

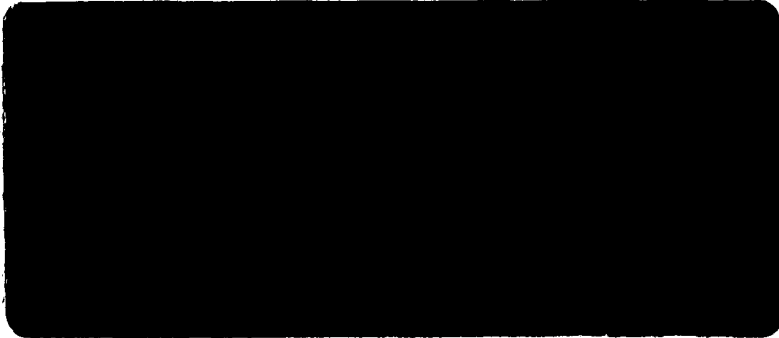
Tallgrass Natural Area Vegetation Moni  
OSMP Studies 3590

Study



ESCO Associates, Inc.

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**Tallgrass Natural Area  
Vegetation Monitoring Data  
1999**

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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Table 1. Cover Data - Area 3, City of Boulder Open Space - 1999.

PLANT SPECIES	AVERAGE COVER (%)	FREQUENCY (%)	RELATIVE VEGETATION COVER (%)	AVERAGE COVER-ALL (%)	RELATIVE VEGETATION COVER-ALL (%)
<b>NATIVE ANNUAL &amp; BIENNIAL FORBS</b>					
<i>Dracocephalum parviflorum</i>	0.00	33.33	0.00	0.00	0.00
<i>Erigeron divergens</i>	0.00	16.67	0.00	0.00	0.00
<b>TOTAL NATIVE ANN. &amp; BIEN. FORBS</b>	<b>0.0</b>	<b>50.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>					
<i>Acosta diffusa</i>	0.00	16.67	0.00	0.00	0.00
<i>Cynoglossum officinale</i>	0.00	33.33	0.00	0.00	0.00
<i>Dianthus armeria</i>	0.00	50.00	0.00	0.00	0.00
<i>Lactuca serriola</i>	0.00	16.67	0.00	0.00	0.00
<i>Melilotus officinalis</i>	0.00	50.00	0.00	0.00	0.00
<i>Plantago lanceolata</i>	3.33	100.00	5.78	3.33	5.46
<i>Tragopogon dubius</i> ssp. <i>major</i>	0.00	33.33	0.00	0.00	0.00
<i>Verbascum blattaria</i>	0.00	16.67	0.00	0.00	0.00
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	<b>3.3</b>	<b>100.0</b>	<b>5.8</b>	<b>3.3</b>	<b>5.5</b>
<b>NATIVE ANNUAL GRASSES</b>					
<i>Panicum capillare</i>	1.33	33.33	2.31	1.50	2.46
<b>TOTAL NATIVE ANN. GRASSES</b>	<b>1.3</b>	<b>33.3</b>	<b>2.3</b>	<b>1.5</b>	<b>2.5</b>
<b>NATIVE PERENNIAL FORBS</b>					
<i>Acetosella vulgaris</i>	0.33	16.67	0.58	0.33	0.55
<i>Achillea lanulosa</i>	0.00	50.00	0.00	0.00	0.00
<i>Ambrosia psilostachya</i> var. <i>coronopifolia</i>	0.67	66.67	1.16	0.67	1.09
<i>Artemisia ludoviciana</i>	0.33	16.67	0.58	0.33	0.55
<i>Asclepias speciosa</i>	0.67	100.00	1.16	0.67	1.09
<i>Asclepias stenophylla</i>	0.00	16.67	0.00	0.00	0.00
<i>Aster laevis</i> var. <i>geyeri</i>	0.00	16.67	0.00	0.00	0.00
<i>Aster lanceolatus</i> ssp. <i>hesperius</i>	0.33	50.00	0.58	0.33	0.55
<i>Aster porteri</i>	0.33	50.00	0.58	0.33	0.55
<i>Comandra umbellata</i> ssp. <i>pallida</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>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>Lythrum alatum</i>	1.50	16.67	2.60	1.50	2.46
<i>Mentha arvensis</i>	0.00	16.67	0.00	0.00	0.00
<i>Oenothera villosa</i>	0.00	16.67	0.00	0.00	0.00
<i>Oligoneuron rigidum</i>	0.17	83.33	0.29	0.17	0.27
<i>Oxalis dillenii</i>	0.00	16.67	0.00	0.00	0.00
<i>Penstemon secundiflorus</i>	0.00	16.67	0.00	0.00	0.00
<i>Psoralidium tenuiflorum</i>	0.50	66.67	0.87	0.83	1.37
<i>Rumex crispus</i>	0.00	16.67	0.00	0.00	0.00
<i>Solidago missouriensis</i>	0.00	16.67	0.00	0.00	0.00
<i>Solidago multiradiata</i>	0.00	16.67	0.00	0.00	0.00
<i>Solidago speciosa</i> var. <i>pallida</i>	0.00	16.67	0.00	0.00	0.00
<i>Thermopsis divaricarpa</i>	0.00	33.33	0.00	0.00	0.00
<i>Verbena hastata</i>	0.00	16.67	0.00	0.00	0.00
<i>Verbena stricta</i>	0.00	33.33	0.00	0.00	0.00
<i>Virgulus falcatus</i>	0.67	83.33	1.16	0.67	1.09
<b>TOTAL NATIVE PERENNIAL FORBS</b>	<b>5.5</b>	<b>100.0</b>	<b>9.5</b>	<b>5.8</b>	<b>9.6</b>

Table 1. Cover Data - Area 3, City of Boulder Open Space - 1999.

PLANT SPECIES	AVERAGE		RELATIVE	RELATIVE	
	COVER (%)	FREQUENCY (%)	VEGETATION COVER (%)	COVER-ALL (%)	VEGETATION COVER-ALL (%)
<b>INTRODUCED PERENNIAL FORBS</b>					
<i>Breca arvensis</i>	0.50	83.33	0.87	0.67	1.09
<i>Cichorium intybus</i>	0.50	66.67	0.87	0.67	1.09
<i>Convolvulus arvensis</i>	0.00	66.67	0.00	0.17	0.27
<i>Daucus carota</i>	3.83	83.33	6.65	4.17	6.83
<i>Hypericum perforatum</i>	0.00	16.67	0.00	0.00	0.00
<i>Sonchus uliginosus</i>	0.17	33.33	0.29	0.17	0.27
<i>Taraxacum officinale</i>	0.50	66.67	0.87	0.50	0.82
<i>Trifolium pratense</i>	0.00	16.67	0.00	0.00	0.00
<i>Trifolium repens</i>	0.00	33.33	0.00	0.00	0.00
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>5.5</b>	<b>100.0</b>	<b>9.5</b>	<b>6.3</b>	<b>10.4</b>
<b>NATIVE PERENNIAL GRASSES (cool)</b>					
<i>Agrostis scabra</i>	0.00	50.00	0.00	0.00	0.00
<i>Carex lanuginosa</i>	2.00	50.00	3.47	2.17	3.55
<i>Carex nebrascensis</i>	0.67	33.33	1.16	0.67	1.09
<i>Carex praegracilis</i>	0.00	33.33	0.00	0.00	0.00
<i>Critesion jubatum</i>	0.17	50.00	0.29	0.17	0.27
<i>Dicanthelium oligosanthes</i> var. <i>scribnerianum</i>	0.17	16.67	0.29	0.33	0.55
<i>Eleocharis palustris</i>	0.33	83.33	0.58	0.33	0.55
<i>Juncus arcticus</i> ssp. <i>ater</i>	3.33	100.00	5.78	3.33	5.46
<i>Juncus interior</i>	0.00	50.00	0.00	0.00	0.00
<i>Juncus longistylis</i>	0.00	33.33	0.00	0.00	0.00
<i>Juncus saximontanus</i>	1.00	66.67	1.73	1.00	1.64
<i>Juncus torreyi</i>	0.00	33.33	0.00	0.00	0.00
<i>Poa agassizensis</i>	2.17	100.00	3.76	2.17	3.55
<i>Poa compressa</i>	0.33	50.00	0.58	0.33	0.55
<i>Typha latifolia</i>	0.00	33.33	0.00	0.00	0.00
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>10.2</b>	<b>100.0</b>	<b>17.6</b>	<b>10.5</b>	<b>17.2</b>
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>					
<i>Agrostis stolonifera</i>	3.17	66.67	5.49	3.50	5.74
<i>Bromopsis inermis</i>	0.17	33.33	0.29	0.17	0.27
<i>Dactylis glomerata</i>	0.00	50.00	0.00	0.00	0.00
<i>Elytrigia repens</i>	1.50	66.67	2.60	1.50	2.46
<i>Phleum pratense</i>	0.17	66.67	0.29	0.17	0.27
<b>TOTAL INTRO. PERENNIAL GRASSES (c)</b>	<b>5.0</b>	<b>100.0</b>	<b>8.7</b>	<b>5.3</b>	<b>8.7</b>
<b>NATIVE PERENNIAL GRASSES (warm)</b>					
<i>Andropogon gerardii</i>	3.67	66.67	6.36	3.83	6.28
<i>Aristida purpurea</i>	0.00	16.67	0.00	0.00	0.00
<i>Chondrosium gracile</i>	0.33	66.67	0.58	0.33	0.55
<i>Muhlenbergia asperifolia</i>	1.50	33.33	2.60	1.50	2.46
<i>Muhlenbergia cuspidata</i>	0.00	16.67	0.00	0.00	0.00
<i>Panicum virgatum</i>	7.67	100.00	13.29	8.33	13.66
<i>Schizachyrium scoparium</i>	0.00	16.67	0.00	0.00	0.00
<i>Sorghastrum avenaceum</i>	6.67	100.00	11.56	7.00	11.48
<i>Spartina pectinata</i>	2.33	33.33	4.05	2.33	3.83
<i>Sporobolus asper</i>	0.50	66.67	0.87	0.50	0.82
<i>Sporobolus cryptandrus</i>	1.33	33.33	2.31	1.33	2.19
<i>Sporobolus heterolepis</i>	0.83	33.33	1.45	0.83	1.37
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>24.8</b>	<b>100.0</b>	<b>43.1</b>	<b>26.0</b>	<b>42.6</b>

Table 1. Cover Data - Area 3, City of Boulder Open Space - 1999.

PLANT SPECIES	AVERAGE COVER (%)	FREQUENCY (%)	RELATIVE VEGETATION COVER (%)	AVERAGE COVER-ALL (%)	RELATIVE VEGETATION COVER-ALL (%)
<b>NATIVE SHRUBS</b>					
<i>Crataegus macracantha</i> var. <i>occidentalis</i>	0.00	16.67	0.00	0.00	0.00
<i>Rosa sayi</i>	0.67	83.33	1.16	0.83	1.37
<i>Rosa woodsii</i>	0.83	16.67	1.45	0.83	1.37
<i>Symphoricarpos occidentalis</i>	0.17	50.00	0.29	0.17	0.27
<i>Yucca glauca</i>	0.00	16.67	0.00	0.00	0.00
<b>TOTAL NATIVE SHRUBS</b>	<b>1.7</b>	<b>100.0</b>	<b>2.9</b>	<b>1.8</b>	<b>3.0</b>
<b>FERNS</b>					
<i>Hippochaete laevigata</i>	0.33	83.33	0.58	0.33	0.55
<b>TOTAL FERNS</b>	<b>0.3</b>	<b>83.3</b>	<b>0.6</b>	<b>0.3</b>	<b>0.5</b>
<b>SUCCULENT</b>					
<i>Opuntia macrorhiza</i>	0.00	50.00	0.00	0.00	0.00
<i>Opuntia phaeacantha</i>	0.00	16.67	0.00	0.00	0.00
<b>TOTAL SUCCULENT</b>	<b>0.0</b>	<b>50.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
Standing dead	1.67	50.00		1.67	
Litter	27.50	100.00		27.50	
Bare soil	12.33	100.00		12.33	
Rock	0.83	50.00		0.83	
<b>TOTALS</b>	<b>100.0</b>			<b>103.3</b>	
<b>TOTAL VEGETATION COVER</b>	<b>57.7 (s=6.5)</b>		<b>100.0</b>	<b>61.0 (s=6.5)</b>	<b>100.0</b>
<b>GROUND COVER (Litter+Rock+Veg+St. Dead)</b>	<b>87.7</b>			<b>91.0</b>	
SPECIES DENSITY (# of species/100 sq.m.) (AVERAGE= 38.0 Std.Dev.= 8.5)					

Table 1. Cover Data - Area 3, City of Boulder Open Space - 1999.

PLANT SPECIES	Percent Foliar Cover*					
	—Sample Number—					
	3-1	3-2	3-3	3-4	3-5	3-6
<b>NATIVE ANNUAL &amp; BIENNIAL FORBS</b>						
<i>Dracocephalum parviflorum</i>					P	P
<i>Erigeron divergens</i>		P				
<b>TOTAL NATIVE ANN. &amp; BIEN. FORBS</b>	—	P	—	—	P	P
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>						
<i>Acosta diffusa</i>		P				
<i>Cynoglossum officinale</i>				P	P	
<i>Dianthus armeria</i>				P	P	P
<i>Lactuca serriola</i>				P		
<i>Melilotus officinalis</i>			P		P	P
<i>Plantago lanceolata</i>	P	2	7	3	2	6
<i>Tragopogon dubius</i> ssp. major		P	P			
<i>Verbascum blattaria</i>					P	
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	P	2	7	3	2	6
<b>NATIVE ANNUAL GRASSES</b>						
<i>Panicum capillare</i>	8(1)		P			
<b>TOTAL NATIVE ANN. GRASSES</b>	8(1)	—	P	—	—	—
<b>NATIVE PERENNIAL FORBS</b>						
<i>Acetosella vulgaris</i>		2				
<i>Achillea lanulosa</i>		P	P		P	
<i>Ambrosia psilostachya</i> var. coronopifolia		2	P		P	2
<i>Artemisia ludoviciana</i>		2				
<i>Asclepias speciosa</i>	P	P	P	3	P	1
<i>Asclepias stenophylla</i>		P				
<i>Aster laevis</i> var. geyeri		P				
<i>Aster lanceolatus</i> ssp. hesperius	P			1	1	
<i>Aster porteri</i>			1			P
<i>Comandra umbellata</i> ssp. pallida		P				
<i>Dalea purpurea</i>		P				
<i>Epilobium ciliatum</i>	P					
<i>Heterotheca fulcrata</i>						P
<i>Heterotheca villosa</i>		P				
<i>Liatris punctata</i>		P				
<i>Lythrum alatum</i>	9					
<i>Mentha arvensis</i>				P		
<i>Oenothera villosa</i>	P					
<i>Oligoneuron rigidum</i>		P	P	P	P	1
<i>Oxalis dillenii</i>		P				
<i>Penstemon secundiflorus</i>		P				
<i>Psoraleidum tenuiflorum</i>		P	2(1)		P	1(1)
<i>Rumex crispus</i>				P		
<i>Solidago missouriensis</i>		P				
<i>Solidago multiradiata</i>						P
<i>Solidago speciosa</i> var. pallida		P				
<i>Thermopsis divaricarpa</i>					P	P
<i>Verbena hastata</i>				P		
<i>Verbena stricta</i>				P	P	
<i>Virgulus falcatus</i>		P	2	1	1	P
<b>TOTAL NATIVE PERENNIAL FORBS</b>	9	7	5(1)	5	2	5(1)

Table 1. Cover Data - Area 3, City of Boulder Open Space - 1999.

PLANT SPECIES	Percent Foliar Cover*					
	-----Sample Number-----					
	3-1	3-2	3-3	3-4	3-5	3-6
<b>INTRODUCED PERENNIAL FORBS</b>						
<i>Breca arvensis</i>	P		1	1(1)	P	1
<i>Cichorium intybus</i>		P	3(1)		P	P
<i>Convolvulus arvensis</i>		P	(1)		P	P
<i>Daucus carota</i>		P	4	4	7(2)	8
<i>Hypericum perforatum</i>		P				
<i>Sonchus uliginosus</i>				1		P
<i>Taraxacum officinale</i>		P		P	P	3
<i>Trifolium pratense</i>						P
<i>Trifolium repens</i>		P	P			
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>P</b>	<b>P</b>	<b>8(2)</b>	<b>6(1)</b>	<b>7(2)</b>	<b>12</b>
<b>NATIVE PERENNIAL GRASSES (cool)</b>						
<i>Agrostis scabra</i>				P	P	P
<i>Carex lanuginosa</i>	P			8(1)	4	
<i>Carex nebrascensis</i>	P			4		
<i>Carex praegracilis</i>			P		P	
<i>Critesion jubatum</i>	P	P		1		
<i>Dicanthelium oligosanthes var. scribnerianum</i>		1(1)				
<i>Eleocharis palustris</i>	P	P		1	1	P
<i>Juncus arcticus ssp. ater</i>	12	3	3	1	P	1
<i>Juncus interior</i>	P				P	P
<i>Juncus longistylis</i>	P			P		
<i>Juncus saximontanus</i>	P			5	1	P
<i>Juncus torreyi</i>				P		P
<i>Poa agassizensis</i>	2	2	6	3	P	P
<i>Poa compressa</i>		P	P			2
<i>Typha latifolia</i>	P			P		
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>14</b>	<b>6(1)</b>	<b>9</b>	<b>23(1)</b>	<b>6</b>	<b>3</b>
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>						
<i>Agrostis stolonifera</i>	8(1)	P	6	5(1)		
<i>Bromopsis inermis</i>			P			1
<i>Dactylis glomerata</i>		P	P	P		
<i>Elytrigia repens</i>	P			4	5	P
<i>Phleum pratense</i>	P	P	P			1
<b>TOTAL INTRO. PERENNIAL GRASSES (c)</b>	<b>8(1)</b>	<b>P</b>	<b>6</b>	<b>9(1)</b>	<b>5</b>	<b>2</b>
<b>NATIVE PERENNIAL GRASSES (warm)</b>						
<i>Andropogon gerardii</i>		10	3		9(1)	P
<i>Aristida purpurea</i>		P				
<i>Chondrosium gracile</i>		2	P		P	P
<i>Muhlenbergia asperifolia</i>					4	5
<i>Muhlenbergia cuspidata</i>	P					
<i>Panicum virgatum</i>	1(1)	19(1)	7(1)	3	7(1)	9
<i>Schizachyrium scoparium</i>			P			
<i>Sorghastrum avenaceum</i>	P	13	6	9(1)	5	7(1)
<i>Spartina pectinata</i>	14	P				
<i>Sporobolus asper</i>		3		P	P	P
<i>Sporobolus cryptandrus</i>		P	8			
<i>Sporobolus heterolepis</i>		1				4
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>15(1)</b>	<b>48(1)</b>	<b>24(1)</b>	<b>12(1)</b>	<b>25(2)</b>	<b>25(1)</b>



Table 1. Cover Data - Area 3, City of Boulder Open Space - 1999.

PLANT SPECIES	Percent Foliar Cover*					
	Sample Number					
	3-1	3-2	3-3	3-4	3-5	3-6
<b>NATIVE SHRUBS</b>						
<i>Crataegus macracantha</i> var. <i>occidentalis</i>		P				
<i>Rosa sayi</i>		(1)	4	P	P	P
<i>Rosa woodsii</i>	5					
<i>Symphoricarpos occidentalis</i>	P	1		P		
<i>Yucca glauca</i>		P				
<b>TOTAL NATIVE SHRUBS</b>	<b>5</b>	<b>1(1)</b>	<b>4</b>	<b>P</b>	<b>P</b>	<b>P</b>
<b>FERNS</b>						
<i>Hippochaete laevigata</i>	P		1	P	P	1
<b>TOTAL FERNS</b>	<b>P</b>	<b>—</b>	<b>1</b>	<b>P</b>	<b>P</b>	<b>1</b>
<b>SUCCULENT</b>						
<i>Opuntia macrorhiza</i>		P	P		P	
<i>Opuntia phaeacantha</i>		P				
<b>TOTAL SUCCULENT</b>	<b>—</b>	<b>P</b>	<b>P</b>	<b>—</b>	<b>P</b>	<b>—</b>
Standing dead				4	1	5
Litter	39	24	22	11	46	23
Bare soil	2	10	12	26	6	18
Rock		2	2	1		
<b>TOTALS</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>59(3)</b>	<b>64(3)</b>	<b>64(4)</b>	<b>58(4)</b>	<b>47(4)</b>	<b>54(2)</b>
<b>GROUND COVER (Litter+Rock+Veg+St. Dead)</b>	<b>98(3)</b>	<b>90(3)</b>	<b>88(4)</b>	<b>74(4)</b>	<b>94(4)</b>	<b>82(2)</b>
<b>SPECIES DENSITY (# of species/100 sq.m.)</b> (AVERAGE= 38.0 Std.Dev.= 8.5)	<b>28</b>	<b>53</b>	<b>33</b>	<b>36</b>	<b>38</b>	<b>40</b>

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

Table 2. Cover Data - Area 6, City of Boulder Open Space - 1999.

PLANT SPECIES	AVERAGE COVER (%)	FREQUENCY (%)	RELATIVE VEGETATION COVER (%)	AVERAGE COVER-ALL (%)	RELATIVE VEGETATION COVER-ALL (%)	Percent Foliar Cover*	
						---Sample Number---	
						6-1	6-2
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>							
<i>Cirsium vulgare</i>	0.00	50.00	0.00	0.00	0.00	P	
<i>Conyza canadensis</i>	0.00	50.00	0.00	0.00	0.00	P	
<i>Mellilotus officinalis</i>	0.00	50.00	0.00	0.00	0.00	P	
<i>Plantago lanceolata</i>	0.00	100.00	0.00	0.00	0.00	P	P
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	<b>0.0</b>	<b>100.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>P</b>	<b>P</b>
<b>NATIVE PERENNIAL FORBS</b>							
<i>Ambrosia psilostachya</i> var. <i>coronopifolia</i>	0.00	50.00	0.00	0.00	0.00	P	
<i>Asclepias speciosa</i>	12.00	100.00	13.79	13.00	12.75	24(2)	P
<i>Aster lanceolatus</i> ssp. <i>hesperius</i>	0.00	50.00	0.00	0.00	0.00	P	
<i>Glycyrrhiza lepidota</i>	0.00	50.00	0.00	0.00	0.00	P	
<i>Rumex crispus</i>	0.00	50.00	0.00	0.00	0.00	P	
<i>Virgulus falcatus</i>	0.00	50.00	0.00	0.00	0.00	P	
<b>TOTAL NATIVE PERENNIAL FORBS</b>	<b>12.0</b>	<b>100.0</b>	<b>13.8</b>	<b>13.0</b>	<b>12.7</b>	<b>24(2)</b>	<b>P</b>
<b>INTRODUCED PERENNIAL FORBS</b>							
<i>Breca arvensis</i>	0.50	100.00	0.57	1.50	1.47	1(2)	P
<i>Convolvulus arvensis</i>	0.50	50.00	0.57	0.50	0.49	1	
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>1.0</b>	<b>100.0</b>	<b>1.1</b>	<b>2.0</b>	<b>2.0</b>	<b>2(2)</b>	<b>P</b>
<b>NATIVE PERENNIAL GRASSES (cool)</b>							
<i>Agrostis scabra</i>	3.00	100.00	3.45	3.50	3.43	6(1)	P
<i>Carex praegracilis</i>	0.00	50.00	0.00	0.00	0.00		P
<i>Carex simulata</i>	0.00	100.00	0.00	0.00	0.00	P	P
<i>Carex vulpinoidea</i>	0.00	50.00	0.00	0.00	0.00		P
<i>Eleocharis palustris</i>	0.00	100.00	0.00	0.00	0.00	P	P
<i>Juncus arcticus</i> ssp. <i>ater</i>	2.50	100.00	2.87	4.50	4.41	3(4)	2
<i>Juncus interior</i>	0.00	50.00	0.00	0.00	0.00		P
<i>Poa agassizensis</i>	4.50	100.00	5.17	4.50	4.41	8	1
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>10.0</b>	<b>100.0</b>	<b>11.5</b>	<b>12.5</b>	<b>12.3</b>	<b>17(5)</b>	<b>3</b>
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>							
<i>Agrostis gigantea</i>	0.00	50.00	0.00	0.00	0.00		P
<i>Agrostis stolonifera</i>	0.50	50.00	0.57	0.50	0.49	1	
<i>Phleum pratense</i>	0.00	50.00	0.00	0.00	0.00		P
<b>TOTAL INTRO. PERENNIAL GRASSES (c)</b>	<b>0.5</b>	<b>100.0</b>	<b>0.6</b>	<b>0.5</b>	<b>0.5</b>	<b>1</b>	<b>P</b>
<b>NATIVE PERENNIAL GRASSES (warm)</b>							
<i>Andropogon gerardii</i>	26.00	100.00	29.89	28.50	27.94	3(1)	49(4)
<i>Panicum virgatum</i>	21.00	100.00	24.14	22.50	22.06	11(2)	31(1)
<i>Schizachyrium scoparium</i>	0.00	50.00	0.00	0.00	0.00	P	
<i>Sporobolus asper</i>	0.50	50.00	0.57	0.50	0.49	1	
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>47.5</b>	<b>100.0</b>	<b>54.6</b>	<b>51.5</b>	<b>50.5</b>	<b>15(3)</b>	<b>80(5)</b>
<b>NATIVE SHRUBS</b>							
<i>Rosa sayi</i>	15.50	100.00	17.82	21.50	21.08	24(10)	7(2)
<i>Symphoricarpos occidentalis</i>	0.50	50.00	0.57	1.00	0.98	1(1)	
<b>TOTAL NATIVE SHRUBS</b>	<b>16.0</b>	<b>100.0</b>	<b>18.4</b>	<b>22.5</b>	<b>22.1</b>	<b>25(11)</b>	<b>7(2)</b>

Table 2. Cover Data - Area 6, City of Boulder Open Space - 1999.

PLANT SPECIES	AVERAGE COVER (%)	FREQUENCY (%)	RELATIVE VEGETATION COVER (%)	AVERAGE COVER-ALL (%)	RELATIVE VEGETATION COVER-ALL (%)	Percent Foliar Cover*	
						Sample Number 6-1	Sample Number 6-2
Standing dead	1.00	50.00		1.00		2	
Litter	6.00	100.00		6.00		3	9
Bare soil	6.00	100.00		6.00		11	1
TOTALS	100.0			115.0		100	100
TOTAL VEGETATION COVER	87.0 (s=4.2)		100.0	102.0 (s=7.1)	100.0	84(23)	90(7)
GROUND COVER (Litter+Rock+Veg+St.Deed)	94.0			109.0		89(23)	99(7)
SPECIES DENSITY (# of species/100 sq.m.) (AVERAGE= 20.0 Std.Dev.= 5.7)						24	16

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

Table 3. Cover Data - Area 7, City of Boulder Open Space - 1999.

PLANT SPECIES	AVERAGE COVER (%)	FREQUENCY (%)	RELATIVE VEGETATION COVER (%)	AVERAGE COVER-ALL (%)	RELATIVE VEGETATION COVER-ALL (%)
<b>NATIVE ANNUAL &amp; BIENNIAL FORBS</b>					
<i>Chenopodium atrovirens</i>	0.00	10.00	0.00	0.00	0.00
<i>Chenopodium rubrum</i>	0.00	20.00	0.00	0.00	0.00
<i>Cirsium undulatum</i>	0.00	30.00	0.00	0.00	0.00
<i>Erigeron divergens</i>	0.00	10.00	0.00	0.00	0.00
<i>Erysimum asperum</i>	0.00	20.00	0.00	0.00	0.00
<i>Grindelia squarrosa</i>	0.00	10.00	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	20.00	0.00	0.00	0.00
<i>Pterogonum alatum</i>	0.20	40.00	0.36	0.20	0.35
<i>Silene antirrhina</i>	0.00	40.00	0.00	0.00	0.00
<b>TOTAL NATIVE ANN. &amp; BIEN. FORBS</b>	<b>0.2</b>	<b>80.0</b>	<b>0.4</b>	<b>0.2</b>	<b>0.3</b>
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>					
<i>Acosta diffusa</i>	0.00	10.00	0.00	0.00	0.00
<i>Alyssum desertorum</i>	0.00	10.00	0.00	0.00	0.00
<i>Alyssum parviflorum</i>	0.00	50.00	0.00	0.00	0.00
<i>Camelina microcarpa</i>	0.00	30.00	0.00	0.00	0.00
<i>Conyza canadensis</i>	0.00	20.00	0.00	0.00	0.00
<i>Dianthus armeria</i>	0.00	60.00	0.00	0.00	0.00
<i>Erodium cicutarium</i>	0.00	40.00	0.00	0.00	0.00
<i>Lactuca serriola</i>	0.00	50.00	0.00	0.00	0.00
<i>Lepidium densiflorum</i>	0.00	50.00	0.00	0.00	0.00
<i>Medicago lupulina</i>	0.00	10.00	0.00	0.00	0.00
<i>Melilotus officinalis</i>	0.00	10.00	0.00	0.00	0.00
<i>Neolepia campestre</i>	0.00	10.00	0.00	0.00	0.00
<i>Plantago lanceolata</i>	1.20	40.00	2.18	1.20	2.08
<i>Podospermum laciniatum</i>	0.00	10.00	0.00	0.00	0.00
<i>Polygonum arenastrum</i>	0.00	10.00	0.00	0.00	0.00
<i>Tragopogon dubius</i> ssp. major	0.10	70.00	0.18	0.10	0.17
<i>Verbascum thapsus</i>	0.00	10.00	0.00	0.00	0.00
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	<b>1.3</b>	<b>90.0</b>	<b>2.4</b>	<b>1.3</b>	<b>2.2</b>
<b>INTRODUCED ANNUAL GRASSES</b>					
<i>Anisantha tectorum</i>	0.00	10.00	0.00	0.00	0.00
<i>Bromus japonicus</i>	0.30	70.00	0.55	0.30	0.52
<b>TOTAL INTRO. ANN. GRASSES</b>	<b>0.3</b>	<b>70.0</b>	<b>0.5</b>	<b>0.3</b>	<b>0.5</b>
<b>NATIVE PERENNIAL FORBS</b>					
<i>Acetosella vulgaris</i>	1.10	70.00	2.00	1.40	2.42
<i>Achillea lanulosa</i>	0.10	50.00	0.18	0.10	0.17
<i>Ambrosia psilostachya</i> var. coronopifolia	1.60	80.00	2.91	1.90	3.29
<i>Aphyllon fasciculatum</i>	0.00	20.00	0.00	0.00	0.00
<i>Artemisia ludoviciana</i>	0.20	60.00	0.36	0.30	0.52
<i>Asclepias speciosa</i>	0.00	10.00	0.00	0.00	0.00
<i>Asclepias stenophylla</i>	0.00	10.00	0.00	0.00	0.00
<i>Asclepias viridiflora</i>	0.00	10.00	0.00	0.00	0.00
<i>Aster lanceolatus</i> ssp. hesperius	0.00	10.00	0.00	0.00	0.00
<i>Aster porteri</i>	0.90	80.00	1.64	0.90	1.56
<i>Astragalus crassicaupus</i>	0.00	20.00	0.00	0.00	0.00
<i>Astragalus</i> spp.	0.00	10.00	0.00	0.00	0.00
<i>Brickellia rosmarinifolia</i> ssp. chlorolepis	0.00	30.00	0.00	0.00	0.00
<i>Calylophus serrulatus</i>	0.00	40.00	0.00	0.00	0.00
<i>Cerastium strictum</i>	0.00	20.00	0.00	0.00	0.00

Table 3. Cover Data - Area 7, City of Boulder Open Space - 1999.

PLANT SPECIES	AVERAGE COVER (%)	FREQUENCY (%)	RELATIVE VEGETATION COVER (%)	AVERAGE COVER-ALL (%)	RELATIVE VEGETATION COVER-ALL (%)
<b>NATIVE PERENNIAL FORBS (continued)</b>					
<i>Comandra umbellata</i> ssp. <i>pallida</i>	0.10	20.00	0.18	0.10	0.17
<i>Dalea candida</i> var. <i>oligophylla</i>	0.00	10.00	0.00	0.00	0.00
<i>Dalea purpurea</i>	0.00	60.00	0.00	0.00	0.00
<i>Drymocallis fissa</i>	0.00	20.00	0.00	0.00	0.00
<i>Epilobium ciliatum</i>	0.00	10.00	0.00	0.00	0.00
<i>Eremogone fendleri</i>	0.00	10.00	0.00	0.00	0.00
<i>Erigeron flagellaris</i>	0.40	50.00	0.73	0.40	0.69
<i>Eriogonum umbellatum</i>	0.10	10.00	0.18	0.10	0.17
<i>Evolvulus nuttallianus</i>	0.00	30.00	0.00	0.00	0.00
<i>Geranium viscosissimum</i> ssp. <i>nervosum</i>	0.00	10.00	0.00	0.00	0.00
<i>Heliomeris multiflora</i>	0.60	10.00	1.09	0.60	1.04
<i>Heterotheca fulcrata</i>	0.00	60.00	0.00	0.00	0.00
<i>Heterotheca villosa</i>	0.00	20.00	0.00	0.00	0.00
<i>Iris missouriensis</i>	0.20	30.00	0.36	0.30	0.52
<i>Lesquerella montana</i>	0.00	40.00	0.00	0.00	0.00
<i>Liatris punctata</i>	0.10	50.00	0.18	0.10	0.17
<i>Lithospermum incisum</i>	0.00	10.00	0.00	0.00	0.00
<i>Lithospermum ruderale</i>	0.00	20.00	0.00	0.00	0.00
<i>Lupinus argenteus</i>	0.00	30.00	0.00	0.00	0.00
<i>Lycopus americanus</i>	0.00	10.00	0.00	0.00	0.00
<i>Noccaea montana</i>	0.00	10.00	0.00	0.00	0.00
<i>Oenothera villosa</i>	0.00	10.00	0.00	0.00	0.00
<i>Oligoneuron rigidum</i>	0.00	40.00	0.00	0.00	0.00
<i>Oxalis dillenii</i>	0.00	60.00	0.00	0.00	0.00
<i>Oxybaphus linearis</i>	0.10	50.00	0.18	0.10	0.17
<i>Oxytropis x sericea</i>	0.00	20.00	0.00	0.00	0.00
<i>Paronychia jamesii</i>	0.20	10.00	0.36	0.20	0.35
<i>Penstemon strictus</i>	0.00	10.00	0.00	0.00	0.00
<i>Phacelia heterophylla</i>	0.00	40.00	0.00	0.00	0.00
<i>Pneumonanthe bigelovii</i>	0.00	20.00	0.00	0.00	0.00
<i>Psoralidium tenuiflorum</i>	1.20	80.00	2.18	1.40	2.42
<i>Ratibida columnifera</i>	0.00	60.00	0.00	0.00	0.00
<i>Senecio spartioides</i>	0.00	30.00	0.00	0.00	0.00
<i>Talinum parviflorum</i>	0.00	20.00	0.00	0.00	0.00
<i>Thermopsis divaricarpa</i>	0.20	10.00	0.36	0.30	0.52
<i>Thermopsis rhombifolia</i>	0.00	20.00	0.00	0.00	0.00
<i>Tithymalus brachyceras</i>	0.00	10.00	0.00	0.00	0.00
<i>Tragia ramosa</i>	0.30	10.00	0.55	0.30	0.52
<i>Verbena hastata</i>	0.40	10.00	0.73	0.50	0.87
<i>Virgulus falcatus</i>	0.30	90.00	0.55	0.30	0.52
<b>TOTAL NATIVE PERENNIAL FORBS</b>	<b>8.1</b>	<b>100.0</b>	<b>14.7</b>	<b>9.3</b>	<b>16.1</b>
<b>INTRODUCED PERENNIAL FORBS</b>					
<i>Breca arvensis</i>	0.00	40.00	0.00	0.00	0.00
<i>Cichorium intybus</i>	0.20	70.00	0.36	0.30	0.52
<i>Convolvulus arvensis</i>	0.60	50.00	1.09	0.60	1.04
<i>Hypericum perforatum</i>	0.00	40.00	0.00	0.00	0.00
<i>Lotus tenuis</i>	0.00	10.00	0.00	0.00	0.00
<i>Potentilla recta</i>	0.00	20.00	0.00	0.00	0.00
<i>Taraxacum officinale</i>	0.00	30.00	0.00	0.00	0.00
<i>Trifolium repens</i>	0.00	10.00	0.00	0.00	0.00
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>0.8</b>	<b>100.0</b>	<b>1.5</b>	<b>0.9</b>	<b>1.6</b>

Table 3. Cover Data - Area 7, City of Boulder Open Space - 1999.

PLANT SPECIES	AVERAGE COVER (%)	FREQUENCY (%)	RELATIVE VEGETATION COVER (%)	AVERAGE COVER-ALL (%)	RELATIVE VEGETATION COVER-ALL (%)
<b>NATIVE PERENNIAL GRASSES (cool)</b>					
Agrostis scabra	0.00	10.00	0.00	0.00	0.00
Carex lanuginosa	0.20	20.00	0.36	0.20	0.35
Carex nebrascensis	0.70	20.00	1.27	0.70	1.21
Carex pennsylvanica ssp. heliophila	0.00	60.00	0.00	0.10	0.17
Carex praegracilis	0.20	10.00	0.36	0.20	0.35
Carex spp.	0.10	10.00	0.18	0.10	0.17
Dicanthelium oligosanthes var. scribnerianum	0.30	50.00	0.55	0.30	0.52
Eleocharis palustris	0.20	30.00	0.36	0.20	0.35
Elymus longifolius	0.00	40.00	0.00	0.00	0.00
Hesperostipa comata	1.10	60.00	2.00	1.10	1.90
Juncus arcticus ssp. ater	2.90	40.00	5.27	3.00	5.19
Juncus interior	0.20	80.00	0.36	0.20	0.35
Koeleria macrantha	0.00	70.00	0.00	0.00	0.00
Pascopyrum smithii	0.10	30.00	0.18	0.10	0.17
Poa agassizensis	4.00	80.00	7.27	4.30	7.44
Poa compressa	1.20	80.00	2.18	1.30	2.25
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>11.2</b>	<b>100.0</b>	<b>20.4</b>	<b>11.8</b>	<b>20.4</b>
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>					
Agrostis gigantea	0.10	10.00	0.18	0.20	0.35
Agrostis stolonifera	0.20	20.00	0.36	0.20	0.35
Bromopsis inermis	0.10	10.00	0.18	0.10	0.17
Dactylis glomerata	0.10	10.00	0.18	0.10	0.17
Elytrigia repens	0.20	10.00	0.36	0.20	0.35
Phleum pratense	0.10	10.00	0.18	0.10	0.17
<b>TOTAL INTRO. PERENNIAL GRASSES (c)</b>	<b>0.8</b>	<b>40.0</b>	<b>1.5</b>	<b>0.9</b>	<b>1.6</b>
<b>NATIVE PERENNIAL GRASSES (warm)</b>					
Andropogon gerardii	10.00	90.00	18.18	10.40	17.99
Aristida purpurea	0.00	50.00	0.00	0.00	0.00
Bouteloua curtipendula	1.30	70.00	2.36	1.30	2.25
Buchloe dactyloides	0.00	30.00	0.00	0.00	0.00
Calamovilfa longifolia	0.00	30.00	0.00	0.00	0.00
Chondrosium gracile	1.50	80.00	2.73	1.50	2.60
Chondrosium hirsutum	0.00	10.00	0.00	0.00	0.00
Muhlenbergia cuspidata	0.40	30.00	0.73	0.40	0.69
Panicum virgatum	8.20	100.00	14.91	8.30	14.36
Schizachyrium scoparium	0.20	60.00	0.36	0.20	0.35
Sorghastrum avenaceum	1.80	70.00	3.27	1.80	3.11
Spartina pectinata	5.40	20.00	9.82	5.70	9.86
Sporobolus asper	0.80	40.00	1.45	0.80	1.38
Sporobolus cryptandrus	0.70	60.00	1.27	0.70	1.21
Sporobolus heterolepis	0.50	30.00	0.91	0.50	0.87
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>30.8</b>	<b>100.0</b>	<b>56.0</b>	<b>31.6</b>	<b>54.7</b>
<b>NATIVE SUBSHRUBS</b>					
Artemisia frigida	0.40	70.00	0.73	0.40	0.69
Gutierrezia sarothrae	0.10	20.00	0.18	0.10	0.17
<b>TOTAL NATIVE SUBSHRUBS</b>	<b>0.5</b>	<b>70.0</b>	<b>0.9</b>	<b>0.5</b>	<b>0.9</b>

Table 3. Cover Data - Area 7, City of Boulder Open Space - 1999.

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	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>	0.20	60.00	0.36	0.20	0.35
<i>Symphoricarpos occidentalis</i>	0.00	20	0.00	0.00	0.00
<i>Yucca glauca</i>	0.00	30.00	0.00	0.00	0.00
<b>TOTAL NATIVE SHRUBS</b>	<b>0.2</b>	<b>70.0</b>	<b>0.4</b>	<b>0.2</b>	<b>0.3</b>
<b>FERNS</b>					
<i>Hippochaete variegata</i>	0.00	10.00	0.00	0.00	0.00
<b>TOTAL FERNS</b>	<b>0.0</b>	<b>10.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>LICHEN</b>					
<i>Xanthoparmelia chlorochroa</i>	0.00	30.00	0.00	0.00	0.00
<b>TOTAL LICHEN</b>	<b>0.0</b>	<b>30.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>SUCCULENT</b>					
<i>Echinocereus viridiflorus</i>	0.20	50.00	0.36	0.20	0.35
<i>Opuntia fragilis</i>	0.20	60.00	0.36	0.20	0.35
<i>Opuntia macrorhiza</i>	0.40	80.00	0.73	0.40	0.69
<i>Opuntia phaeacantha</i>	0.00	10.00	0.00	0.00	0.00
<b>TOTAL SUCCULENT</b>	<b>0.8</b>	<b>80.0</b>	<b>1.5</b>	<b>0.8</b>	<b>1.4</b>
<b>MUSHROOMS</b>					
Fungus	0.00	30.00	0.00	0.00	0.00
<b>TOTAL MUSHROOMS</b>	<b>0.0</b>	<b>30.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
Standing dead	0.40	40.00		0.40	
Litter	31.80	100.00		31.80	
Bare soil	10.00	90.00		10.00	
Rock	2.80	60.00		2.80	
<b>TOTALS</b>	<b>100.0</b>			<b>102.8</b>	
<b>TOTAL VEGETATION COVER</b>	<b>55.0 (s=11.3)</b>		<b>100.0</b>	<b>57.8 (s=12.6)</b>	<b>100.0</b>
<b>GROUND COVER (Litter+Rock+Veg+St. Dead)</b>	<b>90.0</b>			<b>92.8</b>	
SPECIES DENSITY (# of species/100 sq.m.) (AVERAGE= 47.7 Std.Dev.= 18.8)					

Table 3. Cover Data - Area 7, City of Boulder Open Space - 1999.

PLANT SPECIES	Percent Foliar Cover*									
	-----Sample Number-----									
	7-1	7-2	7-3	7-4	7-5	7-6	7-7	7-8	7-9	7-10
<b>NATIVE ANNUAL &amp; BIENNIAL FORBS</b>										
<i>Chenopodium atrovirens</i>						P				P
<i>Chenopodium rubrum</i>		P					P			
<i>Cirsium undulatum</i>		P	P							P
<i>Erigeron divergens</i>				P						
<i>Erysimum asperum</i>			P			P				
<i>Grindelia squarrosa</i>									P	
<i>Oligosporus pacificus</i>		P	P	P		P			P	P
<i>Oreocarya virgata</i>		P								P
<i>Pterogonum alatum</i>		1				P			1	P
<i>Silene antirrhina</i>	P	P	P		P					
<b>TOTAL NATIVE ANN. &amp; BIEN. FORBS</b>	P	1	P	P	P	P	--	--	1	P
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>										
<i>Acosta diffusa</i>									P	
<i>Alyssum desertorum</i>										P
<i>Alyssum parviflorum</i>		P	P	P		P			P	
<i>Camelina microcarpa</i>			P	P		P				
<i>Conyza canadensis</i>						P			P	
<i>Dianthus armeria</i>	P	P		P	P		P		P	
<i>Erodium cicutarium</i>		P		P					P	
<i>Lactuca serriola</i>		P			P					P
<i>Lepidium densiflorum</i>	P	P	P			P			P	
<i>Medicago lupulina</i>									P	
<i>Melilotus officinalis</i>									P	
<i>Neolepia campestre</i>					P					
<i>Plantago lanceolata</i>		P		P			P		12	
<i>Podospermum laciniatum</i>				P						
<i>Polygonum arenastrum</i>				P						
<i>Tragopogon dubius ssp. major</i>	P	P	P	P	P	P			1	
<i>Verbascum thapsus</i>						P				
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	P	P	P	P	P	P	P	--	13	P
<b>INTRODUCED ANNUAL GRASSES</b>										
<i>Anisantha tectorum</i>			P							
<i>Bromus japonicus</i>		P	3	P	P	P			P	P
<b>TOTAL INTRO. ANN. GRASSES</b>	--	P	3	P	P	P	--	--	P	P
<b>NATIVE PERENNIAL FORBS</b>										
<i>Acetosella vulgaris</i>		1	4	P	P	2(1)			4(2)	P
<i>Achillea lanulosa</i>		1		P	P	P			P	
<i>Ambrosia psilostachya var. coronopifolia</i>	P	P	1	P	1(1)	4			3	7(2)
<i>Aphyllon fasciculatum</i>			P							P
<i>Artemisia ludoviciana</i>	P	P	1	1(1)	P					
<i>Asclepias speciosa</i>							P			
<i>Asclepias stenophylla</i>				P						
<i>Asclepias viridiflora</i>										P
<i>Aster lanceolatus ssp. hesperius</i>				P						
<i>Aster porteri</i>	3	P	P	5	1	P	P			P
<i>Astragalus crassicaarpus</i>						P			P	
<i>Astragalus spp.</i>					P					
<i>Brickellia rosmarinifolia ssp. chlorolepis</i>		P				P			P	
<i>Calylophus serrulatus</i>			P			P			P	P
<i>Cerastium strictum</i>			P							P



Table 3. Cover Data - Area 7, City of Boulder Open Space - 1999.

PLANT SPECIES	Percent Foliar Cover*									
	Sample Number									
	7-1	7-2	7-3	7-4	7-5	7-6	7-7	7-8	7-9	7-10
<b>NATIVE PERENNIAL FORBS (continued)</b>										
<i>Comandra umbellata</i> ssp. <i>pallida</i>				P		1				
<i>Dalea candida</i> var. <i>oligophylla</i>									P	
<i>Dalea purpurea</i>		P	P	P		P			P	P
<i>Drymocallis fissa</i>			P			P				
<i>Epilobium ciliatum</i>								P		
<i>Eremogone fendleri</i>						P				
<i>Erigeron flagellaris</i>		P	P			P			3	1
<i>Eriogonum umbellatum</i>			1							
<i>Evolvulus nuttallianus</i>		P							P	P
<i>Geranium viscosissimum</i> ssp. <i>nervosum</i>					P					
<i>Heliomeris multiflora</i>										6
<i>Heterotheca fulcrata</i>		P	P		P	P			P	P
<i>Heterotheca villosa</i>				P						P
<i>Iris missouriensis</i>				P	(1)		2			
<i>Lesquerella montana</i>		P				P			P	P
<i>Liatris punctata</i>		P	1	P					P	P
<i>Lithospermum incisum</i>			P							
<i>Lithospermum ruderalis</i>		P							P	
<i>Lupinus argenteus</i>			P			P			P	
<i>Lycopus americanus</i>								P		
<i>Noccaea montana</i>									P	
<i>Oenothera villosa</i>	P									
<i>Oligoneuron rigidum</i>				P		P	P		P	
<i>Oxalis dillenii</i>		P		P	P	P			P	P
<i>Oxybaphus linearis</i>		P	P			P			1	P
<i>Oxytropis x sericea</i>			P							P
<i>Paronychia jamesii</i>										2
<i>Penstemon strictus</i>		P								
<i>Phacelia heterophylla</i>		P	P			P				P
<i>Pneumonanthe bigelovii</i>				P			P			
<i>Psoraleidum tenuiflorum</i>	P	2	2	2	P	1(1)			4(1)	1
<i>Ratibida columnifera</i>			P	P	P	P			P	P
<i>Senecio spartioides</i>			P			P				P
<i>Talinum parviflorum</i>	P									P
<i>Thermopsis divaricarpa</i>					2(1)					
<i>Thermopsis rhombifolia</i>		P					P			
<i>Tithymalus brachyceras</i>										P
<i>Tragia ramosa</i>										3
<i>Verbena hastata</i>								4(1)		
<i>Virgulus falcatus</i>	1	P	P	1	P	P	1		P	P
<b>TOTAL NATIVE PERENNIAL FORBS</b>	<b>4</b>	<b>4</b>	<b>10</b>	<b>9(1)</b>	<b>4(3)</b>	<b>8(2)</b>	<b>3</b>	<b>4(1)</b>	<b>15(3)</b>	<b>20(2)</b>
<b>INTRODUCED PERENNIAL FORBS</b>										
<i>Breea arvensis</i>		P			P	P		P		
<i>Cichorium intybus</i>	1	P		P	(1)		P		1	P
<i>Convolvulus arvensis</i>	1	3		P	2				P	
<i>Hypericum perforatum</i>		P	P			P				P
<i>Lotus tenuis</i>							P			
<i>Potentilla recta</i>								P	P	
<i>Taraxacum officinale</i>		P	P						P	P
<i>Trifolium repens</i>									P	
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>2</b>	<b>3</b>	<b>P</b>	<b>P</b>	<b>2(1)</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>1</b>	<b>P</b>

Table 3. Cover Data - Area 7, City of Boulder Open Space - 1999.

PLANT SPECIES	Percent Foliar Cover*									
	Sample Number									
	7-1	7-2	7-3	7-4	7-5	7-6	7-7	7-8	7-9	7-10
<b>NATIVE PERENNIAL GRASSES (cool)</b>										
<i>Agrostis scabra</i>						P				
<i>Carex lanuginosa</i>					2			P		
<i>Carex nebrascensis</i>					7			P		
<i>Carex pennsylvanica</i> ssp. <i>heliophila</i>		P	P	P		P			P	(1)
<i>Carex praegracilis</i>							2			
<i>Carex</i> spp.		1								
<i>Dicanthelium oligosanthes</i> var. <i>scribnerianum</i>		2		P		1	P		P	
<i>Eleocharis palustris</i>						P	2	P		
<i>Elymus longifolius</i>	P			P					P	P
<i>Hesperostipa comata</i>		3	5		P	2			P	1
<i>Juncus arcticus</i> ssp. <i>ater</i>				2	2		5(1)	20		
<i>Juncus interior</i>	P	P		P	P	P	1	P	1	
<i>Koeleria macrantha</i>		P	P	P	P	P			P	P
<i>Pascopyrum smithii</i>		P			1		P			
<i>Poa agassizensis</i>		7(1)	1	1	13	5(2)	4		9	P
<i>Poa compressa</i>	5	1	P	1	3	1	1(1)		P	
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>5</b>	<b>14(1)</b>	<b>6</b>	<b>4</b>	<b>28</b>	<b>9(2)</b>	<b>15(2)</b>	<b>20</b>	<b>10</b>	<b>1(1)</b>
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>										
<i>Agrostis gigantea</i>							1(1)			
<i>Agrostis stolonifera</i>	2								P	
<i>Bromopsis inermis</i>					1					
<i>Dactylis glomerata</i>					1					
<i>Elytrigia repens</i>					2					
<i>Phleum pratense</i>							1			
<b>TOTAL INTRO. PERENNIAL GRASSES (c)</b>	<b>2</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>4</b>	<b>---</b>	<b>2(1)</b>	<b>---</b>	<b>P</b>	<b>---</b>
<b>NATIVE PERENNIAL GRASSES (warm)</b>										
<i>Andropogon gerardii</i>	6	9	11	32(3)	15(1)	10	1		13	3
<i>Aristida purpurea</i>		P	P	P					P	P
<i>Bouteloua curtipendula</i>		2	P	1	P	P			2	8
<i>Buchloe dactyloides</i>	P			P						P
<i>Calamovilfa longifolia</i>			P			P			P	
<i>Chondrosium gracile</i>	1	P	1	4	P	P			3	6
<i>Chondrosium hirsutum</i>										P
<i>Muhlenbergia cuspidata</i>	P						3			1
<i>Panicum virgatum</i>	9	12(1)	2	1	9	20	23	P	5	1
<i>Schizachyrium scoparium</i>	1			P		1	P		P	P
<i>Sorghastrum avenaceum</i>	5	P		2		4	7		P	P
<i>Spartina pectinata</i>					8			46(3)		
<i>Sporobolus asper</i>	6	1	1						P	
<i>Sporobolus cryptandrus</i>		4		2		P	1		P	P
<i>Sporobolus heterolepis</i>	P			P			5			
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>28</b>	<b>28(1)</b>	<b>15</b>	<b>42(3)</b>	<b>32(1)</b>	<b>35</b>	<b>40</b>	<b>46(3)</b>	<b>23</b>	<b>19</b>
<b>NATIVE SUBSHRUBS</b>										
<i>Artemisia frigida</i>		P	3	P	P	P			P	1
<i>Gutierrezia sarothrae</i>									P	1
<b>TOTAL NATIVE SUBSHRUBS</b>	<b>---</b>	<b>P</b>	<b>3</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>2</b>

Table 3. Cover Data - Area 7, City of Boulder Open Space - 1999.

PLANT SPECIES	Percent Foliar Cover*									
	Sample Number									
	7-1	7-2	7-3	7-4	7-5	7-6	7-7	7-8	7-9	7-10
<b>NATIVE SHRUBS</b>										
<i>Amorpha nana</i>		P							P	
<i>Eriogonum effusum</i>			P							
<i>Rosa sayi</i>		P			1	P	1		P	P
<i>Symphoricarpos occidentalis</i>		P			P					
<i>Yucca glauca</i>			P			P				P
<b>TOTAL NATIVE SHRUBS</b>	--	P	P	--	1	P	1	--	P	P
<b>FERNS</b>										
<i>Hippochaete variegata</i>						P				
<b>TOTAL FERNS</b>	--	--	--	--	--	P	--	--	--	--
<b>LICHEN</b>										
<i>Xanthoparmelia chlorochroa</i>		P	P			P				
<b>TOTAL LICHEN</b>	--	P	P	--	--	P	--	--	--	--
<b>SUCCULENT</b>										
<i>Echinocereus viridiflorus</i>		P	2	P		P				P
<i>Opuntia fragilis</i>	1	P	1			P			P	P
<i>Opuntia macrorhiza</i>	P	P	P	P	P	1			1	2
<i>Opuntia phaeacantha</i>					P					
<b>TOTAL SUCCULENT</b>	1	P	3	P	P	1	--	--	1	2
<b>MUSHROOMS</b>										
Fungus		P	P							P
<b>TOTAL MUSHROOMS</b>	--	P	P	--	--	--	--	--	--	P
Standing dead	1	1				1	1			
Litter	36	26	45	37	25	29	35	30	20	35
Bare soil	12	23	13	4	4	16	3		14	11
Rock	9		2	4		1			2	10
<b>TOTALS</b>	100	100	100	100	100	100	100	100	100	100
<b>TOTAL VEGETATION COVER</b>	42	50(2)	40	55(4)	71(5)	53(4)	61(3)	70(4)	64(3)	44(3)
<b>GROUND COVER (Litter+Rock+Veg+St. Dead)</b>	88	77(2)	87	96(4)	96(5)	84(4)	97(3)	100(4)	86(3)	89(3)
<b>SPECIES DENSITY (# of species/100 sq.m.)</b> (AVERAGE= 47.7 Std.Dev.= 18.8)	28	65	55	52	45	62	29	12	66	63

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

Table 4. Area 3, Transect 1, City of Boulder Open Space, CO - 1999.

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		Sample Number									
		1	2	3	4	5	6	7	8	9	10
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>											
<i>Plantago lanceolata</i>	10.00		P								
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	10.0	--	P	--	--	--	--	--	--	--	--
<b>NATIVE ANNUAL GRASSES</b>											
<i>Panicum capillare</i>	80.00	P	P	P	P	P		P		P	P
<b>TOTAL NATIVE ANN. GRASSES</b>	80.0	P	P	P	P	P	--	P	--	P	P
<b>NATIVE PERENNIAL FORBS</b>											
<i>Asclepias speciosa</i>	30.00		P	P		P					
<i>Epilobium ciliatum</i>	10.00								P		
<i>Lythrum alatum</i>	40.00							P	P	P	P
<b>TOTAL NATIVE PERENNIAL FORBS</b>	70.0	--	P	P	--	P	--	P	P	P	P
<b>INTRODUCED PERENNIAL FORBS</b>											
<i>Brea arvensis</i>	70.00	P		P		P	P	P	P		P
<b>TOTAL INTRO. PERENNIAL FORBS</b>	70.0	P	--	P	--	P	P	P	P	--	P
<b>NATIVE PERENNIAL GRASSES (cool)</b>											
<i>Carex lanuginosa</i>	80.00	P	P	P	P		P	P		P	P
<i>Carex nebrascensis</i>	30.00							P	P	P	
<i>Critesion jubatum</i>	10.00										P
<i>Eleocharis palustris</i>	10.00					P					
<i>Juncus arcticus ssp. ater</i>	60.00				P		P	P	P	P	P
<i>Juncus interior</i>	10.00			P							
<i>Juncus longistylis</i>	60.00			P	P			P	P	P	P
<i>Juncus saximontanus</i>	40.00							P	P	P	P
<i>Poa agassizensis</i>	60.00		P	P		P	P		P		P
<i>Typha latifolia</i>	10.00										P
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	100.0	P	P	P	P	P	P	P	P	P	P
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>											
<i>Agrostis stolonifera</i>	60.00	P	P	P	P	P					P
<i>Elytrigia repens</i>	30.00	P	P	P							
<i>Phleum pratense</i>	10.00									P	
<b>TOTAL INTRO. PERENNIAL GRASSES (c)</b>	70.0	P	P	P	P	P	--	--	--	P	P
<b>NATIVE PERENNIAL GRASSES (warm)</b>											
<i>Muhlenbergia cuspidata</i>	10.00							P			
<i>Panicum virgatum</i>	50.00	P	P	P	P	P					
<i>Sorghastrum avenaceum</i>	50.00	P	P	P	P		P				
<i>Spartina pectinata</i>	30.00					P	P	P			
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	70.0	P	P	P	P	P	P	P	--	--	--
<b>NATIVE SHRUBS</b>											
<i>Rosa woodsii</i>	50.00	P	P					P	P	P	
<i>Symphoricarpos occidentalis</i>	20.00			P		P					
<b>TOTAL NATIVE SHRUBS</b>	70.0	P	P	P	--	P	--	P	P	P	--
<b>FERNS</b>											
<i>Hippochaete laevigata</i>	20.00					P					P
<b>TOTAL FERNS</b>	20.0	--	--	--	--	P	--	--	--	--	P
<b>SPECIES DENSITY (# of species/100 sq.m.) (AVERAGE= 9.4 Std.Dev.= 2.0)</b>											
		8	10	12	7	10	6	11	9	9	12

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

Table 5. Area 3, Transect 2, City of Boulder Open Space, CO - 1999.

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		-----Sample Number-----									
		1	2	3	4	5	6	7	8	9	10
<b>NATIVE ANNUAL &amp; BIENNIAL FORBS</b>											
<i>Erigeron divergens</i>	30.00								P	P	P
<b>TOTAL NATIVE ANN. &amp; BIEN. FORBS</b>	<b>30.0</b>	---	---	---	---	---	---	---	P	P	P
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>											
<i>Acosta diffusa</i>	20.00							P		P	
<i>Plantago lanceolata</i>	40.00		P			P		P			P
<i>Tragopogon dubius</i> ssp. <i>major</i>	70.00		P	P			P	P	P	P	P
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	<b>80.0</b>	---	P	P	---	P	P	P	P	P	P
<b>NATIVE PERENNIAL FORBS</b>											
<i>Acetosella vulgaris</i>	50.00		P				P	P	P	P	
<i>Achillea lanulosa</i>	30.00		P				P				P
<i>Ambrosia psilostachya</i> var. <i>coronopifolia</i>	50.00				P			P	P	P	P
<i>Artemisia ludoviciana</i>	20.00			P							P
<i>Asclepias speciosa</i>	30.00				P	P	P				
<i>Asclepias stenophylla</i>	10.00			P							
<i>Aster porteri</i>	50.00	P		P		P	P	P			
<i>Comandra umbellata</i> ssp. <i>pallida</i>	20.00									P	P
<i>Heterotheca villosa</i>	10.00								P		
<i>Liatris punctata</i>	40.00		P					P	P		P
<i>Oligoneuron rigidum</i>	70.00	P	P	P	P	P	P				P
<i>Oxalis dillenii</i>	10.00			P							
<i>Penstemon secundiflorus</i>	10.00									P	
<i>Psoraleidum tenuiflorum</i>	40.00		P				P			P	P
<i>Solidago missouriensis</i>	20.00		P					P			
<i>Solidago speciosa</i> var. <i>pallida</i>	10.00										P
<i>Virgulus falcatus</i>	60.00	P				P	P	P	P		P
<b>TOTAL NATIVE PERENNIAL FORBS</b>	<b>100.0</b>	P	P	P	P	P	P	P	P	P	P
<b>INTRODUCED PERENNIAL FORBS</b>											
<i>Cichorium intybus</i>	50.00		P		P	P	P	P			
<i>Convolvulus arvensis</i>	30.00	P								P	P
<i>Daucus carota</i>	20.00			P		P					
<i>Taraxacum officinale</i>	10.00										P
<i>Trifolium repens</i>	10.00		P								
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>90.0</b>	P	P	P	P	P	P	P	---	P	P
<b>NATIVE PERENNIAL GRASSES (cool)</b>											
<i>Critesion jubatum</i>	10.00								P		
<i>Dicanthelium oligosanthes</i> var. <i>scribnerianum</i>	70.00		P	P	P	P	P	P			P
<i>Eleocharis palustris</i>	10.00				P						
<i>Juncus arcticus</i> ssp. <i>ater</i>	70.00		P	P	P	P	P		P		P
<i>Poa agassizensis</i>	40.00	P				P				P	P
<i>Poa compressa</i>	70.00			P	P	P	P	P		P	P
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>100.0</b>	P	P	P	P	P	P	P	P	P	P
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>											
<i>Agrostis stolonifera</i>	20.00				P	P					
<i>Dactylis glomerata</i>	10.00									P	
<i>Phleum pratense</i>	20.00				P	P					
<b>TOTAL INTRO. PERENNIAL GRASSES (c)</b>	<b>30.0</b>	---	---	---	P	P	---	---	---	P	---

Table 5. Area 3, Transect 2, City of Boulder Open Space, CO - 1999.

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		-----Sample Number-----									
		1	2	3	4	5	6	7	8	9	10
<b>NATIVE PERENNIAL GRASSES (warm)</b>											
<i>Andropogon gerardii</i>	30.00							P	P	P	
<i>Aristida purpurea</i>	10.00		P								
<i>Chondrosium gracile</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>	80.00	P	P	P	P	P	P			P	P
<i>Spartina pectinata</i>	10.00								P		
<i>Sporobolus cryptandrus</i>	70.00	P	P	P	P	P		P			P
<i>Sporobolus heterolepis</i>	20.00			P	P						
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>100.0</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>
<b>NATIVE SHRUBS</b>											
<i>Crataegus macracantha</i> var. <i>occidentalis</i>	10.00						P				
<i>Rosa sayi</i>	20.00								P	P	
<i>Symphoricarpos occidentalis</i>	10.00										P
<i>Yucca glauca</i>	10.00			P							
<b>TOTAL NATIVE SHRUBS</b>	<b>50.0</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>---</b>	<b>P</b>	<b>P</b>	<b>P</b>
<b>SUCCULENT</b>											
<i>Opuntia macrorhiza</i>	50.00		P	P				P		P	P
<b>TOTAL SUCCULENT</b>	<b>50.0</b>	<b>---</b>	<b>P</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>---</b>	<b>P</b>	<b>P</b>
<b>SPECIES DENSITY (# of species/100 sq.m.)</b> <b>(AVERAGE= 16.1 Std.Dev.= 3.5)</b>		<b>9</b>	<b>17</b>	<b>16</b>	<b>15</b>	<b>16</b>	<b>16</b>	<b>17</b>	<b>14</b>	<b>18</b>	<b>23</b>

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



Table 6. Area 3 Transect 3, City of Boulder Open Space, CO - 1999.

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		-----Sample Number-----									
		1	2	3	4	5	6	7	8	9	10
FERNS											
<i>Hippochaete laevigata</i>	80.00	P	P	P	P	P		P	P	P	
TOTAL FERNS	80.0	P	P	P	P	P	---	P	P	P	---
SUCCULENT											
<i>Opuntia macrorhiza</i>	10.00							P			
TOTAL SUCCULENT	10.0	---	---	---	---	---	P	---	---	---	---
SPECIES DENSITY (# of species/100 sq.m.) (AVERAGE= 13.0 Std.Dev.= 3.5)		19	16	10	12	10	16	12	14	14	7.

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



Table 7. Area 3, Transect 4, City of Boulder Open Space, CO - 1999.

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		----Sample Number----									
		1	2	3	4	5	6	7	8	9	10
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>											
<i>Cynoglossum officinale</i>	20.00								P	P	
<i>Dianthus armeria</i>	10.00	P									
<i>Lactuca serriola</i>	10.00										P
<i>Plantago lanceolata</i>	60.00	P				P	P	P	P	P	
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	<b>60.0</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>---</b>
<b>NATIVE PERENNIAL FORBS</b>											
<i>Asclepias speciosa</i>	70.00	P	P		P	P	P	P	P		
<i>Aster lanceolatus</i> ssp. <i>hesperius</i>	60.00	P	P	P	P	P	P				
<i>Mentha arvensis</i>	40.00			P	P	P					P
<i>Oligoneuron rigidum</i>	40.00	P				P		P	P		
<i>Verbena hastata</i>	30.00				P	P					P
<i>Verbena stricta</i>	10.00					P					
<i>Virgulus falcatus</i>	50.00	P	P	P				P	P		
<b>TOTAL NATIVE PERENNIAL FORBS</b>	<b>90.0</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>---</b>	<b>P</b>
<b>INTRODUCED PERENNIAL FORBS</b>											
<i>Breëa arvensis</i>	40.00					P	P	P			P
<i>Daucus carota</i>	70.00	P	P			P	P	P	P	P	
<i>Sonchus uliginosus</i>	70.00	P	P	P	P	P			P		P
<i>Taraxacum officinale</i>	10.00								P		
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>100.0</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>
<b>NATIVE PERENNIAL GRASSES (cool)</b>											
<i>Agrostis scabra</i>	50.00	P	P	P	P						P
<i>Carex lanuginosa</i>	60.00	P	P	P	P	P	P				
<i>Carex nebrascensis</i>	40.00			P		P					P
<i>Eleocharis palustris</i>	30.00			P							P
<i>Juncus arcticus</i> ssp. <i>ater</i>	50.00			P				P	P	P	P
<i>Juncus longistylis</i>	50.00	P				P		P	P	P	
<i>Juncus saximontanus</i>	60.00	P	P	P	P	P					P
<i>Juncus torreyi</i>	30.00		P	P	P						
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>100.0</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>											
<i>Agrostis stolonifera</i>	90.00	P	P	P	P	P	P	P	P	P	
<i>Dactylis glomerata</i>	10.00										P
<i>Elyturgia repens</i>	60.00		P	P	P	P		P	P		
<b>TOTAL INTRO. PERENNIAL GRASSES (c)</b>	<b>90.0</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>---</b>
<b>NATIVE PERENNIAL GRASSES (warm)</b>											
<i>Panicum virgatum</i>	60.00	P	P	P		P	P		P		
<i>Sorghastrum avenaceum</i>	70.00	P	P		P	P		P	P	P	
<i>Sporobolus asper</i>	10.00				P						
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>90.0</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>---</b>
<b>NATIVE SHRUBS</b>											
<i>Rosa sayi</i>	30.00		P	P	P						
<b>TOTAL NATIVE SHRUBS</b>	<b>30.0</b>	<b>---</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>
<b>FERNS</b>											
<i>Hippochaete laevigata</i>	10.00								P		
<b>TOTAL FERNS</b>	<b>10.0</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>---</b>	<b>---</b>
<b>SPECIES DENSITY (# of species/100 sq.m.)</b> <b>(AVERAGE= 13.0 Std.Dev.= 3.4)</b>		<b>15</b>	<b>14</b>	<b>15</b>	<b>14</b>	<b>18</b>	<b>8</b>	<b>11</b>	<b>15</b>	<b>13</b>	<b>7</b>

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



Table 8. Area 3, Transect 5, City of Boulder Open Space, CO - 1999.

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		-----Sample Number-----									
		1	2	3	4	5	6	7	8	9	10
NATIVE SHRUBS											
Rosa sayi	10.00			P							
TOTAL NATIVE SHRUBS	10.0	---	---	P	---	---	---	---	---	---	---
FERNS											
Hippochaete laevigata	40.00	P	P			P	P				
TOTAL FERNS	40.0	P	P	---	---	P	P	---	---	---	---
SUCCULENT											
Opuntia macrorhiza	10.00	P									
TOTAL SUCCULENT	10.0	P	---	---	---	---	---	---	---	---	---
SPECIES DENSITY (# of species/100 sq.m.) (AVERAGE= 15.0 Std.Dev.= 2.7)		17	16	18	15	19	16	11	13	13	12

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

Table 9. Area 3, Transect 6, City of Boulder Open Space, CO - 1999.

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		-----Sample Number-----									
		1	2	3	4	5	6	7	8	9	10
<b>NATIVE ANNUAL &amp; BIENNIAL FORBS</b>											
<i>Dracocephalum parviflorum</i>	20.00							P	P		
<b>TOTAL NATIVE ANN. &amp; BIEN. FORBS</b>	20.0	---	---	---	---	---	---	P	P	---	---
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>											
<i>Dianthus armeria</i>	40.00	P			P			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
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	100.0	P	P	P	P	P	P	P	P	P	P
<b>NATIVE PERENNIAL FORBS</b>											
<i>Ambrosia psilostachya</i> var. <i>coronopifolia</i>	70.00	P				P	P	P	P	P	P
<i>Asclepias speciosa</i>	90.00	P	P	P	P	P	P	P	P	P	
<i>Aster porteri</i>	30.00	P	P		P						
<i>Heterotheca fulcrata</i>	10.00	P									
<i>Oligoneuron rigidum</i>	60.00	P	P	P	P				P	P	
<i>Psoraleum tenuiflorum</i>	30.00	P	P								P
<i>Solidago multiradiata</i>	10.00				P						
<i>Thermopsis divaricarpa</i>	20.00	P	P								
<i>Virgulus falcatus</i>	100.00	P	P	P	P	P	P	P	P	P	P
<b>TOTAL NATIVE PERENNIAL FORBS</b>	100.0	P	P	P	P	P	P	P	P	P	P
<b>INTRODUCED PERENNIAL FORBS</b>											
<i>Breea arvensis</i>	40.00						P	P	P	P	
<i>Cichorium intybus</i>	90.00		P	P	P	P	P	P	P	P	P
<i>Convolvulus arvensis</i>	40.00	P						P		P	P
<i>Daucus carota</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Sonchus uliginosus</i>	10.00						P				
<i>Taraxacum officinale</i>	60.00			P		P	P		P	P	P
<i>Trifolium pratense</i>	50.00	P		P	P	P					P
<b>TOTAL INTRO. PERENNIAL FORBS</b>	100.0	P	P	P	P	P	P	P	P	P	P
<b>NATIVE PERENNIAL GRASSES (cool)</b>											
<i>Agrostis scabra</i>	30.00						P	P	P		
<i>Eleocharis palustris</i>	10.00					P					
<i>Juncus arcticus</i> ssp. <i>ater</i>	40.00						P	P		P	P
<i>Juncus interior</i>	50.00						P	P	P	P	P
<i>Juncus saximontanus</i>	20.00							P		P	
<i>Juncus torreyi</i>	20.00			P			P				
<i>Poa agassizensis</i>	40.00	P	P	P							P
<i>Poa compressa</i>	50.00	P	P	P	P	P					
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	100.0	P	P	P	P	P	P	P	P	P	P
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>											
<i>Bromopsis inermis</i>	20.00									P	P
<i>Elyturgia repens</i>	40.00				P	P	P	P			
<i>Phleum pratense</i>	30.00	P	P			P					
<b>TOTAL INTRO. PERENNIAL GRASSES (c)</b>	80.0	P	P	---	P	P	P	P	---	P	P

Table 9. Area 3, Transect 6, City of Boulder Open Space, CO - 1999.

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		-----Sample Number-----									
		1	2	3	4	5	6	7	8	9	10
<b>NATIVE PERENNIAL GRASSES (warm)</b>											
Andropogon gerardii	20.00							P	P		
Chondrosium gracile	10.00	P									
Muhlenbergia asperifolia	60.00		P	P	P	P	P				P
Panicum virgatum	100.00	P	P	P	P	P	P	P	P	P	P
Sorghastrum avenaceum	100.00	P	P	P	P	P	P	P	P	P	P
Sporobolus asper	70.00	P	P	P	P	P	P		P		
Sporobolus heterolepis	50.00						P	P	P	P	P
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>100.0</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>
<b>NATIVE SHRUBS</b>											
Rosa sayi	20.00										P
<b>TOTAL NATIVE SHRUBS</b>	<b>20.0</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>P</b>
<b>FERNS</b>											
Hippochaete laevigata	80.00	P	P	P			P	P	P	P	P
<b>TOTAL FERNS</b>	<b>80.0</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>
<b>SPECIES DENSITY (# of species/100 sq.m.)</b>											
<b>(AVERAGE= 18.4 Std.Dev.= 2.0)</b>											
		21	17	16	16	16	20	20	19	20	19

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

Table 10. Area 6, Transect 1, City of Boulder Open Space, CO - 1999.

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		-----Sample Number-----									
		1	2	3	4	5	6	7	8	9	10
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>											
<i>Cirsium vulgare</i>	20.00				P		P				
<i>Conyza canadensis</i>	10.00										P
<i>Melilotus officinalis</i>	10.00									P	
<i>Plantago lanceolata</i>	20.00									P	P
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	<b>40.0</b>	---	---	---	P	---	P	---	---	P	P
<b>NATIVE PERENNIAL FORBS</b>											
<i>Ambrosia psilostachya</i> var. <i>coronopifolia</i>	10.00										P
<i>Asclepias speciosa</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Aster lanceolatus</i> ssp. <i>hesperius</i>	10.00					P					
<i>Glycyrrhiza lepidota</i>	20.00	P	P								
<i>Rumex crispus</i>	10.00								P		
<i>Virgulus falcatus</i>	10.00										P
<b>TOTAL NATIVE PERENNIAL FORBS</b>	<b>100.0</b>	P	P	P	P	P	P	P	P	P	P
<b>INTRODUCED PERENNIAL FORBS</b>											
<i>Breua arvensis</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Convolvulus arvensis</i>	20.00									P	P
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>100.0</b>	P	P	P	P	P	P	P	P	P	P
<b>NATIVE PERENNIAL GRASSES (cool)</b>											
<i>Agrostis scabra</i>	90.00	P	P	P	P	P	P	P	P	P	
<i>Carex simulata</i>	10.00			P							
<i>Eleocharis palustris</i>	10.00						P				
<i>Juncus arcticus</i> ssp. <i>ater</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Poa agassizensis</i>	100.00	P	P	P	P	P	P	P	P	P	P
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>100.0</b>	P	P	P	P	P	P	P	P	P	P
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>											
<i>Agrostis stolonifera</i>	20.00							P		P	
<b>TOTAL INTRO. PERENNIAL GRASSES (c)</b>	<b>20.0</b>	---	---	---	---	---	---	P	---	P	---
<b>NATIVE PERENNIAL GRASSES (warm)</b>											
<i>Andropogon gerardii</i>	60.00	P	P	P	P	P					P
<i>Panicum virgatum</i>	70.00	P		P	P		P		P	P	P
<i>Schizachyrium scoparium</i>	20.00			P	P						
<i>Sporobolus asper</i>	80.00	P	P	P	P	P		P	P	P	
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>100.0</b>	P	P	P	P	P	P	P	P	P	P
<b>NATIVE SHRUBS</b>											
<i>Rosa sayi</i>	90.00	P	P		P	P	P	P	P	P	P
<i>Symphoricarpos occidentalis</i>	20.00									P	P
<b>TOTAL NATIVE SHRUBS</b>	<b>90.0</b>	P	P	---	P	P	P	P	P	P	P
<b>SPECIES DENSITY (# of species/100 sq.m.)</b>											
(AVERAGE= 10.1 Std.Dev.= 1.7)		10	9	10	11	9	9	8	9	13	13

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

Table 11. Area 6, Transect 2, City of Boulder Open Space, CO - 1999.

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		-----Sample Number-----									
		1	2	3	4	5	6	7	8	9	10
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>											
<i>Plantago lanceolata</i>	10.00								P		
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	10.0	---	---	---	---	---	---	---	P	---	---
<b>NATIVE PERENNIAL FORBS</b>											
<i>Asclepias speciosa</i>	60.00	P				P	P	P	P		P
<b>TOTAL NATIVE PERENNIAL FORBS</b>	60.0	P	---	---	---	P	P	P	P	---	P
<b>INTRODUCED PERENNIAL FORBS</b>											
<i>Breca arvensis</i>	10.00										P
<b>TOTAL INTRO. PERENNIAL FORBS</b>	10.0	---	---	---	---	---	---	---	---	---	P
<b>NATIVE PERENNIAL GRASSES (cool)</b>											
<i>Agrostis scabra</i>	10.00						P				
<i>Carex praegracilis</i>	40.00		P		P			P		P	
<i>Carex simulata</i>	20.00		P	P							
<i>Carex vulpinoidea</i>	50.00			P				P	P	P	P
<i>Eleocharis palustris</i>	10.00		P								
<i>Juncus arcticus ssp. ater</i>	60.00	P		P	P	P	P	P			
<i>Juncus interior</i>	10.00			P							
<i>Poa agassizensis</i>	80.00	P	P	P	P	P		P	P		P
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	100.0	P	P	P	P	P	P	P	P	P	P
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>											
<i>Agrostis gigantea</i>	40.00			P		P	P				P
<i>Phleum pratense</i>	10.00										P
<b>TOTAL INTRO. PERENNIAL GRASSES (c)</b>	40.0	---	---	P	---	P	P	---	---	P	---
<b>NATIVE PERENNIAL GRASSES (warm)</b>											
<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
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	100.0	P	P	P	P	P	P	P	P	P	P
<b>NATIVE SHRUBS</b>											
<i>Rosa sayi</i>	60.00	P	P	P				P	P	P	
<b>TOTAL NATIVE SHRUBS</b>	60.0	P	P	P	---	---	---	P	P	P	---
<b>SPECIES DENSITY (# of species/100 sq.m.)</b> (AVERAGE= 6.7 Std.Dev.= 1.2)		6	7	9	5	6	6	8	7	7	6

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

Table 12. Area 7, Transect 1, City of Boulder Open Space, CO - 1999.

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		-----Sample Number-----									
		1	2	3	4	5	6	7	8	9	10
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>											
<i>Dianthus armeria</i>	40.00							P	P	P	P
<i>Lepidium densiflorum</i>	10.00		P								
<i>Tragopogon dubius</i> ssp. <i>major</i>	10.00		P								
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	<b>50.0</b>	---	P	---	---	---	---	P	P	P	P
<b>NATIVE PERENNIAL FORBS</b>											
<i>Ambrosia psilostachya</i> var. <i>coronopifolia</i>	50.00	P		P	P			P		P	
<i>Artemisia ludoviciana</i>	40.00	P		P	P		P				
<i>Aster porteri</i>	90.00		P	P	P	P	P	P	P	P	P
<i>Oenothera villosa</i>	10.00							P			
<i>Psoraleidium tenuiflorum</i>	40.00				P	P	P				
<i>Talinum parviflorum</i>	10.00		P								
<i>Virgulus falcatus</i>	70.00			P		P	P	P	P	P	P
<b>TOTAL NATIVE PERENNIAL FORBS</b>	<b>100.0</b>	P	P	P	P	P	P	P	P	P	P
<b>INTRODUCED PERENNIAL FORBS</b>											
<i>Cichorium intybus</i>	90.00	P	P	P	P	P	P	P	P	P	
<i>Convolvulus arvensis</i>	40.00							P	P	P	P
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>100.0</b>	P	P	P	P	P	P	P	P	P	P
<b>NATIVE PERENNIAL GRASSES (cool)</b>											
<i>Elymus longifolius</i>	10.00		P								
<i>Juncus interior</i>	60.00		P				P	P	P	P	P
<i>Poa compressa</i>	100.00	P	P	P	P	P	P	P	P	P	P
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>100.0</b>	P	P	P	P	P	P	P	P	P	P
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>											
<i>Agrostis stolonifera</i>	10.00										P
<b>TOTAL INTRO. PERENNIAL GRASSES (c)</b>	<b>10.0</b>	---	---	---	---	---	---	---	---	---	P
<b>NATIVE PERENNIAL GRASSES (warm)</b>											
<i>Andropogon gerardii</i>	70.00	P	P			P		P	P	P	P
<i>Buchloe dactyloides</i>	20.00		P					P			
<i>Chondrosum gracile</i>	60.00	P	P	P	P	P	P				
<i>Muhlenbergia cuspidata</i>	30.00	P		P		P					
<i>Panicum virgatum</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Schizachyrium scoparium</i>	30.00				P	P				P	
<i>Sorghastrum avenaceum</i>	90.00		P	P	P	P	P	P	P	P	P
<i>Sporobolus asper</i>	60.00				P		P	P	P	P	P
<i>Sporobolus heterolepis</i>	70.00			P	P	P	P	P	P		P
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>100.0</b>	P	P	P	P	P	P	P	P	P	P
<b>SUCCULENT</b>											
<i>Opuntia macrorhiza</i>	60.00	P	P	P	P	P	P				
<b>TOTAL SUCCULENT</b>	<b>60.0</b>	P	P	P	P	P	P	---	---	---	---
<b>SPECIES DENSITY (# of species/100 sq.m.)</b> <b>(AVERAGE= 12.7 Std.Dev.= 1.7)</b>		9	15	12	13	13	13	15	12	13	12

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



Table 13. Area 7, Transect 2, City of Boulder Open Space, CO - 1999.

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		-----Sample Number-----									
		1	2	3	4	5	6	7	8	9	10
<b>NATIVE ANNUAL &amp; BIENNIAL FORBS</b>											
<i>Chenopodium rubrum</i>	50.00				P	P	P			P	P
<i>Cirsium undulatum</i>	10.00			P							
<i>Oligosporus pacificus</i>	30.00		P		P	P					
<i>Oreocarya virgata</i>	10.00									P	
<i>Silene antirrhina</i>	30.00					P	P			P	
<b>TOTAL NATIVE ANN. &amp; BIEN. FORBS</b>	<b>70.0</b>	---	P	P	P	P	P	---	---	P	P
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>											
<i>Alyssum parviflorum</i>	30.00	P	P	P							
<i>Dianthus armeria</i>	10.00										P
<i>Erodium cicutarium</i>	20.00		P	P							
<i>Lactuca serriola</i>	10.00		P								
<i>Lepidium densiflorum</i>	20.00						P	P			
<i>Plantago lanceolata</i>	10.00										P
<i>Tragopogon dubius ssp. major</i>	40.00		P					P	P		P
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	<b>70.0</b>	P	P	P	---	---	P	P	P	---	P
<b>INTRODUCED ANNUAL GRASSES</b>											
<i>Bromus japonicus</i>	80.00	P	P	P	P	P	P	P	P		
<b>TOTAL INTRO. ANN. GRASSES</b>	<b>80.0</b>	P	P	P	P	P	P	P	P	---	---
<b>NATIVE PERENNIAL FORBS</b>											
<i>Acetosella vulgaris</i>	70.00		P	P			P	P	P	P	P
<i>Achillea lanulosa</i>	10.00										P
<i>Ambrosia psilostachya var. 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>	20.00	P		P							
<i>Brickellia rosmarinifolia ssp. chlorolepis</i>	10.00					P					
<i>Dalea purpurea</i>	20.00				P		P				
<i>Erigeron flagellaris</i>	10.00						P				
<i>Evolvulus nuttallianus</i>	30.00		P			P	P				
<i>Heterotheca fulcrata</i>	10.00		P								
<i>Lesquerella montana</i>	10.00					P					
<i>Liatris punctata</i>	50.00	P	P	P	P	P					
<i>Lithospermum ruderale</i>	10.00	P									
<i>Oxalis dillenii</i>	20.00	P									P
<i>Oxybaphus linearis</i>	20.00						P	P			
<i>Penstemon strictus</i>	10.00					P					
<i>Phacelia heterophylla</i>	30.00				P	P	P				
<i>Psoraleidum tenuiflorum</i>	80.00	P		P	P	P	P	P	P	P	
<i>Thermopsis rhombifolia</i>	10.00								P		
<i>Virgulus falcatus</i>	20.00								P		P
<b>TOTAL NATIVE PERENNIAL FORBS</b>	<b>100.0</b>	P	P	P	P	P	P	P	P	P	P
<b>INTRODUCED PERENNIAL FORBS</b>											
<i>Breëa arvensis</i>	20.00									P	P
<i>Cichorium intybus</i>	10.00	P									
<i>Convolvulus arvensis</i>	30.00					P				P	P
<i>Hypericum perforatum</i>	30.00		P			P	P				
<i>Taraxacum officinale</i>	20.00					P		P			
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>70.0</b>	P	P	---	---	P	P	P	---	P	P

Table 13. Area 7, Transect 2, City of Boulder Open Space, CO - 1999.

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		-----Sample Number-----									
		1	2	3	4	5	6	7	8	9	10
<b>NATIVE PERENNIAL GRASSES (cool)</b>											
<i>Carex pensylvanica</i> ssp. <i>heliophila</i>	30.00			P	P		P				
<i>Dicanthellum oligosanthes</i> var. <i>scribnerianum</i>	40.00	P						P	P		P
<i>Hesperostipa comata</i>	60.00		P	P	P	P	P	P			
<i>Juncus interior</i>	20.00	P						P			
<i>Koeleria macrantha</i>	50.00			P	P	P	P		P		
<i>Pascopyrum smithii</i>	10.00	P									
<i>Poa agassizensis</i>	70.00				P	P	P	P	P	P	P
<i>Poa compressa</i>	20.00	P			P						
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>100.0</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>
<b>NATIVE PERENNIAL GRASSES (warm)</b>											
<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>Panicum virgatum</i>	50.00	P					P		P	P	P
<i>Sorghastrum avenaceum</i>	10.00	P									
<i>Sporobolus cryptandrus</i>	40.00	P	P	P			P				
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>100.0</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>
<b>NATIVE SUBSHRUBS</b>											
<i>Artemisia frigida</i>	40.00			P	P	P	P				
<b>TOTAL NATIVE SUBSHRUBS</b>	<b>40.0</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>
<b>NATIVE SHRUBS</b>											
<i>Rosa sayi</i>	10.00									P	
<i>Symphoricarpos occidentalis</i>	10.00									P	
<b>TOTAL NATIVE SHRUBS</b>	<b>10.0</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>---</b>
<b>LICHEN</b>											
<i>Xanthoparmelia chlorochroa</i>	40.00			P	P	P	P				
<b>TOTAL LICHEN</b>	<b>40.0</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>
<b>SUCCULENT</b>											
<i>Echinocereus viridiflorus</i>	30.00				P	P	P				
<i>Opuntia fragilis</i>	50.00			P	P	P	P	P			
<i>Opuntia macrorhiza</i>	30.00			P			P	P			
<b>TOTAL SUCCULENT</b>	<b>50.0</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>---</b>
<b>MUSHROOMS</b>											
Fungus	10.00		P								
<b>TOTAL MUSHROOMS</b>	<b>10.0</b>	<b>---</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>
<b>TOTALS</b>											
TOTAL VEGETATION COVER		0	0	0	0	0	0	0	0	0	0
GROUND COVER (Litter+Rock+Veg+St.Dead)		0	0	0	0	0	0	0	0	0	0
SPECIES DENSITY (# of species/100 sq.m.) (AVERAGE= 18.0 Std.Dev.= 5.1)		19	17	20	20	25	26	15	13	10	15

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



Table 14. Area 7, Transect 3, City of Boulder Open Space, CO - 1999.

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		-----Sample Number-----									
		1	2	3	4	5	6	7	8	9	10
<b>NATIVE PERENNIAL GRASSES (warm)</b>											
<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>	60.00				P	P	P	P		P	P
<i>Calamovilfa longifolia</i>	20.00	P						P			
<i>Chondrosium gracile</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Panicum virgatum</i>	30.00								P	P	P
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>100.0</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>
<b>NATIVE SUBSHRUBS</b>											
<i>Artemisia frigida</i>	90.00	P	P	P	P	P	P	P	P	P	
<b>TOTAL NATIVE SUBSHRUBS</b>	<b>90.0</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>---</b>
<b>NATIVE SHRUBS</b>											
<i>Eriogonum effusum</i>	10.00								P		
<i>Yucca glauca</i>	20.00								P	P	
<b>TOTAL NATIVE SHRUBS</b>	<b>20.0</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>P</b>	<b>---</b>
<b>LICHEN</b>											
<i>Xanthoparmelia chlorochroa</i>	100.00	P	P	P	P	P	P	P	P	P	P
<b>TOTAL LICHEN</b>	<b>100.0</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>
<b>SUCCULENT</b>											
<i>Echinocereus viridiflorus</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Opuntia fragilis</i>	60.00	P				P	P	P	P	P	
<i>Opuntia macrorhiza</i>	50.00		P	P		P		P			P
<b>TOTAL SUCCULENT</b>	<b>100.0</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>
<b>MUSHROOMS</b>											
<i>Fungus</i>	40.00		P			P	P	P			
<b>TOTAL MUSHROOMS</b>	<b>40.0</b>	<b>---</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>---</b>
<b>SPECIES DENSITY (# of species/100 sq.m.)</b> <b>(AVERAGE= 20.7 Std.Dev.= 1.9)</b>		<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>21</b>	<b>23</b>	<b>22</b>	<b>24</b>	<b>17</b>

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



Table 15. Area 7, Transect 4, City of Boulder Open Space, CO - 1999.

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		-----Sample Number-----									
		1	2	3	4	5	6	7	8	9	10
<b>NATIVE PERENNIAL GRASSES (warm)</b>											
<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>	50.00		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>Panicum virgatum</i>	70.00	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 cryptandrus</i>	30.00				P	P				P	
<i>Sporobolus heterolepis</i>	10.00					P					
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>100.0</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>
<b>NATIVE SUBSHRUBS</b>											
<i>Artemisia frigida</i>	10.00									P	
<b>TOTAL NATIVE SUBSHRUBS</b>	<b>10.0</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>---</b>
<b>SUCCULENT</b>											
<i>Opuntia macrorhiza</i>	40.00	P	P	P							P
<b>TOTAL SUCCULENT</b>	<b>40.0</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>P</b>
<b>SPECIES DENSITY (# of species/100 sq.m.)</b> <b>(AVERAGE= 14.8 Std.Dev.= 2.5)</b>		<b>11</b>	<b>17</b>	<b>16</b>	<b>14</b>	<b>17</b>	<b>15</b>	<b>11</b>	<b>16</b>	<b>18</b>	<b>13</b>

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

Table 16. Area 7, Transect 5, City of Boulder Open Space, CO - 1999.

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		-----Sample Number-----									
		1	2	3	4	5	6	7	8	9	10
<b>NATIVE ANNUAL &amp; BIENNIAL FORBS</b>											
<i>Silene antirrhina</i>	10.00				P						
<b>TOTAL NATIVE ANN. &amp; BIEN. FORBS</b>	10.0	---	---	---	P	---	---	---	---	---	---
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>											
<i>Dianthus armeria</i>	20.00				P			P			
<i>Lactuca serriola</i>	40.00				P	P				P	P
<i>Neolepia campestris</i>	20.00				P		P				
<i>Tragopogon dubius</i> ssp. <i>major</i>	10.00			P							
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	70.0	---	---	P	P	P	P	P	---	P	P
<b>INTRODUCED ANNUAL GRASSES</b>											
<i>Bromus japonicus</i>	20.00				P	P					
<b>TOTAL INTRO. ANN. GRASSES</b>	20.0	---	---	---	P	P	---	---	---	---	---
<b>NATIVE PERENNIAL FORBS</b>											
<i>Acetosella vulgaris</i>	10.00					P					
<i>Achillea lanulosa</i>	20.00				P	P					
<i>Ambrosia psilostachya</i> var. <i>coronopifolia</i>	40.00	P	P			P				P	
<i>Artemisia ludoviciana</i>	30.00		P	P				P			
<i>Aster porteri</i>	20.00							P	P		
<i>Geranium viscosissimum</i> ssp. <i>nervosum</i>	20.00			P	P						
<i>Heterotheca fulcrata</i>	20.00		P			P					
<i>Iris missouriensis</i>	10.00							P			
<i>Oxalis dillenii</i>	10.00					P					
<i>Psoraleidum tenuiflorum</i>	30.00	P	P	P							
<i>Thermopsis divaricarpa</i>	40.00				P	P	P	P			
<i>Virgulus falcatus</i>	10.00									P	
<b>TOTAL NATIVE PERENNIAL FORBS</b>	90.0	P	P	P	P	P	P	P	P	P	---
<b>INTRODUCED PERENNIAL FORBS</b>											
<i>Cichorium intybus</i>	30.00							P		P	P
<i>Convolvulus arvensis</i>	50.00	P		P	P		P		P		
<b>TOTAL INTRO. PERENNIAL FORBS</b>	80.0	P	---	P	P	---	P	P	P	P	P
<b>NATIVE PERENNIAL GRASSES (cool)</b>											
<i>Carex lanuginosa</i>	40.00							P	P	P	P
<i>Carex nebrascensis</i>	10.00								P		
<i>Hesperostipa comata</i>	10.00		P								
<i>Juncus arcticus</i> ssp. <i>ater</i>	40.00	P	P		P						P
<i>Juncus interior</i>	20.00							P	P		
<i>Koeleria macrantha</i>	20.00			P	P						
<i>Pascopyrum smithii</i>	10.00									P	
<i>Poa agassizensis</i>	60.00	P	P	P	P			P	P		
<i>Poa compressa</i>	30.00					P	P			P	
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	100.0	P	P	P	P	P	P	P	P	P	P
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>											
<i>Bromopsis inermis</i>	20.00									P	P
<i>Elytrigia repens</i>	10.00							P			
<b>TOTAL INTRO. PERENNIAL GRASSES (c)</b>	30.0	---	---	---	---	---	P	---	---	P	P

Table 16. Area 7, Transect 5, City of Boulder Open Space, CO - 1999.

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		-----Sample Number-----									
		1	2	3	4	5	6	7	8	9	10
<b>NATIVE PERENNIAL GRASSES (warm)</b>											
<i>Andropogon gerardii</i>	40.00	P	P	P	P						
<i>Bouteloua curtipendula</i>	10.00			P							
<i>Chondrosium gracile</i>	30.00		P	P	P						
<i>Panicum virgatum</i>	80.00	P	P	P	P	P	P	P	P		
<i>Spartina pectinata</i>	20.00									P	P
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>100.0</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>
<b>NATIVE SUBSHRUBS</b>											
<i>Artemisia frigida</i>	10.00				P						
<b>TOTAL NATIVE SUBSHRUBS</b>	<b>10.0</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>
<b>NATIVE SHRUBS</b>											
<i>Rosa sayi</i>	50.00		P				P	P	P		P
<i>Symphoricarpos occidentalis</i>	10.00			P							
<b>TOTAL NATIVE SHRUBS</b>	<b>60.0</b>	<b>---</b>	<b>P</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>---</b>	<b>P</b>
<b>SUCCULENT</b>											
<i>Opuntia macrorhiza</i>	20.00		P		P						
<b>TOTAL SUCCULENT</b>	<b>20.0</b>	<b>---</b>	<b>P</b>	<b>---</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>
<b>TOTALS</b>											
TOTAL VEGETATION COVER		0	0	0	0	0	0	0	0	0	0
GROUND COVER (Litter+Rock+Veg+St. Dead)		0	0	0	0	0	0	0	0	0	0
SPECIES DENSITY (# of species/100 sq.m.) (AVERAGE= 10.0 Std.Dev.= 3.3)		7	12	12	17	10	11	10	8	6	7

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



Table 17. Area 7, Transect 6, City of Boulder Open Space, CO - 1999.

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		-----Sample Number-----									
		1	2	3	4	5	6	7	8	9	10
<b>NATIVE ANNUAL &amp; BIENNIAL FORBS</b>											
<i>Chenopodium rubrum</i>	10.00								P		
<i>Erysimum asperum</i>	10.00								P		
<i>Oligosporus pacificus</i>	10.00							P			
<i>Pterogonum alatum</i>	20.00						P	P			
<b>TOTAL NATIVE ANN. &amp; BIEN. FORBS</b>	<b>30.0</b>	---	---	---	---	---	P	P	P	---	---
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>											
<i>Alyssum parviflorum</i>	10.00							P			
<i>Camelina microcarpa</i>	10.00								P		
<i>Conyza canadensis</i>	10.00						P				
<i>Lactuca serriola</i>	20.00					P					P
<i>Lepidium densiflorum</i>	20.00							P	P		
<i>Tragopogon dubius</i> ssp. major	30.00	P		P				P			
<i>Verbascum thapsus</i>	10.00										P
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	<b>80.0</b>	P	---	P	---	P	P	P	P	P	P
<b>INTRODUCED ANNUAL GRASSES</b>											
<i>Bromus japonicus</i>	70.00	P	P	P	P	P	P		P		
<b>TOTAL INTRO. ANN. GRASSES</b>	<b>70.0</b>	P	P	P	P	P	P	---	P	---	---
<b>NATIVE PERENNIAL FORBS</b>											
<i>Acetosella vulgaris</i>	80.00	P			P	P	P	P	P	P	P
<i>Achillea lanulosa</i>	10.00										P
<i>Ambrosia psilostachya</i> var. coronopifolia	80.00		P		P	P	P	P	P	P	P
<i>Aster porteri</i>	30.00	P		P							P
<i>Astragalus crassicaulus</i>	10.00		P								
<i>Brickellia rosmarinifolia</i> ssp. chlorolepis	30.00		P			P	P				
<i>Calylophus serrulatus</i>	20.00	P	P								
<i>Comandra umbellata</i> ssp. pallida	20.00			P	P						
<i>Dalea purpurea</i>	20.00	P	P								
<i>Erigeron flagellaris</i>	10.00			P							
<i>Heterotheca fulcrata</i>	50.00	P		P				P	P	P	
<i>Lupinus argenteus</i>	10.00	P									
<i>Oligoneuron rigidum</i>	30.00				P	P					P
<i>Oxalis dillenii</i>	50.00					P	P	P	P		P
<i>Oxybaphus linearis</i>	50.00	P	P					P	P	P	
<i>Phacelia heterophylla</i>	10.00						P				
<i>Psoraleum tenuiflorum</i>	50.00	P	P		P	P					P
<i>Ratibida columnifera</i>	10.00		P								
<i>Virgulus falcatulus</i>	20.00								P	P	
<b>TOTAL NATIVE PERENNIAL FORBS</b>	<b>100.0</b>	P	P	P	P	P	P	P	P	P	P
<b>INTRODUCED PERENNIAL FORBS</b>											
<i>Breœa arvensis</i>	30.00					P	P				P
<i>Hypericum perforatum</i>	10.00		P								
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>40.0</b>	---	P	---	---	P	P	---	---	---	P

Table 17. Area 7, Transect 6, City of Boulder Open Space, CO - 1999.

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		-----Sample Number-----									
		1	2	3	4	5	6	7	8	9	10
<b>NATIVE PERENNIAL GRASSES (cool)</b>											
<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>	70.00	P	P	P		P	P	P		P	
<i>Eleocharis palustris</i>	20.00							P			P
<i>Hesperostipa comata</i>	70.00	P	P		P		P	P	P	P	
<i>Juncus interior</i>	20.00							P		P	
<i>Koeleria macrantha</i>	50.00		P	P	P				P	P	
<i>Poa agassizensis</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Poa compressa</i>	10.00								P		
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>100.0</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>
<b>NATIVE PERENNIAL GRASSES (warm)</b>											
<i>Andropogon gerardii</i>	40.00	P	P	P	P						
<i>Bouteloua curtipendula</i>	20.00	P	P								
<i>Calamovilfa longifolia</i>	10.00						P				
<i>Chondrosium gracile</i>	50.00	P	P	P				P		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>	40.00		P	P		P				P	
<i>Sporobolus cryptandrus</i>	40.00	P			P			P	P		
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>100.0</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>
<b>NATIVE SUBSHRUBS</b>											
<i>Artemisia frigida</i>	50.00	P					P	P	P	P	
<b>TOTAL NATIVE SUBSHRUBS</b>	<b>50.0</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>---</b>
<b>NATIVE SHRUBS</b>											
<i>Rosa sayi</i>	10.00		P								
<i>Yucca glauca</i>	10.00	P									
<b>TOTAL NATIVE SHRUBS</b>	<b>20.0</b>	<b>P</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>
<b>FERNS</b>											
<i>Hippochaete variegata</i>	20.00			P				P			
<b>TOTAL FERNS</b>	<b>20.0</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>---</b>
<b>LICHEN</b>											
<i>Xanthoparmelia chlorochroa</i>	50.00	P	P	P	P			P			
<b>TOTAL LICHEN</b>	<b>50.0</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>---</b>
<b>SUCCULENT</b>											
<i>Echinocereus viridiflorus</i>	40.00		P	P	P			P			
<i>Opuntia fragilis</i>	20.00							P	P		
<i>Opuntia macrorhiza</i>	70.00	P	P	P	P	P			P	P	
<b>TOTAL SUCCULENT</b>	<b>80.0</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>---</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>---</b>
<b>SPECIES DENSITY (# of species/100 sq.m.)</b>											
<b>(AVERAGE= 18.6 Std.Dev.= 4.4)</b>											
		23	24	19	16	15	17	24	20	18	10

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

Table 18. Area 7, Transect 7, City of Boulder Open Space, CO - 1999.

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		-----Sample Number-----									
		1	2	3	4	5	6	7	8	9	10
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>											
<i>Dianthus armeria</i>	30.00		P			P		P			
<i>Plantago lanceolata</i>	40.00						P	P	P		P
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	<b>60.0</b>	---	P	---	---	P	P	P	P	---	P
<b>NATIVE PERENNIAL FORBS</b>											
<i>Asclepias speciosa</i>	10.00	P									
<i>Aster porteri</i>	20.00									P	P
<i>Iris missouriensis</i>	50.00	P				P		P	P	P	
<i>Pneumonanthe bigelovii</i>	10.00										P
<i>Thermopsis rhombifolia</i>	30.00		P							P	P
<i>Virgulus falcatus</i>	80.00	P	P	P	P	P	P	P		P	
<b>TOTAL NATIVE PERENNIAL FORBS</b>	<b>100.0</b>	P	P	P	P	P	P	P	P	P	P
<b>INTRODUCED PERENNIAL FORBS</b>											
<i>Cichorium intybus</i>	60.00	P	P		P	P	P	P			
<i>Lotus tenuis</i>	10.00			P							
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>70.0</b>	P	P	P	P	P	P	P	---	---	---
<b>NATIVE PERENNIAL GRASSES (cool)</b>											
<i>Carex praegracilis</i>	40.00		P	P		P	P				
<i>Dicanthelium oligosanthes</i> var. <i>scribnerianum</i>	10.00							P			
<i>Eleocharis palustris</i>	10.00										P
<i>Juncus arcticus</i> ssp. <i>ater</i>	100.00	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
<i>Pascopyrum smithii</i>	10.00							P			
<i>Poa agassizensis</i>	50.00		P	P		P			P	P	
<i>Poa compressa</i>	50.00				P			P	P	P	P
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>100.0</b>	P	P	P	P	P	P	P	P	P	P
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>											
<i>Agrostis gigantea</i>	60.00	P		P	P	P		P	P		
<i>Phleum pratense</i>	50.00		P	P	P			P			P
<b>TOTAL INTRO. PERENNIAL GRASSES (c)</b>	<b>80.0</b>	P	P	P	P	P	---	P	P	---	P
<b>NATIVE PERENNIAL GRASSES (warm)</b>											
<i>Andropogon gerardii</i>	20.00	P	P								
<i>Muhlenbergia cuspidata</i>	20.00									P	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 cryptandrus</i>	20.00								P	P	
<i>Sporobolus heterolepis</i>	90.00		P	P	P	P	P	P	P	P	P
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>100.0</b>	P	P	P	P	P	P	P	P	P	P
<b>NATIVE SHRUBS</b>											
<i>Rosa sayi</i>	50.00	P		P					P	P	P
<b>TOTAL NATIVE SHRUBS</b>	<b>50.0</b>	P	---	P	---	---	---	---	P	P	P
<b>SPECIES DENSITY (# of species/100 sq.m.)</b>											
(AVERAGE= 12.4 Std.Dev.= 2.1)		11	13	12	10	12	9	15	12	15	15

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

Table 19. Area 7, Transect 8, City of Boulder Open Space, CO - 1999.

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		-----Sample Number-----									
		1	2	3	4	5	6	7	8	9	10
<b>NATIVE PERENNIAL FORBS</b>											
<i>Epilobium ciliatum</i>	10.00			P							
<i>Lycopus americanus</i>	30.00							P		P	P
<i>Verbena hastata</i>	60.00					P	P	P	P	P	P
<b>TOTAL NATIVE PERENNIAL FORBS</b>	<b>70.0</b>	---	---	P	---	P	P	P	P	P	P
<b>INTRODUCED PERENNIAL FORBS</b>											
<i>Breëa arvensis</i>	10.00									P	
<i>Potentilla recta</i>	10.00										P
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>20.0</b>	---	---	---	---	---	---	---	---	P	P
<b>NATIVE PERENNIAL GRASSES (cool)</b>											
<i>Carex lanuginosa</i>	10.00			P							
<i>Carex nebrascensis</i>	20.00			P	P						
<i>Eleocharis palustris</i>	40.00		P	P	P	P					
<i>Juncus arcticus</i> ssp. <i>ater</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Juncus interior</i>	10.00										P
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>100.0</b>	P	P	P	P	P	P	P	P	P	P
<b>NATIVE PERENNIAL GRASSES (warm)</b>											
<i>Panicum virgatum</i>	10.00		P								
<i>Spartina pectinata</i>	100.00	P	P	P	P	P	P	P	P	P	P
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>100.0</b>	P	P	P	P	P	P	P	P	P	P
<b>SPECIES DENSITY (# of species/100 sq.m.)</b>											
<b>(AVERAGE= 4.1 Std.Dev.= 1.3)</b>											
		2	4	6	4	4	3	4	3	5	6

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

Table 20. Area 7, Transect 9, City of Boulder Open Space, CO - 1999.

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		-----Sample Number-----									
		1	2	3	4	5	6	7	8	9	10
<b>NATIVE ANNUAL &amp; BIENNIAL FORBS</b>											
<i>Grindelia squarrosa</i>	10.00										P
<i>Oligosporus pacificus</i>	10.00							P			
<i>Pterogonum alatum</i>	10.00								P		
<b>TOTAL NATIVE ANN. &amp; BIEN. FORBS</b>	<b>30.0</b>	---	---	---	---	---	---	P	P	---	P
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>											
<i>Acosta diffusa</i>	20.00	P				P					
<i>Alyssum parviflorum</i>	40.00				P	P		P	P		
<i>Conyza canadensis</i>	10.00								P		
<i>Dianthus armeria</i>	60.00	P	P		P			P		P	P
<i>Erodium cicutarium</i>	10.00										P
<i>Lepidium densiflorum</i>	10.00										P
<i>Medicago lupulina</i>	20.00	P									P
<i>Melilotus officinalis</i>	20.00		P	P							
<i>Plantago lanceolata</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Tragopogon dubius ssp. major</i>	30.00				P		P		P		
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	<b>100.0</b>	P	P	P	P	P	P	P	P	P	P
<b>INTRODUCED ANNUAL GRASSES</b>											
<i>Bromus japonicus</i>	10.00										P
<b>TOTAL INTRO. ANN. GRASSES</b>	<b>10.0</b>	---	---	---	---	---	---	---	---	---	P
<b>NATIVE PERENNIAL FORBS</b>											
<i>Acetosella vulgaris</i>	50.00				P	P	P		P		P
<i>Achillea lanulosa</i>	40.00	P	P	P	P						
<i>Ambrosia psilostachya var. coronopifolia</i>	90.00	P	P	P	P	P	P		P	P	P
<i>Astragalus crassicaarpus</i>	10.00							P			
<i>Brickellia rosmarinifolia ssp. chlorolepis</i>	20.00		P		P						
<i>Calyophus serrulatus</i>	20.00			P		P					
<i>Dalea candida var. oligophylla</i>	20.00			P	P						
<i>Dalea purpurea</i>	60.00		P	P	P	P		P		P	
<i>Erigeron flagellaris</i>	80.00		P		P	P	P	P	P	P	P
<i>Evolvulus nuttallianus</i>	10.00							P			
<i>Heterotheca fulcrata</i>	30.00				P		P	P			
<i>Lesquerella montana</i>	10.00					P					
<i>Liatris punctata</i>	60.00			P	P		P	P	P	P	
<i>Lithospermum ruderale</i>	20.00				P				P		
<i>Lupinus argenteus</i>	50.00	P	P						P	P	P
<i>Noccaea montana</i>	30.00	P	P	P							
<i>Oligoneuron rigidum</i>	10.00	P									
<i>Oxalis dillenii</i>	20.00									P	P
<i>Oxybaphus linearis</i>	20.00					P	P				
<i>Psoraleidum tenuiflorum</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Ratibida columnifera</i>	20.00	P	P								
<i>Virgulus falcatus</i>	60.00	P	P		P	P			P		P
<b>TOTAL NATIVE PERENNIAL FORBS</b>	<b>100.0</b>	P	P	P	P	P	P	P	P	P	P
<b>INTRODUCED PERENNIAL FORBS</b>											
<i>Cichorium intybus</i>	50.00		P	P					P	P	P
<i>Convolvulus arvensis</i>	60.00	P	P		P			P		P	P
<i>Taraxacum officinale</i>	80.00	P	P	P	P			P	P	P	P
<i>Trifolium repens</i>	20.00	P		P							
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>80.0</b>	P	P	P	P	---	---	P	P	P	P

Table 20. Area 7, Transect 9, City of Boulder Open Space, CO - 1999.

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		-----Sample Number-----									
		1	2	3	4	5	6	7	8	9	10
<b>NATIVE PERENNIAL GRASSES (cool)</b>											
<i>Carex pensylvanica</i> ssp. <i>heliophila</i>	20.00					P		P			
<i>Dicanthelium oligosanthes</i> var. <i>scribnerianum</i>	10.00			P							
<i>Elymus longifolius</i>	10.00						P				
<i>Hesperostipa comata</i>	20.00				P	P					
<i>Juncus interior</i>	10.00	P									
<i>Poa agassizensis</i>	80.00	P	P		P		P	P	P	P	P
<i>Poa compressa</i>	20.00								P	P	
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>100.0</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>
<b>NATIVE PERENNIAL GRASSES (warm)</b>											
<i>Andropogon gerardii</i>	100.00	P	P	P	P	P	P	P	P	P	P
<i>Aristida purpurea</i>	30.00				P		P		P		
<i>Bouteloua curtipendula</i>	30.00						P	P	P		
<i>Calamovilfa longifolia</i>	10.00								P		
<i>Chondrosium gracile</i>	80.00			P	P	P	P	P	P	P	P
<i>Panicum virgatum</i>	30.00			P						P	P
<i>Schizachyrium scoparium</i>	70.00	P		P	P		P		P	P	P
<i>Sorghastrum avenaceum</i>	40.00	P	P	P		P					
<i>Sporobolus asper</i>	10.00								P		
<i>Sporobolus cryptandrus</i>	10.00										P
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>100.0</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>
<b>NATIVE SUBSHRUBS</b>											
<i>Artemisia frigida</i>	50.00				P		P	P	P	P	
<i>Gutierrezia sarothrae</i>	30.00				P	P		P			
<b>TOTAL NATIVE SUBSHRUBS</b>	<b>60.0</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>---</b>
<b>NATIVE SHRUBS</b>											
<i>Amorpha nana</i>	20.00							P	P		
<i>Rosa sayi</i>	30.00			P			P	P			
<b>TOTAL NATIVE SHRUBS</b>	<b>40.0</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>---</b>	<b>---</b>
<b>SUCCULENT</b>											
<i>Opuntia fragilis</i>	10.00							P			
<i>Opuntia macrorhiza</i>	30.00					P		P	P		
<b>TOTAL SUCCULENT</b>	<b>30.0</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>---</b>	<b>P</b>	<b>P</b>	<b>---</b>	<b>---</b>
<b>SPECIES DENSITY (# of species/100 sq.m.)</b> (AVERAGE= 21.5 Std.Dev.= 3.2)		<b>20</b>	<b>19</b>	<b>20</b>	<b>26</b>	<b>19</b>	<b>18</b>	<b>24</b>	<b>27</b>	<b>19</b>	<b>23</b>

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

Table 21. Area 7, Transect 10, City of Boulder Open Space, CO - 1999.

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		-----Sample Number-----									
		1	2	3	4	5	6	7	8	9	10
<b>NATIVE ANNUAL &amp; BIENNIAL FORBS</b>											
<i>Chenopodium atrovirens</i>	10.00						P				
<i>Cirsium undulatum</i>	10.00										P
<i>Oligosporus pacificus</i>	30.00					P	P			P	
<i>Oreocarya virgata</i>	30.00						P		P	P	
<i>Pterogonum alatum</i>	50.00					P	P	P		P	P
<b>TOTAL NATIVE ANN. &amp; BIEN. FORBS</b>	<b>60.0</b>	---	---	---	---	P	P	P	P	P	P
<b>INTRODUCED ANNUAL &amp; BIENNIAL FORBS</b>											
<i>Alyssum desertorum</i>	10.00										P
<i>Erodium cicutarium</i>	10.00	P									
<i>Lactuca serriola</i>	10.00		P								
<b>TOTAL INTRO. ANN. &amp; BIEN. FORBS</b>	<b>30.0</b>	P	P	---	---	---	---	---	---	P	---
<b>INTRODUCED ANNUAL GRASSES</b>											
<i>Bromus japonicus</i>	20.00				P	P					
<b>TOTAL INTRO. ANN. GRASSES</b>	<b>20.0</b>	---	---	---	P	P	---	---	---	---	---
<b>NATIVE PERENNIAL FORBS</b>											
<i>Acetosella vulgaris</i>	60.00				P	P		P	P	P	P
<i>Ambrosia psilostachya</i> var. <i>coronopifolia</i>	60.00		P	P	P	P	P		P		
<i>Artemisia ludoviciana</i>	30.00			P	P	P					
<i>Asclepias viridiflora</i>	20.00							P		P	
<i>Aster porteri</i>	50.00	P		P	P		P				P
<i>Calyophus serrulatus</i>	10.00					P					
<i>Cerastium strictum</i>	30.00					P	P				P
<i>Dalea purpurea</i>	60.00		P		P	P	P	P	P		
<i>Erigeron flagellaris</i>	60.00		P		P	P		P		P	P
<i>Evolvulus nuttallianus</i>	10.00								P		
<i>Heterotheca fulcrata</i>	30.00					P		P	P		
<i>Heterotheca villosa</i>	10.00				P						
<i>Lesquerella montana</i>	30.00					P	P				P
<i>Liatris punctata</i>	40.00			P		P				P	P
<i>Oxalis dillenii</i>	50.00		P	P	P	P					P
<i>Oxybaphus linearis</i>	40.00			P		P			P		P
<i>Oxytropis x sericea</i>	10.00					P					
<i>Paronychia jamesii</i>	60.00			P	P	P		P	P		P
<i>Phacelia heterophylla</i>	10.00						P				
<i>Psoraleidium tenuiflorum</i>	70.00	P	P	P		P			P	P	P
<i>Ratibida columnifera</i>	20.00		P						P		
<i>Senecio spartioides</i>	70.00	P	P	P	P	P	P		P		
<i>Talinum parviflorum</i>	80.00	P	P	P		P	P	P	P		P
<i>Tithymalus brachyceras</i>	10.00							P			
<i>Tragia ramosa</i>	80.00	P	P	P		P	P	P	P	P	
<i>Virgulus falcatus</i>	10.00				P						
<b>TOTAL NATIVE PERENNIAL FORBS</b>	<b>100.0</b>	P	P	P	P	P	P	P	P	P	P
<b>INTRODUCED PERENNIAL FORBS</b>											
<i>Cichorium intybus</i>	20.00			P	P						
<i>Hypericum perforatum</i>	30.00					P	P				P
<b>TOTAL INTRO. PERENNIAL FORBS</b>	<b>50.0</b>	---	---	P	P	P	P	---	---	---	P

Table 21. Area 7, Transect 10, City of Boulder Open Space, CO - 1999.

PLANT SPECIES	FREQUENCY (%)	PRESENCE*									
		-----Sample Number-----									
		1	2	3	4	5	6	7	8	9	10
<b>NATIVE PERENNIAL GRASSES (cool)</b>											
<i>Carex pensylvanica</i> ssp. <i>heliophila</i>	70.00	P			P	P	P	P		P	P
<i>Elymus longifolius</i>	10.00	P									
<i>Hesperostipa comata</i>	20.00					P	P				
<i>Koeleria macrantha</i>	20.00					P			P		
<i>Poa agassizensis</i>	50.00					P	P	P		P	P
<b>TOTAL NATIVE PERENNIAL GRASSES (c)</b>	<b>80.0</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>
<b>NATIVE PERENNIAL GRASSES (warm)</b>											
<i>Andropogon gerardii</i>	70.00	P	P	P	P			P		P	P
<i>Aristida purpurea</i>	40.00			P			P	P		P	
<i>Bouteloua curtipendula</i>	80.00	P	P	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>	10.00					P					
<i>Muhlenbergia cuspidata</i>	10.00			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>	10.00			P							
<i>Sporobolus cryptandrus</i>	50.00		P	P	P	P					P
<b>TOTAL NATIVE PERENNIAL GRASSES (w)</b>	<b>100.0</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>
<b>NATIVE SUBSHRUBS</b>											
<i>Artemisia frigida</i>	80.00	P	P	P	P	P	P	P		P	
<i>Gutierrezia sarothrae</i>	40.00	P	P	P		P					
<b>TOTAL NATIVE SUBSHRUBS</b>	<b>80.0</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>---</b>	<b>P</b>	<b>---</b>
<b>NATIVE SHRUBS</b>											
<i>Rosa sayi</i>	10.00						P				
<i>Yucca glauca</i>	10.00	P									
<b>TOTAL NATIVE SHRUBS</b>	<b>20.0</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>
<b>SUCCULENT</b>											
<i>Echinocereus viridiflorus</i>	70.00		P			P	P	P	P	P	P
<i>Opuntia fragilis</i>	10.00	P									
<i>Opuntia macrorhiza</i>	40.00		P		P					P	P
<b>TOTAL SUCCULENT</b>	<b>90.0</b>	<b>P</b>	<b>P</b>	<b>---</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>
<b>MUSHROOMS</b>											
<i>Fungus</i>	20.00									P	P
<b>TOTAL MUSHROOMS</b>	<b>20.0</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>P</b>	<b>P</b>
<b>SPECIES DENSITY (# of species/100 sq.m.)</b> <b>(AVERAGE= 22.1 Std.Dev.= 4.6)</b>		<b>16</b>	<b>20</b>	<b>23</b>	<b>21</b>	<b>33</b>	<b>24</b>	<b>19</b>	<b>19</b>	<b>22</b>	<b>24</b>

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





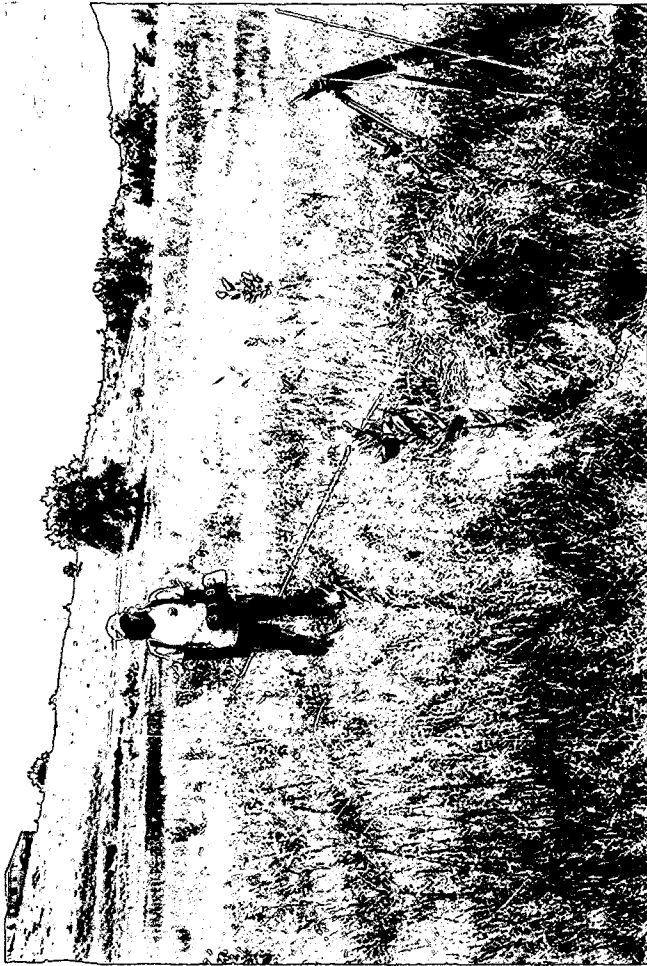




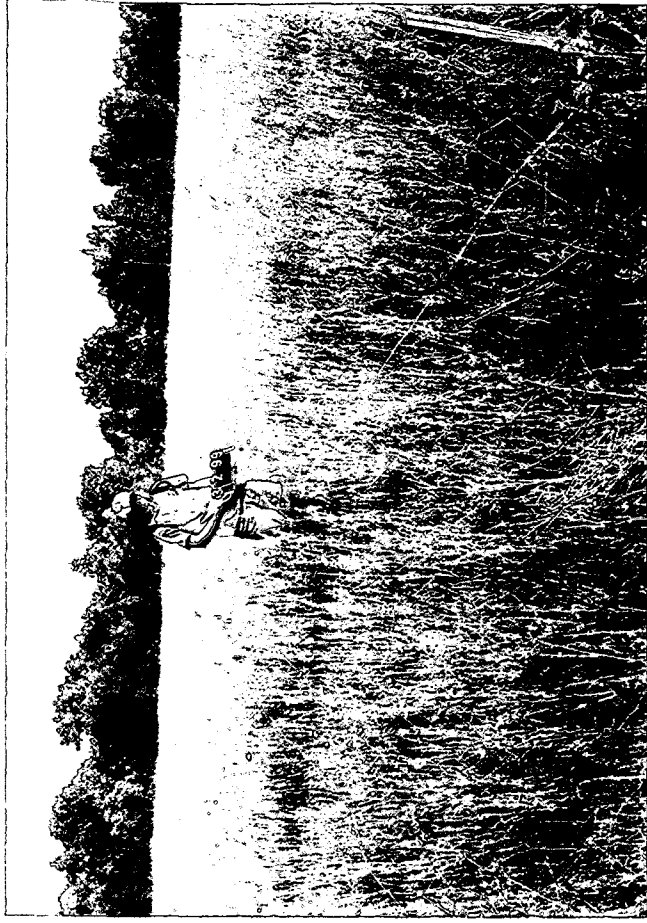
Table 22. Species Present - All Sites and Transects, City of Boulder Open Space, CO- 1999.

LATIN   SPECIES	COMMON	-----Sample Area and Transect-----																	
		3-1	3-2	3-3	3-4	3-5	3-6	6-1	6-2	7-1	7-2	7-3	7-4	7-5	7-6	7-7	7-8	7-9	7-10
<b>NATIVE PERENNIAL GRASSES (cool)</b>																			
<i>Agrostis scabra</i>	TICKLEGRASS																		
<i>Carex lanuginosa</i>	SEDGE	X			X	X	X						X		X				
<i>Carex nebrascensis</i>	NEBRASKA SEDGE	X			X								X		X				
<i>Carex pennsylvanica</i> ssp. <i>heliophila</i>	SUN SEDGE											X	X	X			X	X	X
<i>Carex praegracilis</i>	SEDGE			X		X									X				
<i>Carex simulata</i>	ANALOGNE SEDGE					X													
<i>Carex</i> spp.	SEDGE										X								
<i>Carex vulpinoidea</i>	FOX SEDGE										X								
<i>Critesion jubatum</i>	FOXTAIL BARLEY	X	X		X														
<i>Dicanthelium oligosanthes</i> var. <i>scribnerianum</i>	DICHANTHELIUM		X								X				X	X	X		
<i>Eleocharis palustris</i>	SPIKERUSH	X	X		X	X	X	X							X	X	X		
<i>Elymus longifolius</i>	BOTTLEBRUSH SQUIRRELTAIL										X							X	X
<i>Hesperostipa comata</i>	NEEDLE-AND-THREAD													X	X		X	X	X
<i>Juncus arcticus</i> ssp. <i>ater</i>	BALTIC RUSH	X	X		X	X	X	X						X	X	X	X		
<i>Juncus interior</i>	RUSH	X				X								X	X	X	X		
<i>Juncus longistylis</i>	RUSH	X			X														
<i>Juncus saximontanus</i>	RUSH	X			X	X													
<i>Juncus torreyi</i>	RUSH				X														
<i>Koeleria macrantha</i>	JUNEGRASS												X	X	X		X	X	X
<i>Pascopyrum smithii</i>	WESTERN WHEATGRASS												X	X	X	X			
<i>Poa agassizensis</i>	AGASSIZ BLUEGRASS	X	X		X	X	X	X					X	X	X	X	X	X	X
<i>Poa compressa</i>	CANADA BLUEGRASS		X		X								X	X	X	X	X	X	X
<i>Typha latifolia</i>	BROADLEAF CATTAIL	X			X														
<b>INTRODUCED PERENNIAL GRASSES (cool)</b>																			
<i>Agrostis gigantea</i>	REDTOP																X		
<i>Agrostis stolonifera</i>	REDTOP	X	X		X						X							X	
<i>Bromopsis inermis</i>	SMOOTH BROME			X		X								X					
<i>Dactylis glomerata</i>	ORCHARD GRASS		X	X	X									X					
<i>Elytigia repens</i>	QUACKGRASS	X			X	X								X					
<i>Phleum pratense</i>	TIMOTHY	X	X	X	X											X			

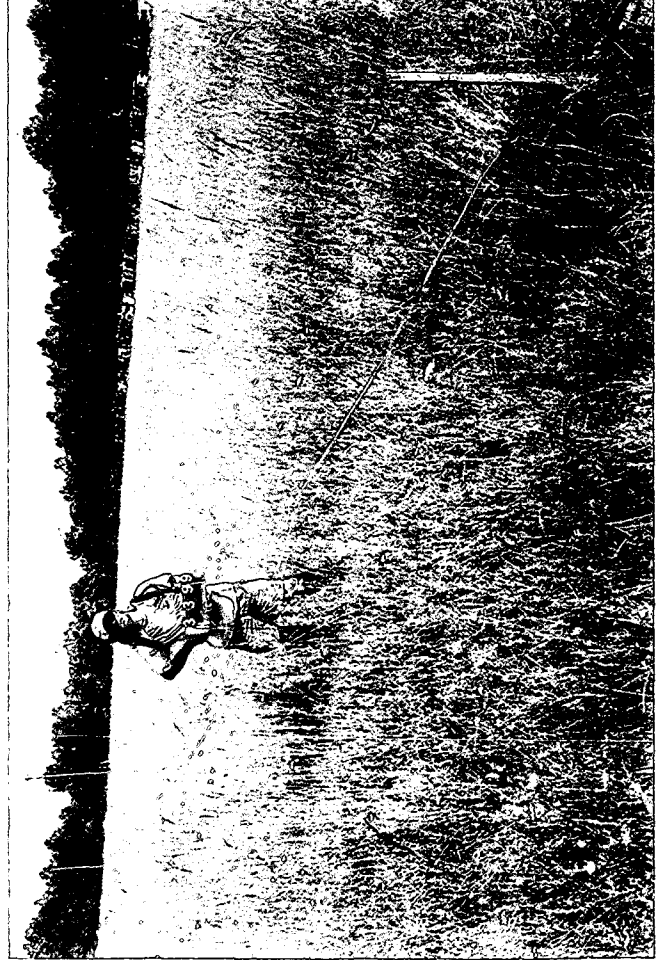




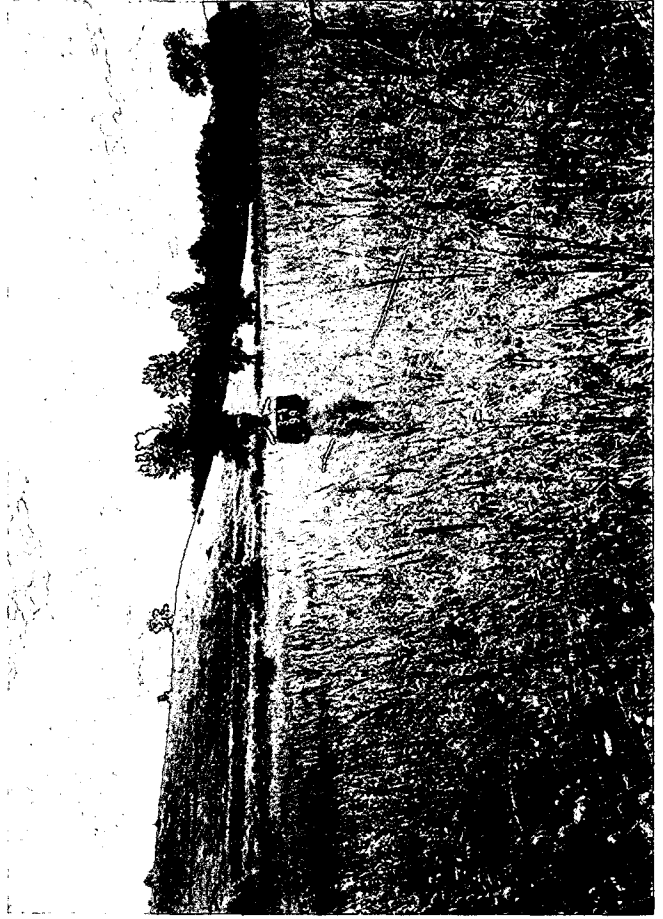
Photograph 1. Area 3 1999, Sample 1.



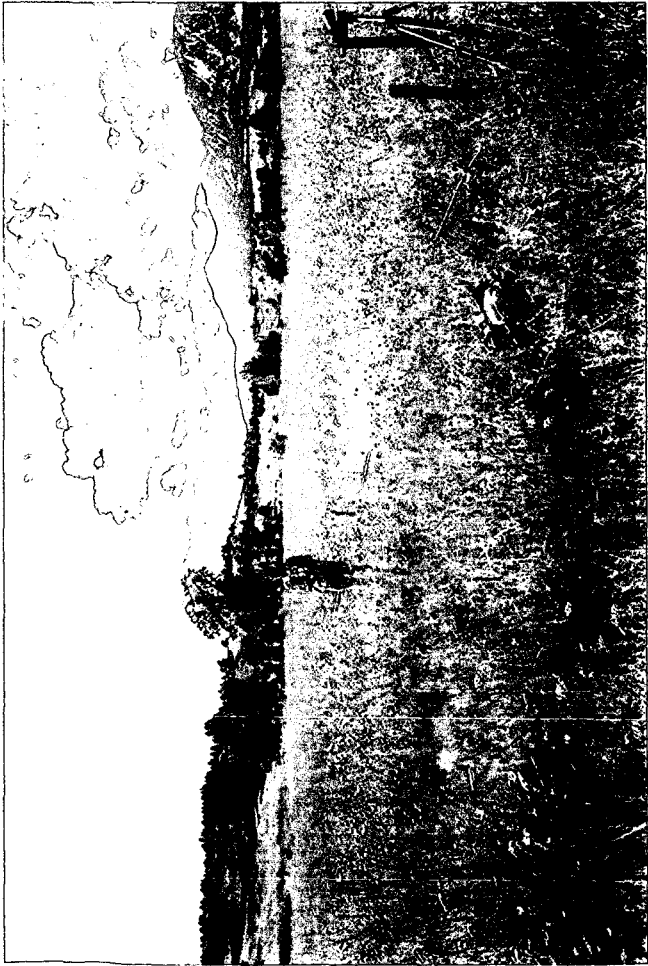
Photograph 2. Area 3 1999, Sample 2.



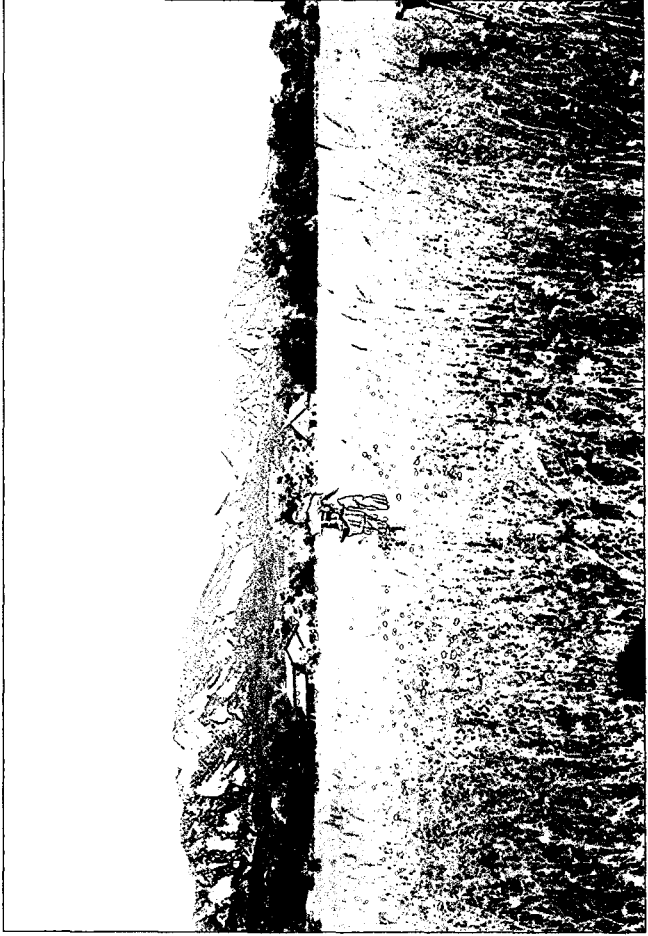
Photograph 3. Area 3 1999, Sample 3.



Photograph 4. Area 3 1999, Sample 4.



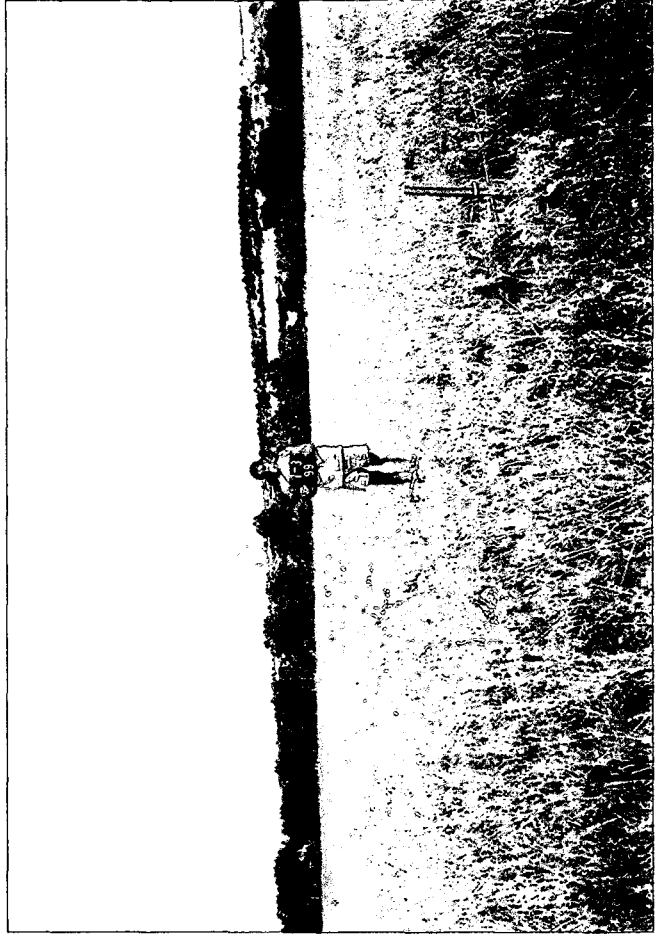
Photograph 5. Area 3 1999, Sample 5.



Photograph 6. Area 3 1999, Sample 6.



Photograph 7. Area 7 1999, Sample 2.

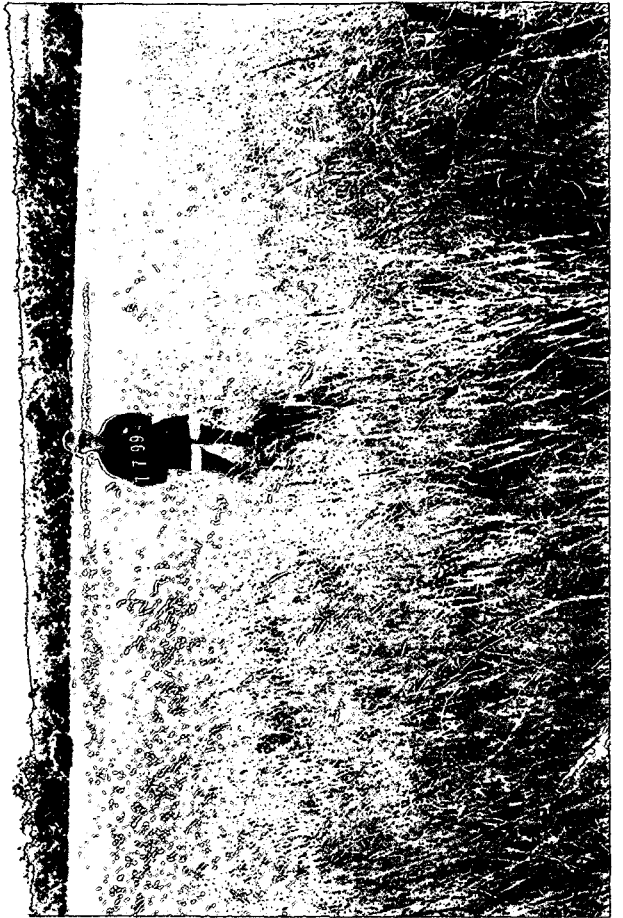


Photograph 8. Area 7 1999, Sample 3.

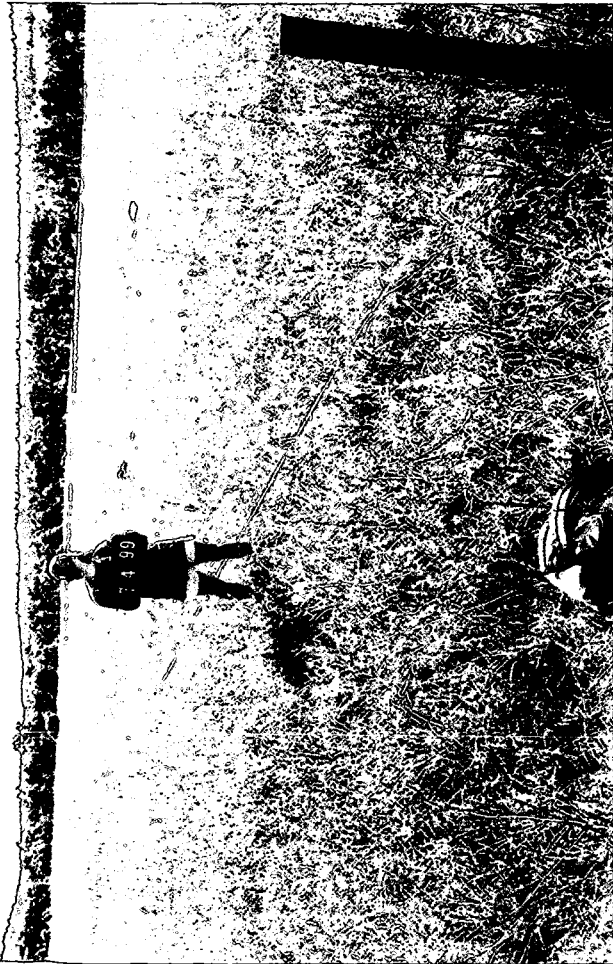




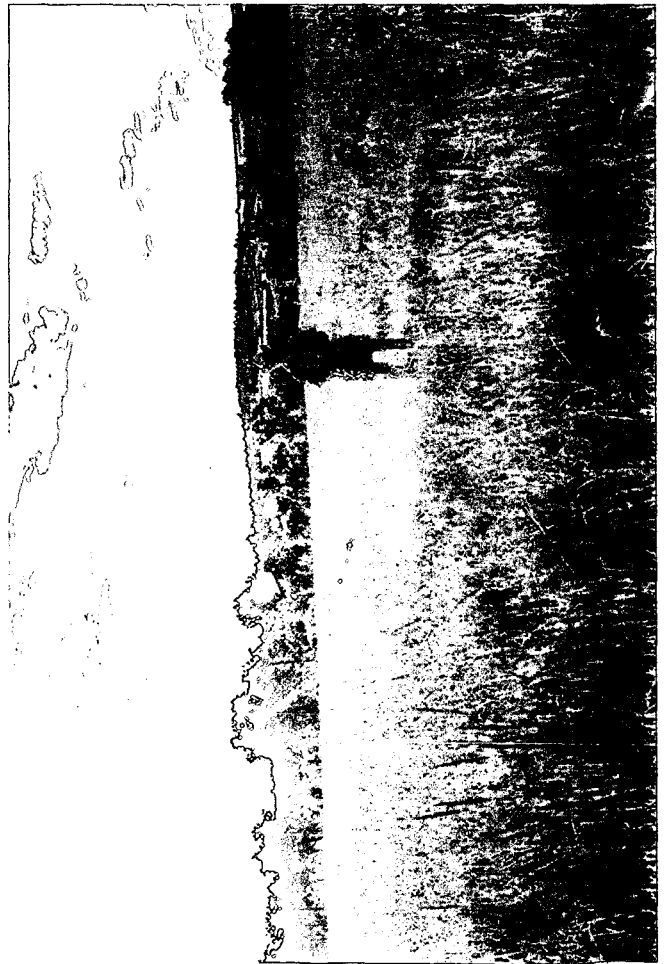
Photograph 10. Area 7 1999, Sample 5.



Photograph 12. Area 7 1999, Sample 7.

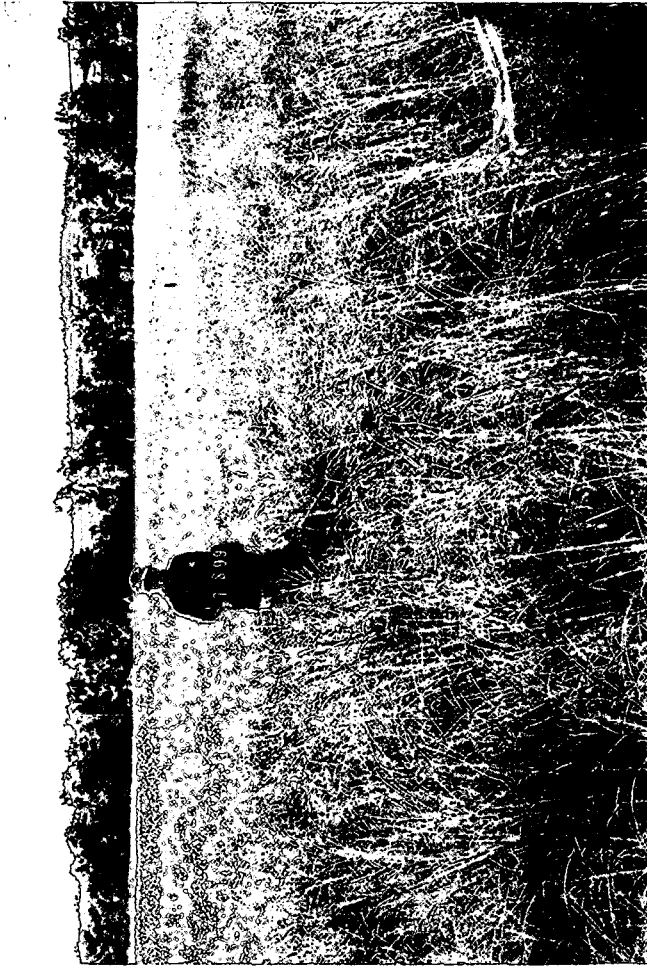


Photograph 9. Area 7 1999, Sample 4.

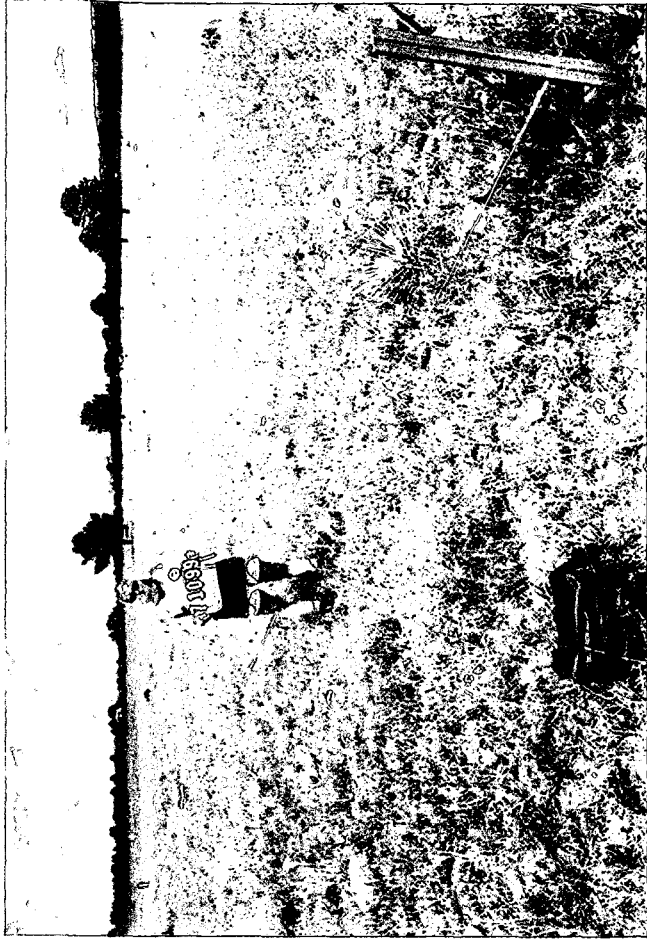


Photograph 11. Area 7 1999, Sample 6.





Photograph 13. Area 7 1999, Sample 8.



Photograph 14. Area 7 1999, Sample 10.



Photograph 15. Area 6 1999, Sample 2.