P	P	---	P	---
SPECIES DENSITY (# of species/5 sq.m.) (AVERAGE= 18.9 Std.Dev.= 3.3)		21	23	16	17	20	19	24	17	19	13

*P=Present within 1m X 5m plot on right side (when standing at origin and facing the endpoint) of the cover transect.

Table 16. Frequency Data – Area 7, Transect 5, Boulder City Open Space, CO – 1997

PLANT SPECIES	FREQUENCY (%)	PRESENCE* ----- SAMPLE NUMBER -----									
		1	2	3	4	5	6	7	8	9	10
NATIVE PERENNIAL GRASSES (warm)											
<i>Andropogon gerardii</i>	60.00	P	P	P	P	P					P
<i>Buchloe dactyloides</i>	10.00										P
<i>Chondrosium gracile</i>	20.00				P						P
<i>Panicum virgatum</i>	80.00	P		P	P	P	P	P	P	P	P
<i>Spartina pectinata</i>	20.00										P
TOTAL NATIVE PERENNIAL GRASSES (w)	100.0	P	P	P	P	P	P	P	P	P	P
NATIVE SHRUBS											
<i>Rosa sayi</i>	60.00		P			P	P	P	P		P
<i>Symphoricarpos occidentalis</i>	40.00		P	P	P	P					
TOTAL NATIVE SHRUBS	80.0	---	P	P	P	P	P	P	P	---	P
SUCCULENT											
<i>Opuntia macrorhiza</i>	40.00	P		P	P	P					
TOTAL SUCCULENT	40.0	P	---	P	P	P	---	---	---	---	---
SPECIES DENSITY (# of species/5 sq.m.) (AVERAGE= 15.8 Std.Dev.= 3.8)		12	14	19	19	22	13	16	14	19	10

*P=Present within 1m X 5m plot on right side (when standing at origin and facing the endpoint) of the cover transect.

Table 17. Frequency Data – Area 7, Transect 6, Boulder City Open Space, CO – 1997

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		----- SAMPLE NUMBER -----									
		1	2	3	4	5	6	7	8	9	10
NATIVE PERENNIAL GRASSES (warm)											
<i>Andropogon gerardii</i>	40.00	P	P	P	P						
<i>Bouteloua curtipendula</i>	20.00	P	P								
<i>Chondrosium gracile</i>	70.00	P	P	P	P			P	P	P	
<i>Chondrosium hirsutum</i>	10.00	P									
<i>Panicum virgatum</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Schizachyrium scoparium</i>	50.00	P	P	P	P	P					
<i>Sorghastrum avenaceum</i>	30.00				P	P					P
<i>Sporobolus cryptandrus</i>	30.00							P	P	P	
<i>Sporobolus heterolepis</i>	10.00			P							
TOTAL NATIVE PERENNIAL GRASSES (w)	100.0	P	P	P	P	P	P	P	P	P	P
NATIVE SHRUBS											
<i>Rosa sayi</i>	20.00		P	P							
<i>Yucca glauca</i>	30.00		P	P			P				
TOTAL NATIVE SHRUBS	30.0	---	P	P	---	---	P	---	---	---	---
SUCCULENT											
<i>Coryphantha vivipara</i> var. <i>vivipara</i>	20.00				P		P				
<i>Echinocereus viridiflorus</i>	30.00	P		P				P			
<i>Opuntia fragilis</i>	30.00	P					P	P			
<i>Opuntia macrorhiza</i>	80.00	P		P	P	P	P	P	P		P
TOTAL SUCCULENT	80.0	P	---	P	P	P	P	P	P	---	P
SPECIES DENSITY (# of species/5 sq.m.) (AVERAGE= 19.3 Std.Dev.= 4.6)		31	21	21	20	16	15	18	17	18	16

*P=Present within 1m X 5m plot on right side (when standing at origin and facing the endpoint) of the cover transect.

Table 18. Frequency Data – Area 7, Transect 7, Boulder City Open Space, CO – 1997

PLANT SPECIES	FREQUENCY (%)	PRESENCE* ----- SAMPLE NUMBER -----										
		1	2	3	4	5	6	7	8	9	10	
INTRODUCED ANNUAL & BIENNIAL FORBS												
<i>Dianthus armeria</i>	10.00										P	
<i>Plantago lanceolata</i>	30.00					P		P				P
TOTAL INTRO. ANN. & BIEN. FORBS	40.0					P		P			P	P
NATIVE PERENNIAL FORBS												
<i>Ambrosia psilostachya</i> var. <i>coronopifolia</i>	40.00			P				P	P		P	
<i>Aster porteri</i>	20.00										P	P
<i>Iris missouriensis</i>	60.00					P	P	P	P		P	P
<i>Pneumonanthe parryi</i>	10.00											P
<i>Thermopsis rhombifolia</i>	30.00		P								P	P
<i>Virgulus falcatus</i>	90.00	P	P	P	P	P	P	P	P	P	P	P
TOTAL NATIVE PERENNIAL FORBS	100.0	P	P	P	P	P	P	P	P	P	P	P
INTRODUCED PERENNIAL FORBS												
<i>Cichorium intybus</i>	90.00	P	P	P	P	P	P	P	P	P		
<i>Hypericum perforatum</i>	10.00											P
<i>Lotus tenuis</i>	10.00			P								
<i>Taraxacum officinale</i>	20.00								P			P
TOTAL INTRO. PERENNIAL FORBS	100.0	P	P	P	P	P	P	P	P	P		P
NATIVE PERENNIAL GRASSES (cool)												
<i>Carex praegracilis</i>	60.00			P	P	P	P			P		P
<i>Juncus arcticus</i> ssp. <i>ater</i>	100.00	P	P	P	P	P	P	P	P	P	P	P
<i>Juncus interior</i>	50.00	P			P		P	P			P	
<i>Poa agassizensis</i>	100.00	P	P	P	P	P	P	P	P	P	P	P
<i>Poa compressa</i>	80.00	P		P	P		P	P	P	P	P	P
TOTAL NATIVE PERENNIAL GRASSES (c)	100.0	P	P	P	P	P	P	P	P	P	P	P
INTRODUCED PERENNIAL GRASSES (cool)												
<i>Phleum pratense</i>	20.00			P								P
TOTAL INTRO. PERENNIAL GRASSES (c)	20.0			P								P
NATIVE PERENNIAL GRASSES (warm)												
<i>Andropogon gerardii</i>	40.00	P	P								P	P
<i>Chondrosium hirsutum</i>	30.00							P	P	P	P	
<i>Muhlenbergia cuspidata</i>	70.00				P	P	P	P	P	P	P	P
<i>Panicum virgatum</i>	100.00	P	P	P	P	P	P	P	P	P	P	P
<i>Schizachyrium scoparium</i>	10.00										P	
<i>Sorghastrum avenaceum</i>	90.00	P	P	P		P	P	P	P	P	P	P
<i>Sporobolus asper</i>	30.00							P	P	P	P	
<i>Sporobolus heterolepis</i>	100.00	P	P	P	P	P	P	P	P	P	P	P
TOTAL NATIVE PERENNIAL GRASSES (w)	100.0	P	P	P	P	P	P	P	P	P	P	P
NATIVE SHRUBS												
<i>Rosa sayi</i>	60.00	P	P	P						P	P	P
TOTAL NATIVE SHRUBS	60.0	P	P	P						P	P	P
SPECIES DENSITY (# of species/5 sq.m.) (AVERAGE= 13.6 Std.Dev.= 3.4)		11	10	13	10	11	13	15	15	20	18	

*P=Present within 1m X 5m plot on right side (when standing at origin and facing the endpoint) of the cover transect.

Table 19. Frequency Data – Area 7, Transect 8, Boulder City Open Space, CO – 1997

PLANT SPECIES	FREQUENCY (%)	PRESENCE* ----- SAMPLE NUMBER -----										
		1	2	3	4	5	6	7	8	9	10	
NATIVE ANNUAL & BIENNIAL FORBS												
<i>Gaura parviflora</i>	70.00		P	P	P	P	P				P	P
TOTAL NATIVE ANN. & BIEN. FORBS	70.0	---	P	P	P	P	P	---	---		P	P
NATIVE PERENNIAL FORBS												
<i>Ambrosia psilostachya</i> var. <i>coronopifolia</i>	30.00					P	P				P	
<i>Aster lanceolatus</i> ssp. <i>hesperius</i>	20.00				P							P
<i>Epilobium ciliatum</i>	10.00											P
<i>Lycopus americanus</i>	60.00		P	P	P	P	P					P
<i>Potentilla</i> spp.	40.00					P	P				P	P
<i>Rumex trianguivalvis</i>	50.00	P			P		P				P	P
<i>Verbena hastata</i>	80.00	P		P	P	P	P	P			P	P
TOTAL NATIVE PERENNIAL FORBS	90.0	P	P	P	P	P	P	P	P	---	P	P
INTRODUCED PERENNIAL FORBS												
<i>Breca arvensis</i>	100.00	P	P	P	P	P	P	P	P	P	P	P
TOTAL INTRO. PERENNIAL FORBS	100.0	P	P	P	P	P	P	P	P	P	P	P
NATIVE PERENNIAL GRASSES (cool)												
<i>Agrostis scabra</i>	40.00					P	P				P	P
<i>Critesion jubatum</i>	10.00											P
<i>Juncus arcticus</i> ssp. <i>ater</i>	90.00	P	P	P	P	P	P	P	P	P	P	
TOTAL NATIVE PERENNIAL GRASSES (c)	100.0	P	P	P	P	P	P	P	P	P	P	P
NATIVE PERENNIAL GRASSES (warm)												
<i>Spartina pectinata</i>	100.00	P	P	P	P	P	P	P	P	P	P	P
TOTAL NATIVE PERENNIAL GRASSES (w)	100.0	P	P	P	P	P	P	P	P	P	P	P
SPECIES DENSITY (# of species/5 sq.m.) (AVERAGE= 7.0 Std.Dev.= 2.7)		5	5	6	8	9	10	4	3	9	11	

*P=Present within 1m X 5m plot on right side (when standing at origin and facing the endpoint) of the cover transect.

Table 20. Frequency Data – Area 7, Transect 9, Boulder City Open Space, CO – 1997

PLANT SPECIES	FREQUENCY (%)	PRESENCE* ----- SAMPLE NUMBER -----									
		1	2	3	4	5	6	7	8	9	10
INTRODUCED PERENNIAL GRASSES (cool)											
<i>Dactylis glomerata</i>	10.00	P									
TOTAL INTRO. PERENNIAL GRASSES (c)	10.0	P	---	---	---	---	---	---	---	---	---
NATIVE PERENNIAL GRASSES (warm)											
<i>Andropogon gerardii</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Aristida purpurea</i>	10.00									P	
<i>Bouteloua curtipendula</i>	20.00							P	P		
<i>Calamovilfa longifolia</i>	10.00								P		
<i>Chondrosum gracile</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Panicum virgatum</i>	40.00		P						P	P	P
<i>Schizachyrium scoparium</i>	50.00	P	P	P	P					P	
<i>Sorghastrum avenaceum</i>	40.00	P	P	P						P	
<i>Sporobolus cryptandrus</i>	30.00								P	P	P
TOTAL NATIVE PERENNIAL GRASSES (w)	100.0	P	P	P	P	P	P	P	P	P	P
NATIVE SHRUBS											
<i>Amorpha nana</i>	20.00							P	P		
<i>Rosa sayi</i>	60.00	P	P	P			P	P	P		
TOTAL NATIVE SHRUBS	60.0	P	P	P	---	---	P	P	P	---	---
SUCCULENT											
<i>Opuntia fragilis</i>	10.00							P			
<i>Opuntia macrorhiza</i>	40.00						P	P	P		P
TOTAL SUCCULENT	40.0	---	---	---	---	P	---	P	P	---	P
SPECIES DENSITY (# of species/5 sq.m.) (AVERAGE= 26.4 Std.Dev.= 7.2)		23	20	20	22	25	20	33	41	34	26

*P=Present within 1m X 5m plot on right side (when standing at origin and facing the endpoint) of the cover transect.

Table 21. Frequency Data – Area 7, Transect 10, Boulder City Open Space, CO – 1997

PLANT SPECIES	FREQUENCY (%)	PRESENCE* ----- SAMPLE NUMBER -----										
		1	2	3	4	5	6	7	8	9	10	
NATIVE ANNUAL & BIENNIAL FORBS												
<i>Cirsium undulatum</i>	10.00											P
<i>Grindelia squarrosa</i>	50.00	P		P	P			P		P		P
<i>Oligosporus pacificus</i>	60.00			P	P			P		P		P
<i>Oreocarya virgata</i>	10.00									P		
<i>Plantago patagonica</i>	20.00		P									P
<i>Pterogonum alatum</i>	80.00		P		P	P	P	P	P	P	P	P
<i>Silene antirrhina</i>	50.00				P	P	P		P			P
TOTAL NATIVE ANN. & BIEN. FORBS	100.0	P	P	P	P	P	P	P	P	P	P	P
INTRODUCED ANNUAL & BIENNIAL FORBS												
<i>Alyssum minus</i>	100.00	P	P	P	P	P	P	P	P	P	P	P
<i>Dianthus armeria</i>	30.00	P			P	P						
<i>Lepidium densiflorum</i>	20.00		P	P								
<i>Plantago lanceolata</i>	20.00				P	P						
<i>Tragopogon dubius ssp. major</i>	40.00		P	P						P	P	
TOTAL INTRO. ANN. & BIEN. FORBS	100.0	P	P	P	P	P	P	P	P	P	P	P
INTRODUCED ANNUAL GRASSES												
<i>Bromus japonicus</i>	70.00	P	P	P	P	P				P	P	
TOTAL INTRO. ANN. GRASSES	70.0	P	P	P	P	P	---	---	P	P	---	---
NATIVE PERENNIAL FORBS												
<i>Acetosella vulgaris</i>	50.00				P	P		P			P	P
<i>Ambrosia psilostachya var. coronopifolia</i>	90.00	P	P	P	P	P	P		P	P	P	P
<i>Artemisia frigida</i>	90.00	P	P	P	P	P		P	P	P	P	P
<i>Artemisia ludoviciana</i>	30.00			P	P	P						
<i>Asclepias asperula</i>	10.00		P									
<i>Aster porteri</i>	60.00		P	P	P			P	P			P
<i>Brickellia rosmarinifolia ssp. chlorolepis</i>	10.00									P		
<i>Calylophus serrulatus</i>	10.00					P						
<i>Cerastium strictum</i>	40.00					P	P	P				P
<i>Comandra umbellata ssp. pallida</i>	10.00								P			
<i>Dalea purpurea</i>	70.00	P	P		P	P		P	P	P	P	
<i>Erigeron flagellaris</i>	90.00	P		P	P	P	P	P	P	P	P	P
<i>Evolvulus nuttalianus</i>	10.00									P		
<i>Gutierrezia sarothrae</i>	50.00	P	P	P		P				P		
<i>Heterotheca fulcrata</i>	50.00				P	P			P	P	P	
<i>Lesquerella montana</i>	20.00								P			P
<i>Liatris punctata</i>	60.00			P	P	P				P	P	P
<i>Oxalis dillenii</i>	60.00	P	P	P	P	P			P			
<i>Oxybaphus linearis</i>	10.00											P
<i>Oxytropis x sericea</i>	10.00					P						
<i>Paronychia jamesii</i>	90.00	P	P	P	P	P	P		P	P	P	P
<i>Phacelia heterophylla</i>	30.00						P	P	P	P		
<i>Psoralidium tenuiflorum</i>	60.00	P	P			P			P	P	P	P
<i>Ratibida columnifera</i>	20.00								P	P		
<i>Senecio spartioides</i>	50.00			P	P	P	P	P				
<i>Solanum spp.</i>	10.00											P
<i>Talinum parviflorum</i>	80.00	P	P		P		P	P	P	P	P	P
<i>Tragia ramosa</i>	100.00	P	P	P	P	P	P	P	P	P	P	P
<i>Virgulus falcatus</i>	30.00			P	P					P		
TOTAL NATIVE PERENNIAL FORBS	100.0	P	P	P	P	P	P	P	P	P	P	P
INTRODUCED PERENNIAL FORBS												
<i>Hypericum perforatum</i>	50.00			P		P	P	P				P
<i>Taraxacum officinale</i>	10.00			P								
TOTAL INTRO. PERENNIAL FORBS	50.0	---	---	P	---	P	P	P	---	---	---	P

Table 21. Frequency Data – Area 7, Transect 10, Boulder City Open Space, CO – 1997

PLANT SPECIES	FREQUENCY (%)	PRESENCE* ----- SAMPLE NUMBER -----									
		1	2	3	4	5	6	7	8	9	10
NATIVE PERENNIAL GRASSES (cool)											
<i>Carex pensylvanica</i> ssp. <i>heliophila</i>	80.00	P	P		P		P	P	P	P	P
<i>Dicanthelium oligosanthes</i> var. <i>scribnerianum</i>	10.00				P						
<i>Elymus longifolius</i>	10.00		P								
<i>Hesperostipa comata</i>	70.00	P			P	P		P	P	P	P
<i>Koeleria macrantha</i>	80.00	P	P	P		P	P	P		P	P
<i>Poa agassizensis</i>	50.00				P	P	P		P		P
<i>Poa compressa</i>	60.00	P		P			P	P		P	P
TOTAL NATIVE PERENNIAL GRASSES (c)	100.0	P	P	P	P	P	P	P	P	P	P
NATIVE PERENNIAL GRASSES (warm)											
<i>Andropogon gerardii</i>	90.00	P	P		P	P	P	P	P	P	P
<i>Aristida purpurea</i>	30.00							P	P	P	
<i>Bouteloua curtipendula</i>	60.00	P	P	P		P		P		P	
<i>Buchloe dactyloides</i>	20.00		P	P							
<i>Chondrosium gracile</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Chondrosium hirsutum</i>	30.00	P				P				P	
<i>Muhlenbergia cuspidata</i>	30.00	P	P	P							
<i>Panicum virgatum</i>	70.00	P	P		P	P		P		P	P
<i>Schizachyrium scoparium</i>	90.00		P	P	P	P	P	P	P	P	P
<i>Sorghastrum avenaceum</i>	10.00	P									
<i>Sporobolus cryptandrus</i>	40.00			P		P				P	P
TOTAL NATIVE PERENNIAL GRASSES (w)	100.0	P	P	P	P	P	P	P	P	P	P
NATIVE SHRUBS											
<i>Yucca glauca</i>	10.00	P									
TOTAL NATIVE SHRUBS	10.0	P									
SUCCULENT											
<i>Echinocereus viridiflorus</i>	80.00		P		P	P	P	P	P	P	P
<i>Opuntia fragilis</i>	10.00								P		
<i>Opuntia macrorhiza</i>	60.00		P	P		P	P	P		P	
<i>Pediocactus simpsonii</i>	20.00					P				P	
TOTAL SUCCULENT	90.0	---	P	P	P	P	P	P	P	P	P
SPECIES DENSITY (# of species/5 sq.m.) (AVERAGE= 30.3 Std.Dev.= 4.0)		26	29	29	32	37	23	32	32	34	29

*P=Present within 1m X 5m plot on right side (when standing at origin and facing the endpoint) of the cover transect.

Table 22. Species Present – All Sites and Transects, Boulder City Open Space, CO – 1997 Page 1 of 6

LATIN NAME	COMMON NAME	AREA-TRANSECT							
		3-1	3-2	3-3	3-4	3-5	3-6	6-1	6-2
NATIVE ANNUAL & BIENNIAL FORBS									
<i>Chamaesyce</i> spp.	SPURGE								
<i>Chenopodium rubrum</i>	RED GOOSEFOOT								
<i>Cirsium undulatum</i>	WAVYLEAF THISTLE								
<i>Dracocephalum parviflorum</i>	DRAGONHEAD		X			X	X		
<i>Erigeron divergens</i>	SPREADING FLEABANE								
<i>Erysimum asperum</i>	WALLFLOWER								
<i>Gaura parviflora</i>	WILLOW GAURA								X
<i>Grindelia squarrosa</i>	GUMWEED			X				X	
<i>Oligosporus pacificus</i>	SAGEWORT								
<i>Oreocarya virgata</i>	MINER'S CANDLE								
<i>Plantago patagonica</i>	WOOLLY PLANTAIN								
<i>Pterogonum alatum</i>	WINGED BUCKWHEAT								
<i>Silene antirrhina</i>	SLEEPY CATCHFLY								
INTRODUCED ANNUAL & BIENNIAL FORBS									
<i>Acosta diffusa</i>	TUMBLE KNAPWEED			X					
<i>Alyssum minus</i>	ALYSSUM							X	
<i>Camelina microcarpa</i>	LITTLEPOD FALSEFLAX								
<i>Carduus nutans ssp. macrolepis</i>	MUSK THISTLE								
<i>Cirsium vulgare</i>	BULL THISTLE				X	X			
<i>Cynoglossum officinale</i>	HOUND'S TONGUE								
<i>Dianthus armeria</i>	DEPTFORD PINK			X	X		X	X	
<i>Erodium cicutarium</i>	FILAREE								
<i>Lactuca serriola</i>	PRICKLY LETTUCE	X							X X
<i>Lepidium densiflorum</i>	DENSEFLOWER PEPPERWEED								
<i>Medicago lupulina</i>	BLACK MEDIC				X				
<i>Melilotus alba</i>	WHITE SWEET-CLOVER							X	
<i>Melilotus officinalis</i>	YELLOW SWEETCLOVER						X		
<i>Neolepia campestre</i>	FIELD PEPPERWEED			X					
<i>Noccaea montana</i>	MOUNTAIN CANDYTUFT								
<i>Plantago lanceolata</i>	BUCKHORN PLAINTAIN	X	X	X	X	X	X	X	X
<i>Podospermum laciniatum</i>	FALSE SALSIFY								
<i>Polygonum arenastrum</i>	DEVIL'S SHOESTRINGS								
<i>Sisymbrium altissimum</i>	JIM HILL MUSTARD								
<i>Tragopogon dubius ssp. major</i>	SALSIFY			X	X				
<i>Verbascum thapsus</i>	MULLEIN								
<i>Xanthium strumarium</i>	COCKLEBUR								
INTRODUCED ANNUAL GRASSES									
<i>Bromus japonicus</i>	JAPANESE BROME			X					
NATIVE PERENNIAL FORBS									
<i>Acetosella vulgaris</i>	SHEEP SORREL			X					
<i>Achillea lanulosa</i>	WESTERN YARROW			X	X				
<i>Ambrosia psilostachya var. coronopifolia</i>	RAGWEED			X	X				
<i>Apocynum cannabinum</i>	INDIAN HEMP	X		X	X	X	X	X	X
<i>Artemisia frigida</i>	FRINGED SAGE								
<i>Artemisia ludoviciana</i>	PASTURE SAGE			X					
<i>Asclepias asperula</i>	CREeping MILKWEED								
<i>Asclepias speciosa</i>	SHOWY MILKWEED	X			X	X	X	X	X
<i>Asclepias stenophylla</i>	MILKWEED								
<i>Aster lanceolatus ssp. hesperius</i>	ASTER				X	X			
<i>Aster porteri</i>	PORTER ASTER			X					
<i>Astragalus crassicaarpus</i>	GROUNDPLUM MILKVETCH								
<i>Astragalus miser var. oblongifolius</i>	WEEDY MILKVETCH								
<i>Brickellia rosmarinifolia ssp. chlorolepis</i>	BRICKELLIA								
<i>Calylophus serrulatus</i>	CALYLOPHUS								
<i>Cerastium strictum</i>	MOUSE-EAR								
<i>Comandra umbellata ssp. pallida</i>	BASTARD TOADFLAX								
<i>Dalea purpurea</i>	DALEA			X					
<i>Delphinium</i> spp.	LARKSPUR								
<i>Drymocallis fissa</i>	BIGFLOWER CINQUEFOIL								
<i>Epilobium ciliatum</i>	CILIATE WILLOW HERB					X			
<i>Erigeron flagellaris</i>	WHIPLASH FLEABANE			X					
<i>Eriogonum flavum var. flavum</i>	WILD BUCKWHEAT								
<i>Evolvulus nuttalianus</i>	NUTTALL'S EVOLVULUS			X					
<i>Gaillardia aristata</i>	BLANKET-FLOWER								
<i>Gaura coccinea</i>	GAURA			X					

Table 22. Species Present – All Sites and Transects, Boulder City Open Space, CO – 1997 Page 2 of 6

LATIN NAME	COMMON NAME	AREA-TRANSECT							
		3-1	3-2	3-3	3-4	3-5	3-6	6-1	6-2
NATIVE PERENNIAL FORBS (concluded)									
<i>Geranium</i> spp.	GERANIUM								
<i>Gutierrezia sarothrae</i>	SNAKEWEED								
<i>Heliomeris multiflora</i>	SHOWY GOLDENEYE								
<i>Heterotheca fulcrata</i>	GOLDEN ASTER						X		
<i>Heterotheca villosa</i>	GOLDEN ASTER			X					
<i>Iris missouriensis</i>	WILD IRIS								
<i>Lesquerella montana</i>	BLADDERPOD								
<i>Liatris punctata</i>	GAYFEATHER			X					
<i>Lithospermum ruderale</i>	WAYSIDE GROMWELL								
<i>Lupinus argenteus</i>	SILVER LUPINE								
<i>Lycopus americanus</i>	WATER HOREHOUND					X			
<i>Mentha arvensis</i>	FIELDMINT					X			
<i>Oenothera villosa</i>	EVENING-PRIMROSE		X	X		X			
<i>Oligoneuron rigidum</i>	STIFF GOLDENROD			X	X	X	X		
<i>Oxalis dillenii</i>	WOOD SORREL			X					
<i>Oxybaphus hirsutus</i>	UMBRELLAWORT								
<i>Oxybaphus linearis</i>	UMBRELLAWORT								
<i>Oxytropis x sericea</i>	LOCO HYBRID								
<i>Paronychia jamesii</i>	NAILWORT								
<i>Penstemon strictus</i>	ROCKY MOUNTAIN PENSTEMON								
<i>Phacelia heterophylla</i>	VARILEAF SCORPIONWEED								
<i>Pneumonanthe parryi</i>	PARRY BOTTLE GENTIAN								
<i>Potentilla hippiana</i>	HORSE CINQUEFOIL								
<i>Potentilla</i> spp.	CINQUEFOIL								
<i>Psoraleidium tenuiflorum</i>	SCURFPEA			X	X	X	X	X	
<i>Ratibida columnifera</i>	PRAIRIE CONEFLOWER								
<i>Rumex crispus</i>	CURLY DOCK		X		X			X	X
<i>Rumex triangulivalvis</i>	WILLOW DOCK								
<i>Senecio spartioides</i>	SENECIO								
<i>Sisyrinchium montanum</i>	BLUE-EYED-GRASS					X	X		
<i>Solanum</i> spp.	NIGHTSHADE								
<i>Solidago missouriensis</i>	MISSOURI GOLDENROD			X	X				
<i>Solidago speciosa</i> var. <i>pallida</i>	NOBLE GOLDENROD			X					
<i>Talinum parviflorum</i>	TALINUM								
<i>Thermopsis divaricarpa</i>	GOLDEN BANNER						X		
<i>Thermopsis rhombifolia</i>	GOLDEN BANNER								
<i>Tragia ramosa</i>	NOSEBURN								
<i>Verbena hastata</i>	BLUE VERVAIN				X				
<i>Verbena stricta</i>	WOOLLY VERBENA		X		X	X			
<i>Vicia americana</i>	AMERICAN VETCH					X			
<i>Virgulus falcatus</i>	FALCATE ASTER			X	X	X	X	X	
INTRODUCED PERENNIAL FORBS									
<i>Breca arvensis</i>	CANADA THISTLE		X		X	X	X	X	X
<i>Cichorium intybus</i>	CHICORY			X	X	X	X		
<i>Convolvulus arvensis</i>	BINDWEED			X	X			X	X
<i>Daucus carota</i>	QUEEN ANNE'S LACE			X	X	X	X		
<i>Hypericum perforatum</i>	KLAMATH WEED			X					
<i>Lotus tenuis</i>	LOTUS								
<i>Sonchus uliginosus</i>	SWAMP SOW-THISTLE				X				
<i>Taraxacum officinale</i>	DANDELION			X	X	X	X		
<i>Trifolium repens</i>	WHITE DUTCH CLOVER			X	X	X	X		
<i>Verbena bracteata</i>	VERVAIN								X
NATIVE PERENNIAL GRASSES (cool)									
<i>Agrostis scabra</i>	TICKLEGRASS								
<i>Carex lanuginosa</i>	SEDGE				X	X			
<i>Carex nebrascensis</i>	NEBRASKA SEDGE		X		X				
<i>Carex pensylvanica</i> ssp. <i>heliophila</i>	SUN SEDGE								
<i>Carex praegracilis</i>	SEDGE		X		X	X			X
<i>Carex</i> spp.	SEDGE								
<i>Carex vulpinoidea</i>	FOX SEDGE							X	X
<i>Critesion jubatum</i>	FOXTAIL BARLEY		X						
<i>Dicanthelium oligosanthes</i> var. <i>scribnerianum</i>	DICHANTHELIUM			X					
<i>Eleocharis palustris</i>	SPIKERUSH		X		X	X	X		X
<i>Elymus longifolius</i>	BOTTLEBRUSH SQUIRRELTAIL								
<i>Hesperostipa comata</i>	NEEDLE-AND-THREAD								
<i>Juncus arcticus</i> ssp. <i>ater</i>	BALTIC RUSH		X	X	X	X	X	X	X
<i>Juncus interior</i>	RUSH		X	X	X	X	X		

Table 22. Species Present -- All Sites and Transects, Boulder City Open Space, CO -- 1997 Page 5 of 6

LATIN NAME	COMMON NAME	AREA-TRANSECT									
		7-1	7-2	7-3	7-4	7-5	7-6	7-7	7-8	7-9	7-10
NATIVE PERENNIAL FORBS (concluded)											
Geranium spp.	GERANIUM					X					
Gutierrezia sarothrae	SNAKEWEED		X		X					X	X
Heliomeris multiflora	SHOWY GOLDENEYE							X			
Heterotheca fulcrata	GOLDEN ASTER		X	X		X	X			X	X
Heterotheca villosa	GOLDEN ASTER				X						
Iris missouriensis	WILD IRIS				X	X		X			
Lesquerella montana	BLADDERPOD										X
Liatris punctata	GAYFEATHER		X	X	X	X				X	X
Lithospermum ruderales	WAYSIDE GROMWELL		X		X			X		X	
Lupinus argenteus	SILVER LUPINE			X				X		X	
Lycopus americanus	WATER HOREHOUND								X		
Mentha arvensis	FIELDMINT			X							
Oenothera villosa	EVENING - PRIMROSE		X					X			
Oligoneuron rigidum	STIFF GOLDENROD				X			X	X		X
Oxalis dillenii	WOOD SORREL	X	X		X	X	X			X	X
Oxybaphus hirsutus	UMBRELLAWORT				X						
Oxybaphus linearis	UMBRELLAWORT	X	X	X	X	X	X			X	X
Oxytropis x sericea	LOCO HYBRID		X	X				X		X	X
Paronychia jamesii	NAILWORT							X			X
Penstemon strictus	ROCKY MOUNTAIN PENSTEMON		X	X							
Phacelia heterophylla	VARILEAF SCORPIONWEED		X	X				X			X
Pneumonanthe parryi	PARRY BOTTLE GENTIAN								X		
Potentilla hippiana	HORSE CINQUEFOIL									X	
Potentilla spp.	CINQUEFOIL								X		
Psoraleidium tenuiflorum	SCURFPEA	X	X	X	X	X	X			X	X
Ratibida columnifera	PRAIRIE CONEFLOWER				X	X	X			X	X
Rumex crispus	CURLY DOCK										
Rumex triangulivalvis	WILLOW DOCK								X		
Senecio spartioides	SENECIO			X							X
Sisyrinchium montanum	BLUE-EYED-GRASS										
Solanum spp.	NIGHTSHADE										X
Solidago missouriensis	MISSOURI GOLDENROD										
Solidago speciosa var. pallida	NOBLE GOLDENROD										
Talinum parviflorum	TALINUM			X	X						X
Thermopsis divaricarpa	GOLDEN BANNER		X			X		X			
Thermopsis rhombifolia	GOLDEN BANNER		X								
Tragia ramosa	NOSEBURN										X
Verbena hastata	BLUE VERVAIN								X		
Verbena stricta	WOOLLY VERBENA										
Vicia americana	AMERICAN VETCH										
Virgulus falcatus	FALCATE ASTER	X	X	X	X	X	X	X		X	X
INTRODUCED PERENNIAL FORBS											
Breca arvensis	CANADA THISTLE		X			X	X	X	X		
Cichorium intybus	CHICORY	X	X		X	X		X		X	X
Convolvulus arvensis	BINDWEED	X	X		X	X	X			X	
Daucus carota	QUEEN ANNE'S LACE										
Hypericum perforatum	KLAMATH WEED	X	X	X	X	X	X	X			X
Lotus tenuis	LOTUS								X		
Sonchus uliginosus	SWAMP SOW-THISTLE										
Taraxacum officinale	DANDELION	X	X		X	X	X	X		X	X
Trifolium repens	WHITE DUTCH CLOVER									X	
Verbena bracteata	VERVAIN					X					
NATIVE PERENNIAL GRASSES (cool)											
Agrostis scabra	TICKLEGRASS		X					X		X	
Carex lanuginosa	SEDEGE										
Carex nebrascensis	NEBRASKA SEDEGE					X					
Carex pensylvanica ssp. heliophila	SUN SEDEGE		X	X	X		X	X		X	X
Carex praegracilis	SEDEGE					X		X			
Carex spp.	SEDEGE	X									
Carex vulpinoidea	FOX SEDEGE										
Critesion jubatum	FOXTAIL BARLEY								X		
Dicanthelium oligosanthes var. scribnerian	DICHANTHELIUM	X	X					X			X
Eleocharis palustris	SPIKERUSH	X				X					
Elymus longifolius	BOTTLEBRUSH SQUIRRELTAIL										X
Hesperostipa comata	NEEDLE-AND-THREAD		X	X		X	X			X	X
Juncus arcticus ssp. ater	BALTIC RUSH	X	X		X	X	X	X	X	X	
Juncus interior	RUSH	X	X		X	X		X			



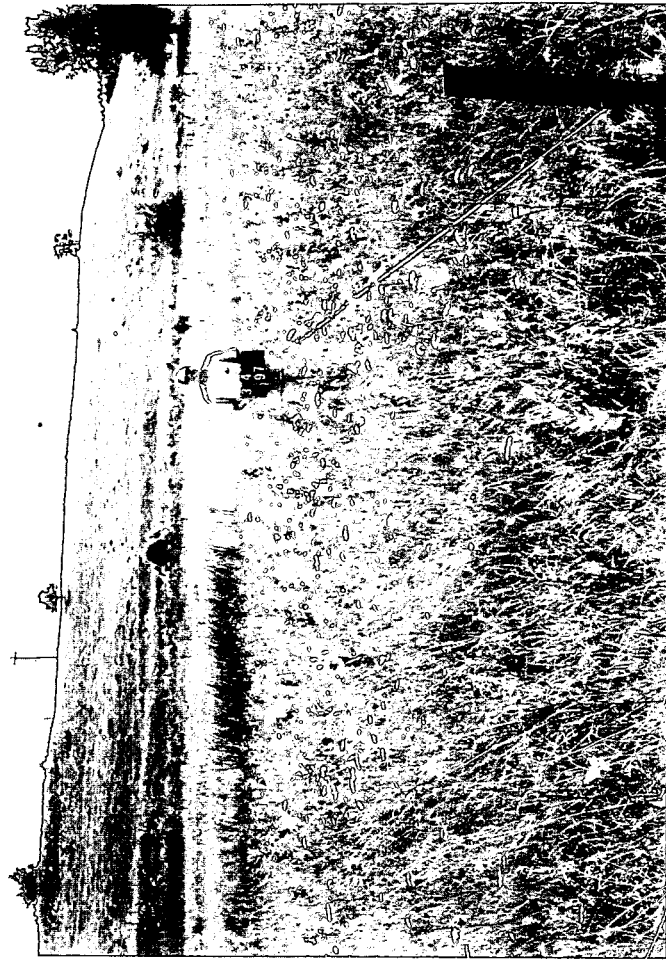
Photograph 1. Area 3 1997, Sample 1.



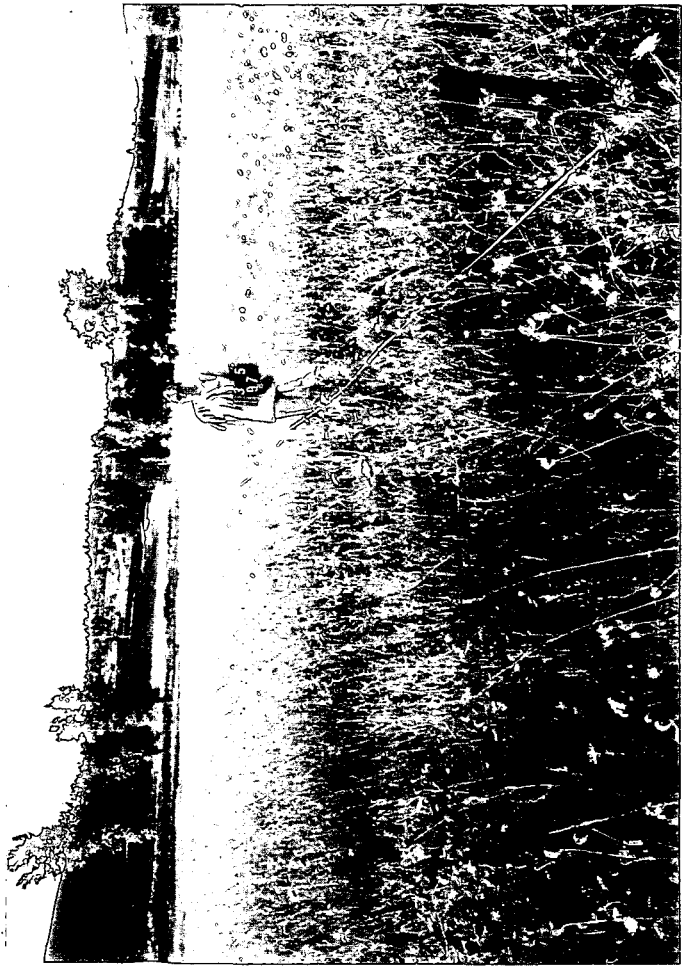
Photograph 2. Area 3 1997, Sample 2.



Photograph 3. Area 3 1997, Sample 3.



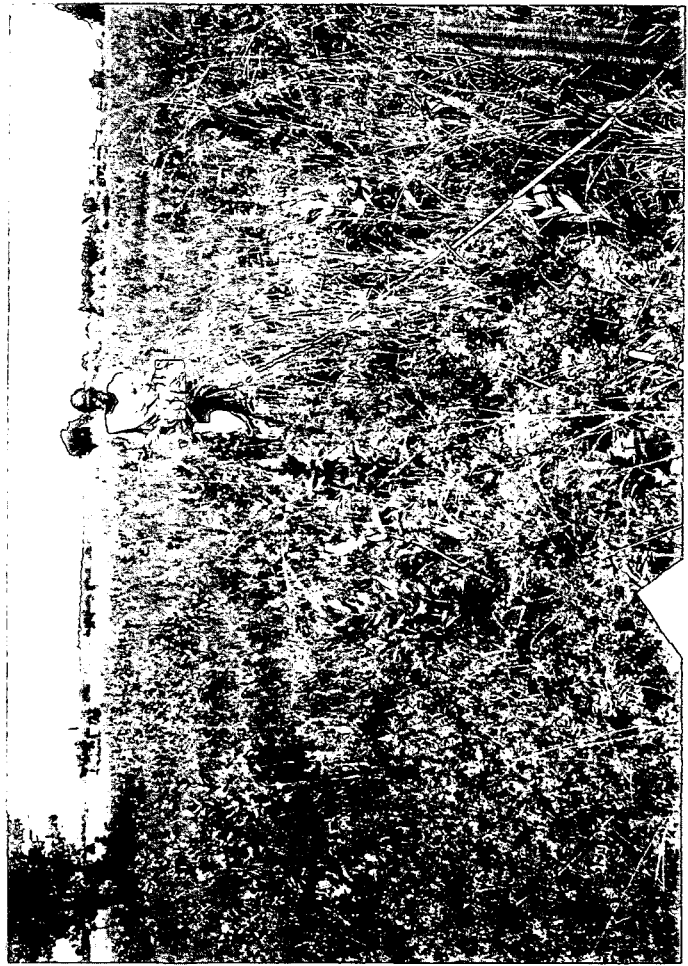
Photograph 4. Area 3 1997, Sample 4.



Photograph 5. Area 3 1997, Sample 5.



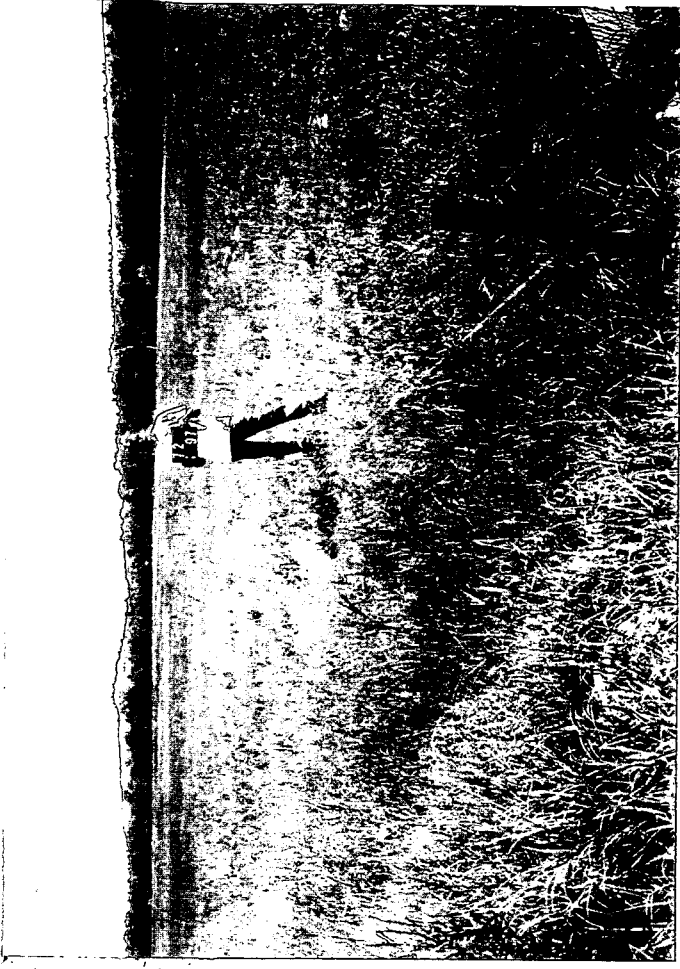
Photograph 6. Area 3 1997, Sample 6.



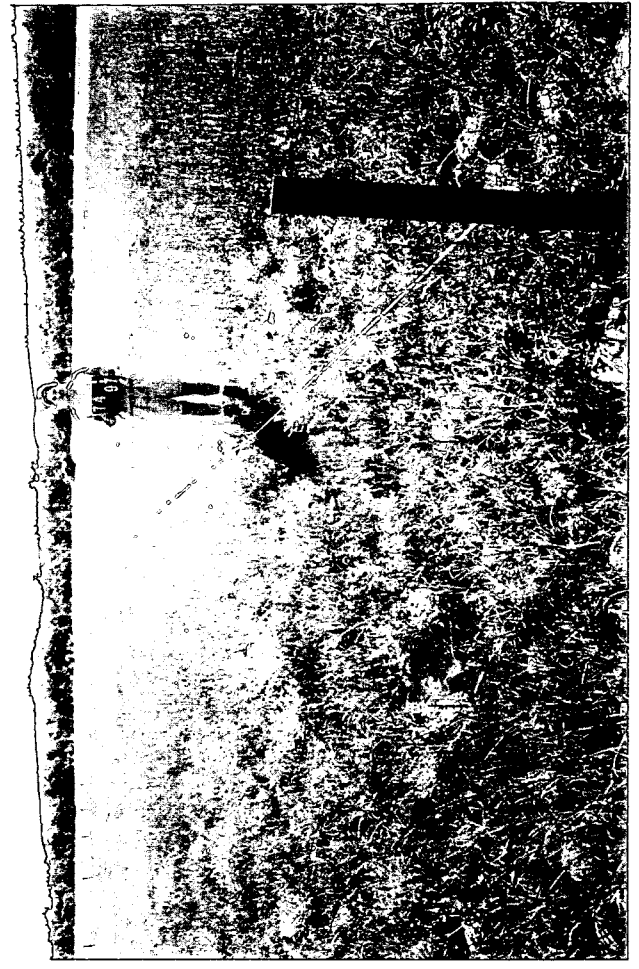
Photograph 7. Area 6 1997, Sample 1.



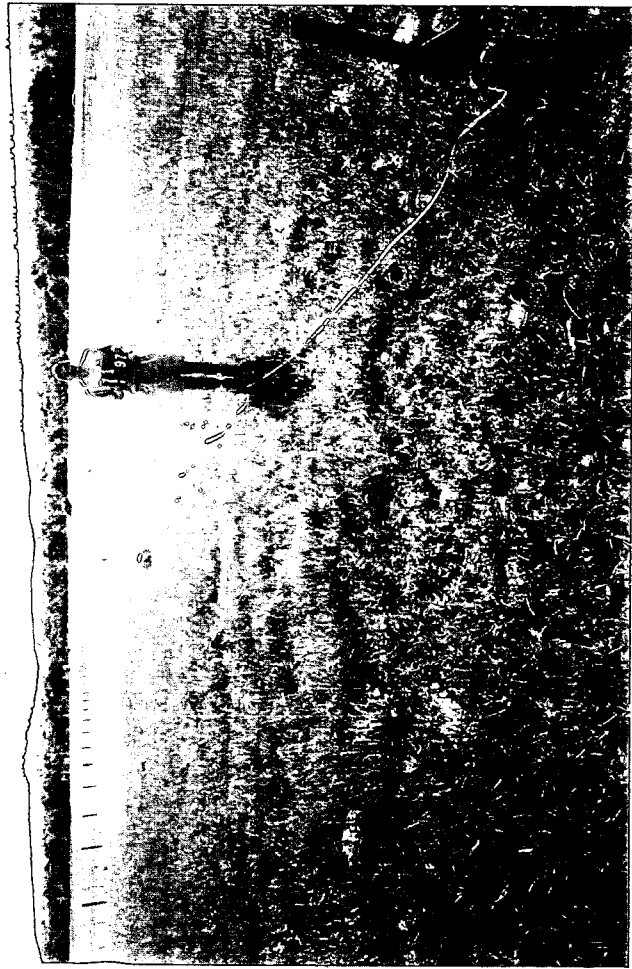
Photograph 8. Area 6 1997, Sample 2.



Photograph 10. Area 7 1997, Sample 2.



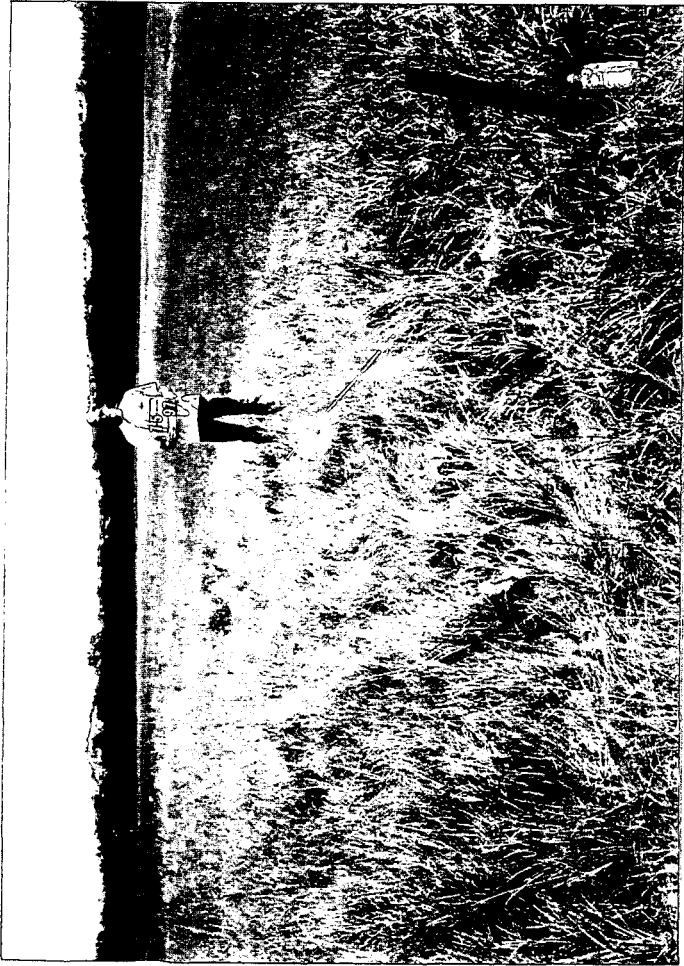
Photograph 12. Area 7 1997, Sample 4.



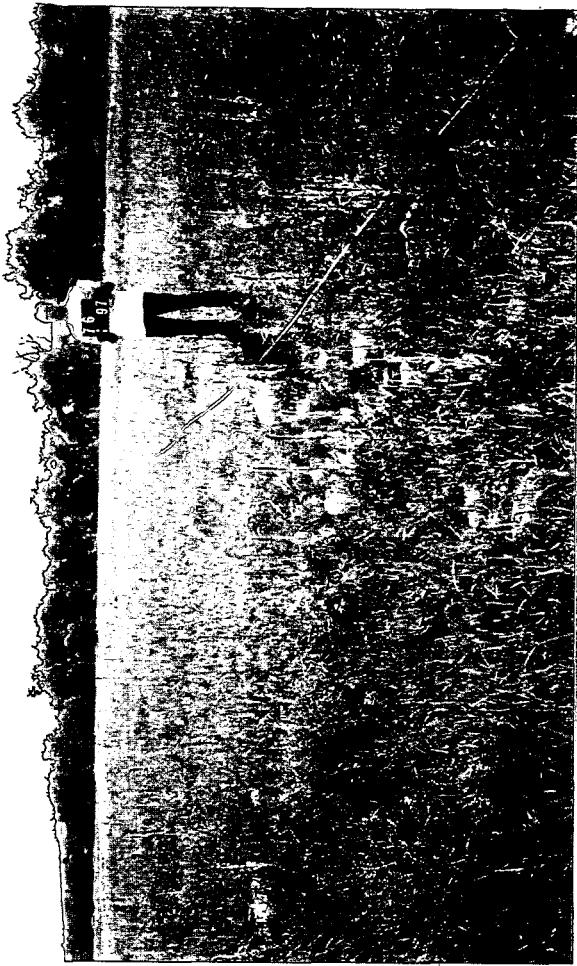
Photograph 9. Area 7 1997, Sample 1.



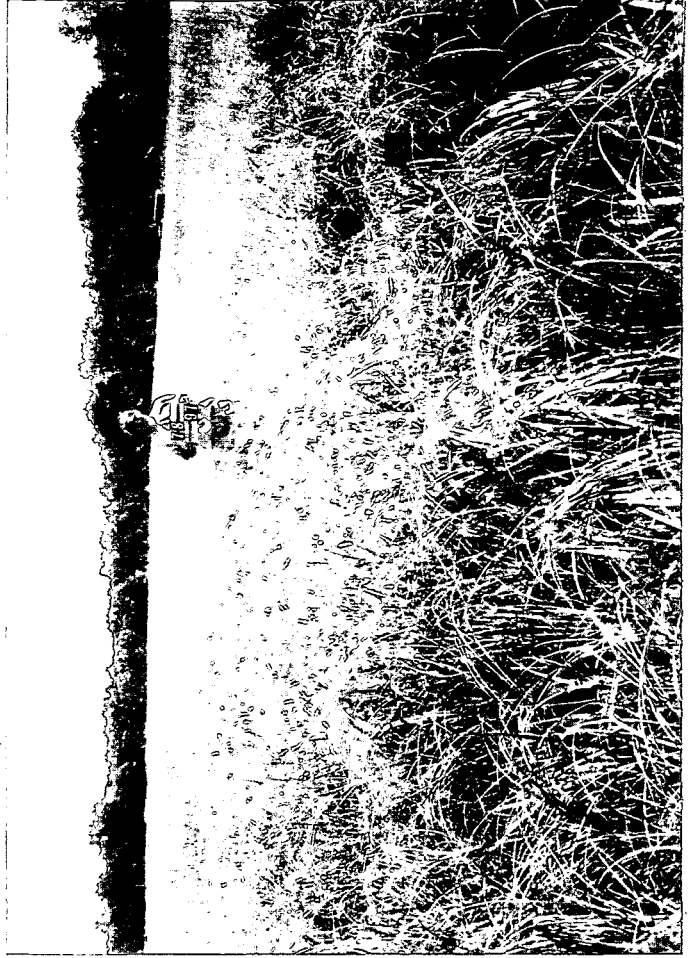
Photograph 11. Area 7 1997, Sample 3.



Photograph 13. Area 7 1997, Sample 5.



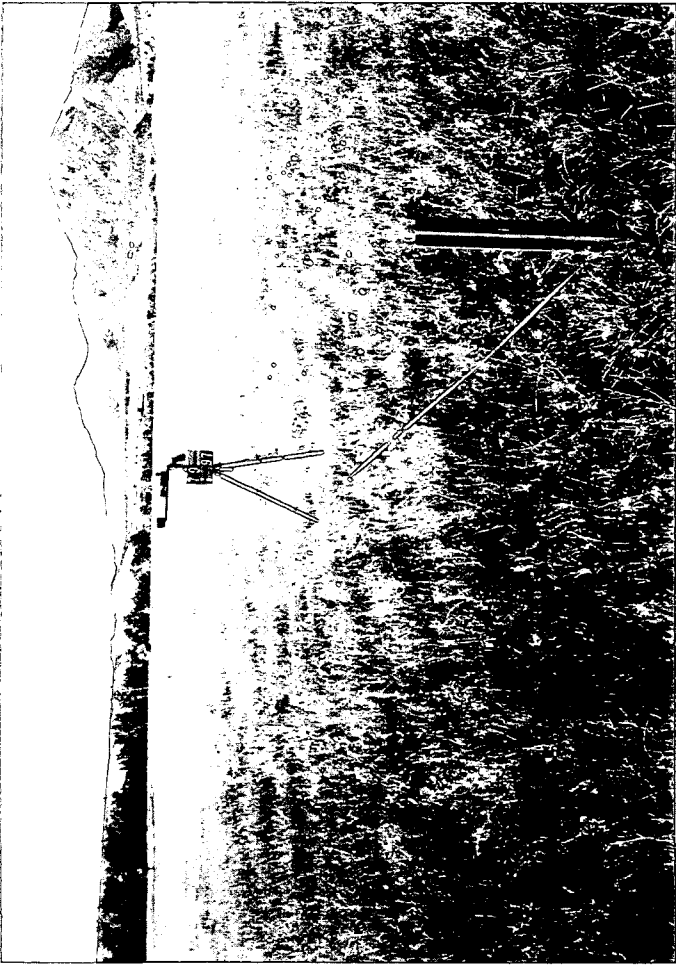
Photograph 14. Area 7 1997, Sample 6.



Photograph 16. Area 7 1997, Sample 8.



Photograph 15. Area 7 1997, Sample 7.



Photograph 17. Area 7 1997, Sample 9.



Photograph 18. Area 7 1997, Sample 10.