

2008 Revegetation Monitoring

Introduction

The Rocky Flats Site (Site), a U.S. Department of Energy facility, is located near Golden, Colorado. For nearly 40 years during the Cold War, the Site produced nuclear weapons components and was an integral part of the United States' nuclear weapons program. In the early 1990s the Site was shut down, and cleanup and closure activities began. As part of the cleanup and closure of the Site, the buildings, roads, and other infrastructure in the Industrial Area were removed. Approximately 650 acres were disturbed during cleanup activities, which were completed in fall 2005. Revegetation of the disturbed areas was conducted to prevent erosion and sedimentation of the Site streams and to meet water quality standards. Reestablishment of native plant species is also desirable to benefit wildlife and provide desirable vegetation and ground cover adjacent to the Rocky Flats National Wildlife Refuge. As part of the revegetation process, monitoring is conducted to determine whether success criteria, as stated in the *Rocky Flats, Colorado, Site Revegetation Plan* (Revegetation Plan; DOE 2008) are being met as well as to determine whether management of these revegetation areas is needed.

The success criteria from the Revegetation Plan are:

- The revegetation site will have a minimum of 30 percent relative foliar cover of live desired species (seeded or nonseeded native species). Relative cover is defined as the percentage of cover of a given species divided by the total amount of vegetation cover present. Example: Species A has 20 percent absolute cover, and total vegetation cover (all individual species cover values summed) is 80 percent.
Relative cover = $(20/80) \times 100 = 25\%$.
- The revegetation site will have a minimum of 70 percent total ground cover that comprises litter cover, current year live vegetation basal cover, and rock cover.
- A minimum of 50 percent of the seeded native species will be present at the revegetation site.
- No single species will contribute more than 45 percent of the relative foliar cover (except in areas where dominance by a single species is appropriate for long-term wildlife and habitat management objectives).

This report summarizes the revegetation monitoring results for data collected during 2008. The objective of the revegetation monitoring in 2008 was to assess the success of the revegetation efforts.

Methods

Semiquantitative revegetation monitoring was conducted during mid-summer 2008 to evaluate the establishment of vegetation at revegetation locations across the Site. The monitoring methodology provided in the Revegetation Plan was used with some modification. The revegetation areas were divided into units on the basis of geographic features (e.g., roads, streams) or previous building areas (e.g., 700 Area, 400 Area). A total of 56 revegetation units were sampled (Figure 1). Within each revegetation unit, sample locations were randomly

generated in the Geographic Information System and then located on the ground using a Global Positioning System for monitoring. Quadrats of 50 × 100 centimeters were used to sample the vegetation. Depending on the size of the area, the number of quadrats sampled in each area varied from 5 to 30. A total of 960 quadrats were sampled in 2008. Table 1 lists the number of quadrats sampled in each unit. At each quadrat, both species richness and species cover were sampled. A species was listed as present for a quadrat if any part of the plant was located within or overhung inside the quadrat boundary. Cover was estimated for each species using the following cover class system and midpoints (in parentheses): 1 = <5% (2.5%), 2 = 6–25% (15%), 3 = 26–50% (37.5%), 4 = 51–75% (62.5%), 5 = 75–95% (85%), 6 = >95% (97.5%).

Species lists were generated for each revegetation unit by combining all the quadrat data for that unit. The midpoint of each cover class was used for analysis. Foliar cover by species was averaged across all the quadrats sampled for each revegetation unit. Foliar cover data are reported as the percent absolute cover and percent relative cover for each species encountered. The percent absolute foliar cover was calculated as the sum of all cover values for a species in a revegetation unit divided by the number of quadrats sampled in that unit. Relative foliar cover was calculated as the sum of all cover values for a species in a revegetation unit divided by the sum of all cover values for all species in the same revegetation unit, multiplied by 100.

Results and Discussion

Table 2 shows the total species richness (number of species) found at each revegetation location. Species richness in 2008 at the revegetation locations ranged from a low of 9 species in unit 54 to 45 species in unit 32. Tables 3 through 8 show the list of species that were present at each revegetation location. The wide range in the number of species present in each revegetation location is attributable to a number of factors, including how long ago the area was revegetated, the size of the location, the number of quadrats sampled in the location, the degree of disturbance in the area prior to revegetation, and the management actions (e.g., weed control) that have been conducted in the area. Fifteen different seeded graminoid species have established and are growing at some or all locations in 2008. Table 2 lists the species that were seeded at each revegetation location and the number of seeded species found growing there in 2008. These included western wheatgrass (*Agropyron smithii*), slender wheatgrass (*Agropyron caninum* = *Agropyron trachycaulum*), thickspike wheatgrass (*Agropyron dasystachyum*), Griffith's wheatgrass (*Agropyron griffithsii* = *A. lanceolatus*), Canada wildrye (*Elymus canadensis*), junegrass (*Koeleria pyramidata*), green needle grass (*Stipa viridula*), big bluestem (*Andropogon gerardii*), little bluestem (*Andropogon scoparius*), side-oats grama (*Bouteloua curtipendula*), blue grama (*Bouteloua gracilis*), buffalo grass (*Buchloe dactyloides*), switchgrass (*Panicum virgatum*), Indian grass (*Sorghastrum nutans*), and sand dropseed (*Sporobolus cryptandrus*). Only western wheatgrass was established at all 56 locations. As would be expected in a revegetation project, many other early successional species were growing at many of the areas. Kochia (*Kochia scoparia*), yellow sweet clover (*Melilotus officinalis*), wild lettuce (*Lactuca serriola*), alyssum (*Alyssum minus*), and Russian thistle (*Salsola iberica*) were among the more abundant species. These will largely disappear on their own over the next couple of years as the seeded species begin to fill in more. Several noxious weeds also occurred in the revegetation areas. The most common of these were diffuse knapweed (*Centaurea diffusa*), downy brome (*Bromus tectorum*), and filaree (*Erodium cicutarium*). Weed management will continue to be conducted as needed to keep noxious weed populations down in the revegetation areas and enable the desired seeded species to establish more quickly and compete successfully with the weeds.

Slightly different seed mixes were used at the revegetation locations depending on the year they were seeded and the slope position. One of the success criteria in the Revegetation Plan states that at least 50 percent of the seeded species must be present in an area for it to be considered successful. Table 2 lists the revegetation location, species in the seed mix, number of seeded species, number of species present at the location in 2008, and percentage present at the location in 2008. Thirty-eight locations (68 percent) had 50 percent or more seeded species present in 2008 and have thus met this success criterion (Table 9). Table 10 gives the date when the revegetation locations were originally seeded, what seed mix was used, whether they have been reseeded with soil amendments added, and what erosion controls were used. Examination of Tables 9 and 10 shows that many of the locations that failed the percent of seeded species presence criterion recently had the revegetation replanted with soil amendments added. These locations are therefore quite new, and more time is needed for the various seeded species to establish. For the other locations that did not meet this criterion in 2008, other factors may explain why many of the seeded species have not established—inadequate or uneven initial seeding, poor soil conditions, competition from the more aggressive cool season graminoid species in the seed mix, or drought. The monitoring methodology may also contribute to the lack of seeded species present, because this measure is based solely on the species list generated from the quadrat sampling. Given the small size of the total area measured on the ground through the quadrat method, it is possible that more of the seeded species are present at the revegetation locations but are simply outside the “footprint” of the randomly located quadrats in 2008.

Ground cover protection from rock, litter, and current-year live vegetation varied from 33 percent to over 100 percent at the revegetation locations in 2008 (Table 11). The occasional values over 100 percent are a result of the cover class system used for estimating cover, which estimates cover values into a range and uses the midpoint of the cover class for analysis. Another success criterion outlined in the Revegetation Plan states that a minimum of 70 percent total ground cover comprising litter cover, current-year live vegetation basal cover, and rock cover is to be present to help prevent erosion. Twenty-nine of the 56 locations (52 percent) met this criterion in 2008 (Tables 9 and 11). At most of the locations the greatest cover came from litter or rock. Currently, much of the litter category comes from the erosion control materials that are in place (i.e., erosion mats, Flexterra). In time, the dominant ground cover will be from natural litter as dead plant matter falls to the ground at the end of each growing season and builds up. Until the natural plant litter increases, however, the erosion control materials provide an artificial litter to protect the ground surface from erosion. Where overall cover was less than 70 percent, additional erosion control measures such as wattles and hay bales are in place to protect the areas and prevent erosion; or, bands of established vegetation are present between the revegetation areas and water resources.

A third success criterion outlined in the Revegetation Plan states that a minimum of 30 percent relative cover of desired species must be present, and a fourth criterion states that no single species should comprise more than 45 percent of the total relative cover. Tables 3 through 8 summarize the foliar cover data by location for 2008. The shaded row titled Total Herbaceous Native Cover at the bottom of each table shows the percent cover of desired species at each location. The values that are higher than 30 percent at each revegetation location are shaded, indicating that these locations have met this success criterion. Total relative vegetation cover of desired (native) species was greater than 30 percent at 49 of the 56 locations monitored in 2008. Fifteen of the 56 revegetation locations (27 percent) had a single species that comprised greater than 45 percent of the relative cover (Tables 3–8). Six of these locations were dominated by

slender wheatgrass, one of the early successional seeded native species. In time, this short-lived perennial native species should be replaced by the other planted native graminoids. At five locations, western wheatgrass, a native seeded species, has become dominant and is outcompeting the other seeded native species. In time this may change. At three locations (units 2, 23, and 43), 2008 was the first growing season since the revegetation had been redone. Kochia was the dominant species at these locations. It will disappear on its own once the seeded species establish and out compete it. The final location that had a single species with greater than 45 percent cover was dominated by Sheep's fescue (*Festuca ovina*). This was one of a few locations where topsoil was imported during early Site closure revegetation efforts. The seed was evidently in the topsoil that was brought in and has become dominant at this location. While it provides good ground cover, it is aggressive enough that it has out competed the native species that were seeded.

Besides kochia, other dominant species at the revegetation locations include common weedy, early successional species such as diffuse knapweed, yellow sweet clover, filaree, wild lettuce, alyssum, and Russian thistle. Most of these species will disappear on their own after a year or two as the desired seeded species out compete them for resources and begin to establish more abundantly. Weeds such as diffuse knapweed will need to be controlled through weed control efforts, which will be done as part of the normal vegetation management operations at the Site.

Table 9 presents a summary of the pass/fail criteria for each revegetation location monitored in 2008. Thirteen of the 56 locations (23 percent) passed all four criteria in 2008. It is not unexpected that most failed to meet all the success criteria, as it often takes 5 or 6 years to establish a good stand of vegetation. In addition, the success criteria listed in the Revegetation Plan are an initial set of criteria established primarily for erosion protection. As stated in the Revegetation Plan, these "...criteria are provided as initial guidance; however, common sense combined with scientific data will need to be applied to final evaluations to determine whether further management actions are required at specific locations." Also, although some of the areas passed each of the criteria listed in the Revegetation Plan, this does not necessarily mean that the vegetation has established to a desirable level at these locations as of 2008. Some of the revegetation locations may require some reseeded and weed control. Proactive management of the revegetation areas is critical to success. These data are useful for making management decisions and provide documentation of the successional changes at the revegetation locations. This documentation can be used to help improve revegetation techniques at the Site.

Present Landfill/Original Landfill Revegetation Summary

The Present Landfill (PLF) and Original Landfill (OLF) are the two landfills at the Site. The areas were revegetated during Site closure. Revegetation monitoring is conducted at these locations as part of the overall revegetation monitoring. The monitoring units for the PLF in 2008 were units 50, 51, and 52 (Figure 1). The OLF monitoring unit was unit 39 (Figure 1).

Total species richness in 2008 was 36 species at the PLF (three sampling units combined) and 30 species at the OLF (Tables 2, 6, 7, and 8). The difference in numbers between the PLF and OLF is largely related to the environmental conditions at each location. The OLF is on a south-facing hillside, where soil is much drier than soil at the PLF. One of the success criteria in the Revegetation Plan states that at least 50 percent of the seeded species must be present in an area for it to be considered successful. Table 2 lists the species that were seeded at each landfill. At the PLF and OLF, the percent of seeded species present was 80 percent (three sampling units

averaged together) and 86 percent, respectively, in 2008. Thus, revegetation at both landfills met this criterion in 2008.

Ground cover protection from rock, litter, and current-year live vegetation averaged 97.8 percent and 82.7 percent, respectively, at the PLF and OLF (Table 11). The Revegetation Plan states that a minimum of 70 percent total ground cover consisting of litter cover, current-year live vegetation basal cover, and rock cover is to be present to help prevent erosion. In 2008, this criterion was met at both landfills. At both locations, most of the ground cover came from litter, of which a portion is represented by the erosion controls, followed by rock and then current-year live vegetation basal cover. In time, the litter cover will continue to remain the dominant ground cover, but it will come from dead plant material that becomes matted down, rather than from the erosion controls. Both landfills have substantial protection on the soil surface to prevent erosion.

A third success criterion outlined in the Revegetation Plan states that a minimum of 30 percent relative cover of desired species must be present. The foliar cover data for the PLF and OLF are shown in Tables 7 and 8 for 2008. The shaded row titled Total Herbaceous Native Cover represents the percentage of desired species at each location. At each of the individual sampling units on the PLF and OLF, the relative cover of desired species was greater than 81 percent, thus meeting this success criterion. The dominant species on the cover of the PLF in 2008 were slender wheatgrass and western wheatgrass, followed by Canada bluegrass (*Poa compressa*) on the western half and big bluestem on the eastern half. The difference between the western and eastern half is largely related to the different topsoils that were placed at each location during the construction of the cover. The western half received a “mixed” topsoil that was designed to mimic the native pediment topsoil structure, whereas the eastern half received unmixed Rocky Flats Alluvium. The finer texture on the western half is more conducive to the establishment of cool-season species that now dominate its surface, and the rocky, cobbly structure on the eastern half favors more of the warm-season, tall grass species like the big bluestem. The east face of the PLF was dominated by slender wheatgrass and western wheatgrass. Weed cover from forbs on the PLF cover was not very high in 2008 because various portions had been treated with Milestone (aminopyralid) over the past three growing seasons to keep the weeds down and allow for better establishment of the graminoids. At the OLF, the dominant species were slender wheatgrass and western wheatgrass.

A fourth success criterion outlined in the Revegetation Plan states that no single species shall comprise more than 45 percent of the total relative cover. On the PLF, the relative cover of slender wheatgrass on the west PLF area (unit 50) was 58 percent, while on the east face (unit 52), western wheatgrass had a total cover of 49 percent (Tables 7 and 8). Thus, only the eastern portion of the PLF cover met this success criterion in 2008 (Table 7). The OLF had no single species with a cover value greater than 45 percent (Table 6).

Table 9 presents a summary of the pass/fail criteria for each of the revegetation units at the PLF and OLF monitored in 2008. Only one of the three locations sampled on the PLF—the eastern half of the PLF cover (unit 51)—passed all four criteria in 2008. Each of the other units on the PLF had relative cover of a single species greater than 45 percent. The OLF passed all four success criteria in 2008. The fact that in 2008 the OLF met all four success criteria listed in the Revegetation Plan does not mean that the vegetation has established to a desirable level. Several areas of the OLF were disturbed during projects in 2008 and were revegetated again; these areas are starting over. Additionally, at other locations on the OLF, initial erosion controls (straw and Flexterra) were applied so thickly that it has inhibited the germination and establishment of

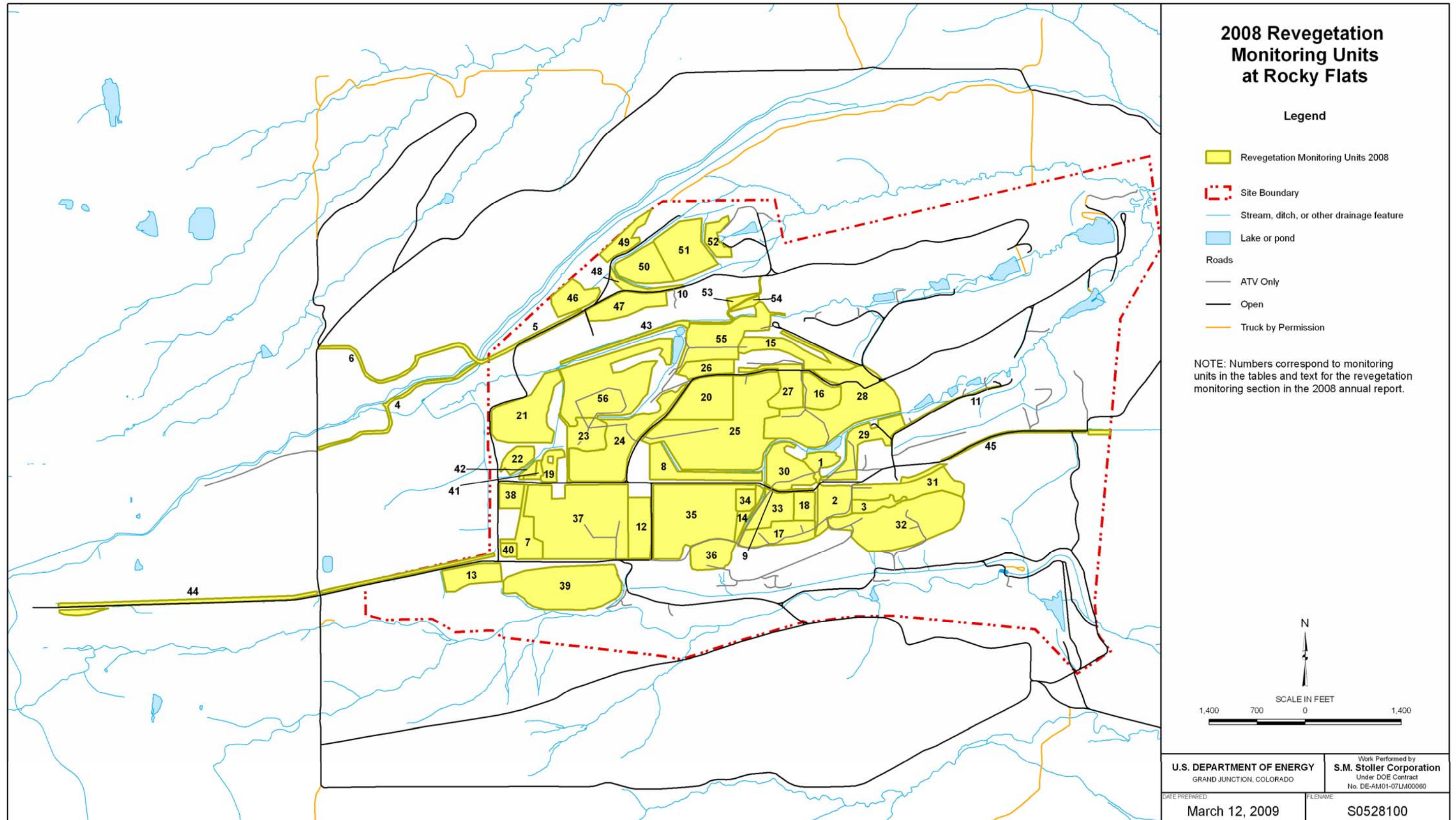
vegetation. In fiscal year 2009, these areas will be harrowed and reseeded to try and establish a good stand of vegetation where currently only a sparse stand of vegetation exists. A good, healthy stand of vegetation is desirable on both landfills to protect the covers and provide good erosion control.

Summary

Monitoring was conducted at 56 revegetation monitoring units at the Site during 2008. Results indicate that the vegetation has begun growing at all the revegetation locations, but its establishment is still in the early to mid-stages at most locations. Ground cover from vegetation, rock, and litter (including erosion controls) is protecting the soil from erosion at most locations. Where it is below the success criteria, additional erosion controls are still in place to protect water quality. Thirteen of the monitored locations met all four success criteria listed in the Revegetation Plan. Continued management of the revegetation areas will be conducted to help control undesirable species and assist in the establishment of desired species.

References

DOE (U.S. Department of Energy), 2008. *Rocky Flats, Colorado, Site Revegetation Plan*, Office of Legacy Management, Grand Junction, Colorado, September.



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Figure 1. 2008 Revegetation Monitoring Units at Rocky Flats.

Table 1. Number of Quadrats Sampled Per Location in 2008

Location	# Quadrats Sampled
1	20
2	20
3	15
4	20
5	20
6	20
7	20
8	20
9	5
10	5
11	5
12	20
13	20
14	15
15	20
16	20
17	15
18	15
19	20
20	20
21	30
22	10
23	20
24	30
25	30
26	10
27	15
28	30
29	20
30	20
31	20
32	30
33	20
34	10
35	30
36	10
37	30
38	10
39	30
40	5
41	5
42	5
43	20
44	20
45	20
46	10
47	10
48	5
49	10
50	15
51	15
52	10
53	5
54	5
55	30
56	30
Total	960

Table 4. (cont.)

Scientific Name	Speccode	Growth Form	Native	Cool/ Warm Season	Noxious Weed	11		12		13		14		15		16		17		18		19		20	
						Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)
Dactylis glomerata L.	DAGL1	G	N	C																					
Festuca pratensis Huds.	FEPR1	G	N	C																					
Lolium perenne L. var. aristatum Willd.	LOPE1	G	N	C																	0.1	0.4			
Phleum pratense L.	PHPR1	G	N	C																					
Poa compressa L.	POCO1	G	N	C						0.8	1.7			0.1	0.4					0.2	0.6				
Poa pratensis L.	POPR1	G	N	C																					
Polypogon monspeliensis (L.) Desf.	POMO1	G	N	C																					
Triticum aestivum L.	TRAE1	G	N	C				5.0	12.9	0.1	0.3										0.3	0.7	4.5	14.7	
Echinochloa crusgallii (L.) Beauv.	ECCR1	G	N	W																					
Setaria viridis (L.) Beauv.	SEVI1	G	N	W										0.3	0.8			0.2	0.5			0.3	0.7		
Agropyron caninum (L.) Beauv. ssp. majus (Vasey) C. L. Hitchc.	AGCA1	G	Y	C		4.5	7.0	6.3	16.2	21.5	50.1	6.5	14.3	5.9	19.1	4.5	10.7	6.5	21.4	7.0	24.9	3.3	9.6	3.0	9.8
Agropyron dasystachyum (Hook.) Scribn.	AGDA1	G	Y	C																					
Agropyron griffithsii Scribn. & Smith	AGGR1	G	Y	C																					
Agropyron smithii Rydb.	AGSM1	G	Y	C		8.0	12.4	4.6	12.0	4.8	11.1	7.8	17.3	5.6	18.3	7.3	17.2	1.8	6.0	2.0	7.1	8.0	23.7	4.4	14.3
Agropyron spicatum (Pursh) Scribn. and Sm.	AGSP1	G	Y	C												0.1	0.3								
Aristida purpurea Nutt. var. robusta (Merrill) A. Holmgren & N. Holmgr	ARLO1	G	Y	C																					
Elymus canadensis L.	ELCA1	G	Y	C																					
Festuca ovina L. var. rydbergii St. Yves	FEOV1	G	Y	C																					
Hordeum jubatum L.	HOJU1	G	Y	C				0.4	1.0			1.3	2.9	0.8	2.4	1.0	2.4	0.2	0.5	0.2	0.6				
Juncus balticus Willd.	JUBA1	G	Y	C																					
Koeleria pyramidata (Lam.) Beauv.	KOPY1	G	Y	C						0.4	0.9														
Oryzopsis hymenoides (R. & S.) Ricker	ORHY1	G	Y	C																					
Scirpus validus Vahl.	SCVA1	G	Y	C																					
Sitanion hystrix (Nutt.) Sm. var. brevifolium (Sm.) Hitchc.	SIHY1	G	Y	C													0.2	0.5							
Stipa comata Trin. & Rupr.	STCO1	G	Y	C																					
Stipa viridula Trin.	STVI1	G	Y	C				0.1	0.3	0.3	0.6									0.2	0.6	0.3	0.7		
Typha latifolia L.	TYLA1	G	Y	C																					
Andropogon gerardii Vitman	ANGE1	G	Y	W								0.2	0.4					0.2	0.5			0.1	0.4		
Andropogon scoparius Michx.	ANSC1	G	Y	W																					
Bouteloua curtipendula (Michx.) Torr.	BOCU1	G	Y	W								1.0	2.2									0.1	0.4		
Bouteloua gracilis (H. B. K.) Lag ex Griffiths	BOGR1	G	Y	W						0.3	0.6	1.3	2.9					0.8	2.7	1.3	4.7				
Bouteloua hirsuta Lag	BOHI1	G	Y	W																					
Buchloe dactyloides (Nutt.) Engelm.	BUDA1	G	Y	W		0.5	0.8	0.3	0.6	0.1	0.3	0.3	0.7	0.6	2.0			0.8	2.7	0.3	1.2	0.3	0.7		
Carex nebrascensis Dew.	CANE1	G	Y	W																					
Juncus torreyi Cov.	JUTO1	G	Y	W																					
Panicum capillare L.	PACA1	G	Y	W																		0.1	0.4		
Panicum virgatum L.	PAVI1	G	Y	W																					
Sorghastrum nutans (L.) Nash	SONU1	G	Y	W																		0.1	0.4		
Sporobolus cryptandrus (Torr.) A. Gray	SPCR1	G	Y	W																					
Festuca sp.	FES1	G	NA	C																					
Unknown Species	UNKN																								
Total Foliar Cover						75.5	100.0	50.6	100.0	55.9	100.0	59.3	100.0	45.8	100.0	58.3	100.0	47.3	100.0	46.2	100.0	52.8	100.0	50.6	100.0
Total Forb Cover						34.5	53.5	21.1	54.7	10.5	24.5	23.3	51.5	16.8	54.5	28.9	68.3	18.5	61.0	13.5	47.9	14.1	41.9	16.6	54.3
Total Non-Native Forb Cover						33.5	51.9	20.5	53.1	9.8	22.7	21.8	48.2	11.0	35.8	26.3	62.1	18.3	60.4	13.3	47.3	14.0	41.5	15.8	51.4
Total Native Forb Cover						1.0	1.6	0.6	1.6	0.8	1.7	1.5	3.3	5.8	18.7	2.6	6.2	0.2	0.5	0.2	0.6	0.1	0.4	0.9	2.9
Total Graminoid Cover						41.0	46.5	29.5	45.3	45.4	75.5	36.0	48.5	29.0	45.5	29.4	31.7	28.8	39.0	32.7	52.1	38.6	58.1	34.0	45.7
Total Non-Native Graminoid Cover						28.0	26.4	17.9	15.2	18.1	12.0	17.5	7.7	16.1	3.7	16.5	1.2	18.3	4.4	21.7	13.0	26.4	21.9	26.6	21.6
Total Native Graminoid Cover						13.0	20.2	11.6	30.1	27.3	63.6	18.5	40.8	12.9	41.9	12.9	30.5	10.5	34.6	11.0	39.1	12.3	36.3	7.4	24.1
Total Herbaceous Native Cover						14.0	21.7	12.3	31.7	28.0	65.3	20.0	44.1	18.6	60.6	15.5	36.7	10.7	35.2	11.2	39.6	12.4	36.7	8.3	26.9
Total Herbaceous Non-Native Cover						61.5	78.3	38.4	68.3	27.9	34.7	39.3	55.9	27.1	39.4	42.8	63.3	36.7	64.8	35.0	60.4	40.4	63.3	42.4	73.1
Total Warm-Season Graminoid Cover						0.5	0.8	0.3	0.6	0.4	0.9	2.8	6.3	0.9	2.8	0.0	0.0	2.0	6.6	1.7	5.9	1.0	3.0	0.0	0.0
Total Cool-Season Graminoid Cover						40.5	45.7	29.3	44.7	45.0	74.6	33.2	42.3	28.1	42.7	29.4	31.7	26.8	32.4	31.0	46.2	37.6	55.2	34.0	45.7
Total Noxious Weed Cover						21.0	32.6	6.3	16.2	8.4	19.5	17.3	38.2	5.5	17.9	18.0	42.6	7.2	23.6	6.5	23.1	7.1	21.1	2.1	6.9

Absolute Cover = The percentage of the number of hits on a species out of the total number of hits possible.
 Relative Cover = The percentage of the number of hits on a species out of the total number of vegetation hits.
 Native Categories: Y = Native, N = Non-Native, NA = Not Available
 Growth Form Categories: F = Forb, G = Graminoid
 Cool/Warm Season Categories: C = Cool-Season Graminoid, W = Warm-Season Graminoid
 Noxious Weed Category: X = Noxious Weed (listed on May 2006 Colorado State Noxious Weed List)

Shaded cells indicate success criteria were met in 2008.

Table 5. (cont.)

Scientific Name	Speccode	Growth Form	Native	Cool/ Warm Season	Noxious Weed	21		22		23		24		25		26		27		28		29		30	
						Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)
Dactylis glomerata L.	DAGL1	G	N	C										0.5	2.0										
Festuca pratensis Huds.	FEPR1	G	N	C										1.1	4.4					0.1	0.2				
Lolium perenne L. var. aristatum Willd.	LOPE1	G	N	C																					
Phleum pratense L.	PHPR1	G	N	C										0.1	0.3							0.1	0.3		
Poa compressa L.	POCO1	G	N	C				0.3	0.5			0.1	0.3	0.1	0.3	3.8	9.6	0.2	0.3			0.8	1.6		
Poa pratensis L.	POPR1	G	N	C				0.3	0.5											0.1	0.2				
Polypogon monspeliensis (L.) Desf.	POMO1	G	N	C																					
Triticum aestivum L.	TRAE1	G	N	C																					
Echinochloa crusgallii (L.) Beauv.	ECCR1	G	N	W								0.1	0.3												
Setaria viridis (L.) Beauv.	SEVI1	G	N	W								0.2	0.5	0.1	0.3										
Agropyron caninum (L.) Beauv. ssp. majus (Vasey) C. L. Hitchc.	AGCA1	G	Y	C		4.4	20.9	11.8	22.2	3.6	13.9	16.7	50.5	9.1	36.7	7.3	18.6	8.8	13.3	6.8	16.9	6.3	13.0	7.9	18.8
Agropyron dasystachyum (Hook.) Scribn.	AGDA1	G	Y	C						0.1	0.5														
Agropyron griffithsii Scribn. & Smith	AGGR1	G	Y	C																					
Agropyron smithii Rydb.	AGSM1	G	Y	C		0.9	4.3	11.8	22.2	2.3	8.6	5.8	17.7	5.9	23.9	18.3	46.8	40.3	60.5	14.8	36.6	15.5	32.1	11.9	28.3
Agropyron spicatum (Pursh) Scribn. and Sm.	AGSP1	G	Y	C																					
Aristida purpurea Nutt. var. robusta (Merrill) A. Holmgren & N. Holmgr	ARLO1	G	Y	C				0.5	0.9																
Elymus canadensis L.	ELCA1	G	Y	C		1.7	7.9																		
Festuca ovina L. var. rydbergii St. Yves	FEOV1	G	Y	C																		0.1	0.3		
Hordeum jubatum L.	HOJU1	G	Y	C		0.1	0.4	0.3	0.5			0.1	0.3							0.1	0.2	0.1	0.3	0.1	0.3
Juncus balticus Willd.	JUBA1	G	Y	C		0.2	0.8																		
Koeleria pyramidata (Lam.) Beauv.	KOPY1	G	Y	C										0.2	0.7										
Oryzopsis hymenoides (R. & S.) Ricker	ORHY1	G	Y	C										0.1	0.3										
Scirpus validus Vahl.	SCVA1	G	Y	C		1.3	6.3																		
Sitanion hystrix (Nutt.) Sm. var. brevifolium (Sm.) Hitchc.	SIHY1	G	Y	C																					
Stipa comata Trin. & Rupr.	STCO1	G	Y	C																					
Stipa viridula Trin.	STVI1	G	Y	C										0.1	0.3					0.1	0.2	0.1	0.3	0.1	0.3
Typha latifolia L.	TYLA1	G	Y	C		0.1	0.4																		
Andropogon gerardii Vitman	ANGE1	G	Y	W		0.1	0.4	0.3	0.5			0.2	0.5											0.1	0.3
Andropogon scoparius Michx.	ANSC1	G	Y	W		0.3	1.2	0.5	0.9			0.2	0.5									0.1	0.3	0.1	0.3
Bouteloua curtipendula (Michx.) Torr.	BOCU1	G	Y	W		1.3	6.3	10.8	20.3			0.3	1.0	0.1	0.3			0.3	0.5	0.4	1.0	1.1	2.3	3.0	7.1
Bouteloua gracilis (H. B. K.) Lag ex Griffiths	BOGR1	G	Y	W		0.9	4.3	1.5	2.8			0.1	0.3	1.8	7.1	0.8	1.9	0.5	0.8	4.8	11.9	7.0	14.5	0.8	1.8
Bouteloua hirsuta Lag	BOHI1	G	Y	W																					
Buchloe dactyloides (Nutt.) Engelm.	BUDA1	G	Y	W		0.6	2.8	2.8	5.2			0.7	2.0	0.4	1.7	0.8	1.9	2.8	4.3	1.2	2.9			0.3	0.6
Carex nebrascensis Dew.	CANE1	G	Y	W		0.6	2.8																		
Juncus torreyi Cov.	JUTO1	G	Y	W		1.0	4.7																		
Panicum capillare L.	PACA1	G	Y	W						0.1	0.5			0.2	0.7										
Panicum virgatum L.	PAVI1	G	Y	W		1.2	5.5																		
Sorghastrum nutans (L.) Nash	SONU1	G	Y	W				1.8	3.3					0.1	0.3			0.2	0.3						
Sporobolus cryptandrus (Torr.) A. Gray	SPCR1	G	Y	W		0.1	0.4	0.3	0.5																
Festuca sp.	FES1	G	NA	C																					
Unknown Species	UNKN							0.5	0.9							0.3	0.6								
Total Foliar Cover						42.2	100.0	75.0	100.0	49.1	100.0	57.0	100.0	49.8	100.0	65.0	100.0	93.7	100.0	68.5	100.0	77.3	100.0	72.0	100.0
Total Forb Cover						6.1	28.7	8.3	15.6	19.3	73.7	7.6	23.0	4.7	18.9	7.3	18.6	10.3	15.5	9.4	23.3	12.1	25.1	17.0	40.5
Total Non-Native Forb Cover						5.0	23.6	5.3	9.9	19.1	73.2	6.8	20.7	4.5	18.2	4.0	10.3	10.3	15.5	8.0	19.8	12.0	24.9	16.6	39.6
Total Native Forb Cover						1.1	5.1	3.0	5.7	0.1	0.5	0.8	2.3	0.2	0.7	3.3	8.3	0.0	0.0	1.4	3.5	0.1	0.3	0.3	0.6
Total Graminoid Cover						36.1	71.3	66.3	83.5	29.9	26.3	49.4	77.0	45.1	81.1	57.5	80.8	83.3	84.5	59.1	76.7	65.1	74.9	55.0	59.5
Total Non-Native Graminoid Cover						21.4	2.0	24.3	4.2	23.8	2.9	25.4	4.3	27.3	9.1	30.5	11.5	30.3	5.0	30.8	7.0	34.8	11.9	30.8	1.8
Total Native Graminoid Cover						14.7	69.3	42.0	79.2	6.1	23.4	24.0	72.7	17.8	72.1	27.0	69.2	53.0	79.5	28.3	69.8	30.4	63.0	24.3	57.7
Total Herbaceous Native Cover						15.8	74.4	45.0	84.9	6.3	23.9	24.8	75.0	18.0	72.7	30.3	77.6	53.0	79.5	29.7	73.3	30.5	63.2	24.5	58.3
Total Herbaceous Non-Native Cover						26.4	25.6	29.5	14.2	42.9	76.1	32.3	25.0	31.8	27.3	34.5	21.8	40.7	20.5	38.8	26.7	46.8	36.8	47.4	41.4
Total Warm-Season Graminoid Cover						6.0	28.3	17.8	33.5	0.1	0.5	1.7	5.1	2.6	10.4	1.5	3.8	3.8	5.8	6.4	15.8	8.3	17.1	4.3	10.1
Total Cool-Season Graminoid Cover						30.1	42.9	48.5	50.0	29.8	25.8	47.8	72.0	42.5	70.7	56.0	76.9	79.5	78.8	52.7	60.9	56.9	57.8	50.8	49.4
Total Noxious Weed Cover						0.4	2.0	1.8	3.3	0.3	1.0	4.3	12.9	1.0	4.0	4.0	10.3	7.3	11.0	4.6	11.3	4.0	8.3	4.4	10.4

Absolute Cover = The percentage of the number of hits on a species out of the total number of hits possible.
 Relative Cover = The percentage of the number of hits on a species out of the total number of vegetation hits.
 Native Categories: Y = Native, N = Non-Native, NA = Not Available
 Growth Form Categories: F = Forb, G = Graminoid
 Cool/Warm Season Categories: C = Cool-Season Graminoid, W = Warm-Season Graminoid
 Noxious Weed Category: X = Noxious Weed (listed on May 2006 Colorado State Noxious Weed List)

Shaded cells indicate success criteria were met in 2008.

Table 6. (cont.)

Scientific Name	Speccode	Growth Form	Native	Cool/ Warm Season	Noxious Weed	31		32		33		34		35		36		37		38		39		40	
						Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)
Dactylis glomerata L.	DAGL1	G	N	C																					
Festuca pratensis Huds.	FEPR1	G	N	C										0.1	0.2	0.3	0.7	0.1	0.3						
Lolium perenne L. var. aristatum Willd.	LOPE1	G	N	C																0.3	0.7				
Phleum pratense L.	PHPR1	G	N	C																					
Poa compressa L.	POCO1	G	N	C		1.9	5.0	0.8	1.7	0.1	0.3					1.8	4.7	0.3	1.0					6.0 9.4	
Poa pratensis L.	POPR1	G	N	C		0.1	0.3	0.2	0.4																
Polypogon monspeliensis (L.) Desf.	POMO1	G	N	C																					
Triticum aestivum L.	TRAE1	G	N	C														1.2	4.7			0.1	0.4		
Echinochloa crusgallii (L.) Beauv.	ECCR1	G	N	W																					
Setaria viridis (L.) Beauv.	SEVI1	G	N	W																0.8	2.0				
Agropyron caninum (L.) Beauv. ssp. majus (Vasey) C. L. Hitchc.	AGCA1	G	Y	C		1.8	4.7	5.0	11.2	6.6	17.0			11.4	28.7	2.8	7.4	7.8	31.6	5.0	13.2	7.7	32.4	31.0 48.4	
Agropyron dasystachyum (Hook.) Scribn.	AGDA1	G	Y	C																					
Agropyron griffithsii Scribn. & Smith	AGGR1	G	Y	C																					
Agropyron smithii Rydb.	AGSM1	G	Y	C		7.9	21.1	4.8	10.7	11.5	29.5	50.0	60.1	13.5	33.9	11.5	30.9	6.8	27.6	4.8	12.5	8.3	35.2	17.0 26.6	
Agropyron spicatum (Pursh) Scribn. and Sm.	AGSP1	G	Y	C																					
Aristida purpurea Nutt. var. robusta (Merrill) A. Holmgren & N. Holmgr	ARLO1	G	Y	C																0.3	0.7				
Elymus canadensis L.	ELCA1	G	Y	C																					
Festuca ovina L. var. rydbergii St. Yves	FEOV1	G	Y	C										0.1	0.2									0.5 0.8	
Hordeum jubatum L.	HOJU1	G	Y	C		0.1	0.3			0.3	0.6			0.1	0.2			0.5	2.0	0.3	0.7				
Juncus balticus Willd.	JUBA1	G	Y	C																					
Koeleria pyramidata (Lam.) Beauv.	KOPY1	G	Y	C						0.1	0.3									0.3	0.7				
Oryzopsis hymenoides (R. & S.) Ricker	ORHY1	G	Y	C																					
Scirpus validus Vahl.	SCVA1	G	Y	C																		0.1	0.4		
Sitanion hystrix (Nutt.) Sm. var. brevifolium (Sm.) Hitchc.	SIHY1	G	Y	C		0.1	0.3																		
Stipa comata Trin. & Rupr.	STCO1	G	Y	C		0.1	0.3	0.1	0.2									0.5	2.0						
Stipa viridula Trin.	STVI1	G	Y	C		2.0	5.4	1.6	3.6	0.3	0.6							0.2	0.7			0.5	2.1		
Typha latifolia L.	TYLA1	G	Y	C																					
Andropogon gerardii Vitman	ANGE1	G	Y	W				0.1	0.2					0.6	1.5					3.0	7.9				
Andropogon scoparius Michx.	ANSC1	G	Y	W		0.1	0.3							0.1	0.2	1.5	4.0	0.2	0.7	0.3	0.7				
Bouteloua curtipendula (Michx.) Torr.	BOCU1	G	Y	W		4.8	12.7	2.6	5.8	2.0	5.1	1.5	1.8	2.3	5.6			0.3	1.3	4.0	10.5	1.2	4.9		
Bouteloua gracilis (H. B. K.) Lag ex Griffiths	BOGR1	G	Y	W		1.4	3.7	0.2	0.4	3.0	7.7	11.5	13.8	1.5	3.8			0.2	0.7	2.3	5.9	0.6	2.5	0.5 0.8	
Bouteloua hirsuta Lag	BOHI1	G	Y	W				0.1	0.2																
Buchloe dactyloides (Nutt.) Engelm.	BUDA1	G	Y	W		1.0	2.7	4.3	9.6	1.1	2.9			0.4	1.0	1.0	2.7	2.3	9.1	4.0	10.5	0.8	3.2	0.5 0.8	
Carex nebrascensis Dew.	CANE1	G	Y	W																					
Juncus torreyi Cov.	JUTO1	G	Y	W																		0.1	0.4		
Panicum capillare L.	PACA1	G	Y	W				0.1	0.2																
Panicum virgatum L.	PAVI1	G	Y	W				0.6	1.3																
Sorghastrum nutans (L.) Nash	SONU1	G	Y	W		0.1	0.3											0.1	0.3	0.3	0.7	0.1	0.4		
Sporobolus cryptandrus (Torr.) A. Gray	SPCR1	G	Y	W		0.5	1.3					0.3	0.3	0.2	0.4					0.5	1.3				
Festuca sp.	FES1	G	NA	C																					
Unknown Species	UNKN											0.3	0.3												
Total Foliar Cover						68.4	100.0	76.5	100.0	72.0	100.0	117.3	100.0	74.8	100.0	73.3	100.0	61.8	100.0	76.0	100.0	62.7	100.0	104.0 100.0	
Total Forb Cover						4.8	12.7	15.8	35.4	12.8	32.7	13.3	15.9	8.8	22.0	15.8	42.3	3.8	15.2	12.3	32.2	3.8	16.2	7.0 10.9	
Total Non-Native Forb Cover						4.5	12.0	12.7	28.5	11.5	29.5	10.3	12.3	8.7	21.8	9.5	25.5	3.7	14.8	12.3	32.2	3.0	12.7	6.0 9.4	
Total Native Forb Cover						0.3	0.7	3.1	6.9	1.3	3.2	3.0	3.6	0.1	0.2	6.3	16.8	0.1	0.3	0.0	0.0	0.8	3.5	1.0 1.6	
Total Graminoid Cover						63.6	87.3	60.8	64.6	59.3	67.3	103.8	83.8	66.1	78.0	57.5	57.7	58.0	84.8	63.8	67.8	58.8	83.8	97.0 89.1	
Total Non-Native Graminoid Cover						43.8	34.1	41.5	21.3	34.4	3.5	40.5	7.8	36.0	2.5	40.8	12.8	39.2	8.8	39.0	2.6	39.6	2.5	47.5 11.7	
Total Native Graminoid Cover						19.9	53.2	19.3	43.3	24.9	63.8	63.3	76.0	30.1	75.5	16.8	45.0	18.8	76.1	24.8	65.1	19.3	81.3	49.5 77.3	
Total Herbaceous Native Cover						20.1	53.8	22.3	50.2	26.1	67.0	66.3	79.6	30.2	75.7	23.0	61.7	18.9	76.4	24.8	65.1	20.1	84.9	50.5 78.9	
Total Herbaceous Non-Native Cover						48.3	46.2	54.2	49.8	45.9	33.0	50.8	20.1	44.7	24.3	50.3	38.3	42.8	23.6	51.3	34.9	42.6	15.1	53.5 21.1	
Total Warm-Season Graminoid Cover						7.9	21.1	7.8	17.6	6.1	15.7	13.3	15.9	5.0	12.6	2.5	6.7	3.0	12.1	15.0	39.5	2.7	11.3	1.0 1.6	
Total Cool-Season Graminoid Cover						55.8	66.2	52.9	47.0	53.1	51.6	90.5	67.9	61.1	65.5	55.0	51.0	55.0	72.7	48.8	28.3	56.2	72.5	96.0 87.5	
Total Noxious Weed Cover						4.9	13.0	11.1	24.9	9.0	23.1	7.0	8.4	3.7	9.2	3.5	9.4	1.3	5.1	1.8	4.6	1.3	5.3	2.0 3.1	

Absolute Cover = The percentage of the number of hits on a species out of the total number of hits possible.
 Relative Cover = The percentage of the number of hits on a species out of the total number of vegetation hits.
 Native Categories: Y = Native, N = Non-Native, NA = Not Available
 Growth Form Categories: F = Forb, G = Graminoid
 Cool/Warm Season Categories: C = Cool-Season Graminoid, W = Warm-Season Graminoid
 Noxious Weed Category: X = Noxious Weed (listed on May 2006 Colorado State Noxious Weed List)

Shaded cells indicate success criteria were met in 2008.

Table 7. Species Foliar Cover Summary at Locations 41-50

Scientific Name	Speccode	Growth Form	Native	Cool/ Warm Season	Noxious Weed	41		42		43		44		45		46		47		48		49		50		
						Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)
Alyssum alyssoides (L.) L.	ALAL1	F	N																			0.8	1.6			
Alyssum minus (L.) Rothmaler var. micranthus (C. A. Mey.) Dudley	ALMI1	F	N			1.5	2.5	0.5	1.6	0.1	0.5					5.8	9.3	1.5	3.4	1.0	1.8	3.5	7.4			
Camelina microcarpa Andr. ex DC.	CAMI1	F	N			0.5	0.8																			
Centaurea diffusa Lam.	CEDI1	F	N		X							4.1	13.1	1.1	4.3	0.3	0.4	2.0	4.5	2.0	3.6	6.8	14.4			
Chenopodium album L.	CHAL1	F	N							0.3	1.0															
Choripora tenella (Pall.) DC.	CHTE1	F	N							0.9	3.5															
Cichorium intybus L.	CIIN1	F	N		X																					
Cirsium arvense (L.) Scop.	CIAR1	F	N		X																					
Convolvulus arvensis L.	COAR1	F	N		X									0.1	0.5			0.3	0.6	0.5	0.9	0.3	0.5			
Cynoglossum officinale L.	CYOF1	F	N		X																					
Erodium cicutarium (L.) L'Her.	ERIC1	F	N		X	3.0	5.0							0.1	0.5	9.8	15.9	4.3	9.6	1.0	1.8	7.0	14.9	1.0	1.9	
Hypericum perforatum L.	HYPE1	F	N		X																					
Kochia scoparia (L.) Schrad.	KOSC1	F	N			1.0	1.7	3.5	10.9	12.6	50.0	4.8	15.1	9.3	35.1			1.0	2.3	0.5	0.9			0.2	0.3	
Lactuca serriola L.	LASE1	F	N							1.0	4.0	2.9	9.1	0.8	2.8			0.5	1.1	0.5	0.9					
Lepidium campestre (L.) R. Br.	LECA1	F	N																							
Linaria dalmatica (L.) Mill.	LIDA1	F	N		X													0.3	0.6							
Marrubium vulgare L.	MAVU1	F	N																							
Medicago lupulina L.	MELU1	F	N																							
Medicago sativa L. ssp. sativa	MESA1	F	N																							
Melilotus alba Medic.	MEAL1	F	N																							
Melilotus officinalis (L.) Pall.	MEOF1	F	N					0.5	1.6	0.5	2.0	0.3	0.8	0.9	3.3			0.5	1.1	18.5	33.0	7.3	15.4			
Nepeta cataria L.	NECA1	F	N																							
Plantago lanceolata L.	PLLA1	F	N																							
Polygonum arenastrum Jord. ex Bor.	POAR1	F	N							0.1	0.5	0.1	0.4	0.4	1.4											
Salsola iberica Senn. & Pau.	SAIB1	F	N							0.6	2.5	1.3	4.0													
Scorzonera laciniata L.	SCLA1	F	N			0.5	0.8							0.1	0.5											
Sisymbrium altissimum L.	SIAL1	F	N									0.1	0.4	0.3	0.9	0.3	0.4									
Taraxacum officinale Weber	TAOF1	F	N																							
Tragopogon dubius Scop.	TRDU1	F	N							0.1	0.5	0.3	0.8										0.5	1.1		
Verbascum thapsus L.	VEFH1	F	N		X													0.3	0.6				0.3	0.5		
Agrostis scabra Willd.	AGSC1	F	Y																							
Ambrosia artemisiifolia L.	AMAR1	F	Y													0.3	0.4	0.3	0.6							
Ambrosia psilostachya DC.	AMPS1	F	Y																	0.5	0.9					
Artemisia campestris L. ssp. caudata (Michx.) Hall & Clem.	ARCA1	F	Y																			0.3	0.5			
Artemisia dracunculus L.	ARDR1	F	Y																							
Artemisia ludoviciana Nutt. var. ludoviciana	ARLU1	F	Y																							
Asclepias speciosa Torr.	ASSP1	F	Y																							
Aster falcatus Lindl.	ASFA1	F	Y																							
Aster porteri Gray	ASPO1	F	Y																							
Astragalus canadensis L.	ASCA1	F	Y																							
Chrysopsis fulcrata Greene	CHFU1	F	Y																				0.3	0.5		
Chrysopsis villosa Pursh.	CHVI1	F	Y																				0.3	0.5		
Conyza canadensis (L.) Cronq.	COCA1	F	Y																							
Dalea candida Michx. ex Willd. var. oligophylla (Torr.) Shinnars.	DACA1	F	Y																							
Descurainia pinnata (Walt.) Britt.	DEPH1	F	Y			0.5	0.8																		0.2	0.3
Epilobium paniculatum Nutt.	EPPA1	F	Y																							
Erigeron divergens T. & G.	ERDI1	F	Y																							
Euphorbia serpyllifolia Pers.	EUSE1	F	Y													0.3	0.4									
Grindelia squarrosa (Pursh.) Dun.	GRSQ1	F	Y											0.4	1.4					0.5	0.9					
Helianthus annuus L.	HEAN1	F	Y													0.3	0.4	0.3	0.6							
Lepidium densiflorum Schrad.	LEDE1	F	Y															0.3	0.6							
Liatris punctata Hook.	LIPU1	F	Y																							
Linum perenne L. var. lewisii (Pursh.) Eat. & Wright	LIPE1	F	Y																							
Lippia cuneifolia (Torr.) Steud.	LICU1	F	Y																							
Mirabilis linearis (Pursh.) Heimerl	MILI1	F	Y																							
Oenothera villosa Thunb. ssp. strigosa (Rydb.) Dietrich & Raven	OEVI1	F	Y																							
Penstemon virens Penn.	PEVI1	F	Y																							
Plantago patagonica Jacq.	PLPA1	F	Y																							
Psoralea tenuiflora Pursh.	PSTE1	F	Y																							
Solanum triflorum Nutt.	SOTR1	F	Y																							
Spergularia media (L.) Presl.	SPME1	F	Y																							
Sphaeralcea coccinea (Pursh.) Rydb.	SPCO1	F	Y																							
Verbena bracteata Lag. & Rodr.	VEBR1	F	Y																				0.3	0.5		
Rumex sp.	RUM1	F	NA																							
Aegilops cylindrica Host	AECY1	G	N	C	X																					
Agropyron cristatum (L.) Gaertn.	AGCR1	G	N	C		11.0	18.2					0.3	0.8													
Agropyron desertorum (Fisch.) Schult.	AGDE1	G	N	C												1.5	2.4									
Agropyron elongatum (Host) Beauv.	AGEL1	G	N	C																						
Agropyron intermedium (Host) Beauv.	AGIN1	G	N	C		1.0	1.7									3.0	4.9							1.0	1.9	
Agropyron repens (L.) Beauv.	AGRE1	G	N	C	X																					
Avena fatua var. sativa (L.) Hausskn.	AVFA1	G	N	C																						
Bromus inermis Leyss. ssp. inermis	BRIN1	G	N	C		6.0	9.9			0.1	0.5			0.4	1.4											
Bromus japonicus Thunb. ex Murr.	BRJA1	G	N	C						0.1	0.5	0.1	0.4	0.1	0.5	0.3	0.4	0.5	1.1	1.0	1.8	0.8	1.6			
Bromus tectorum L.	BRTE1	G	N	C	X	1.0	1.7	1.5	4.7	1.8	6.9	0.3	0.8	0.6	2.4	0.5	0.8	1.8	4.0	0.5	0.9	0.3	0.5	0.2	0.3	

Table 7. (cont.)

Scientific Name	Speccode	Growth Form	Native	Cool/Warm Season	Noxious Weed	41		42		43		44		45		46		47		48		49		50	
						Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)
Dactylis glomerata L.	DAGL1	G	N	C		3.0	5.0																		
Festuca pratensis Huds.	FEPR1	G	N	C																					
Lolium perenne L. var. aristatum Willd.	LOPE1	G	N	C								0.9	2.8												
Phleum pratense L.	PHPR1	G	N	C																					
Poa compressa L.	POCO1	G	N	C				0.5	1.6			0.1	0.4										4.5	8.7	
Poa pratensis L.	POPR1	G	N	C																			0.2	0.3	
Polypogon monspeliensis (L.) Desf.	POMO1	G	N	C																					
Triticum aestivum L.	TRAE1	G	N	C								0.1	0.4												
Echinochloa crusgallii (L.) Beauv.	ECCR1	G	N	W																					
Setaria viridis (L.) Beauv.	SEVI1	G	N	W																		0.3	0.5		
Agropyron caninum (L.) Beauv. ssp. majus (Vasey) C. L. Hitchc.	AGCA1	G	Y	C				19.5	60.9	2.6	10.4	6.3	19.8	7.4	28.0	9.0	14.6	4.5	10.2	7.0	12.5	4.5	9.6	30.0	58.3
Agropyron dasystachyum (Hook.) Scribn.	AGDA1	G	Y	C																			0.2	0.3	
Agropyron griffithsii Scribn. & Smith	AGGR1	G	Y	C																			1.0	1.9	
Agropyron smithii Rydb.	AGSM1	G	Y	C		0.5	0.8	2.0	6.3	2.3	8.9	6.0	19.0	4.3	16.1	24.8	40.2	2.5	5.6	4.5	8.0	3.3	6.9	6.5	12.6
Agropyron spicatum (Pursh) Scribn. and Sm.	AGSP1	G	Y	C																					
Aristida purpurea Nutt. var. robusta (Merrill) A. Holmgren & N. Holmgr	ARLO1	G	Y	C													0.3	0.6				0.3	0.5		
Elymus canadensis L.	ELCA1	G	Y	C								0.9	2.8												
Festuca ovina L. var. rydbergii St. Yves	FEOV1	G	Y	C		30.5	50.4					0.1	0.4												
Hordeum jubatum L.	HOJU1	G	Y	C				0.5	1.6			0.3	0.8	0.1	0.5			0.3	0.6	1.0	1.8				
Juncus balticus Willd.	JUBA1	G	Y	C																					
Koeleria pyramidata (Lam.) Beauv.	KOPY1	G	Y	C				0.5	1.6			0.1	0.4					0.3	0.6	1.0	1.8		2.3	4.5	
Oryzopsis hymenoides (R. & S.) Ricker	ORHY1	G	Y	C																					
Scirpus validus Vahl.	SCVA1	G	Y	C																					
Sitanion hystrix (Nutt.) Sm. var. brevifolium (Sm.) Hitchc.	SIHY1	G	Y	C																					
Stipa comata Trin. & Rupr.	STCO1	G	Y	C																					
Stipa viridula Trin.	STVI1	G	Y	C						1.9	7.4	0.4	1.2			2.0	3.3	1.0	2.3			1.5	3.2	0.2	0.3
Typha latifolia L.	TYLA1	G	Y	C																					
Andropogon gerardii Vitman	ANGE1	G	Y	W								0.4	1.2					0.5	1.1	0.5	0.9	0.8	1.6	0.2	0.3
Andropogon scoparius Michx.	ANSC1	G	Y	W				0.5	1.6			0.1	0.4					0.3	0.6						
Bouteloua curtipendula (Michx.) Torr.	BOCU1	G	Y	W				0.5	1.6			0.4	1.2			0.5	0.8	7.0	15.8	4.0	7.1	5.0	10.6	0.2	0.3
Bouteloua gracilis (H. B. K.) Lag ex Griffiths	BOGR1	G	Y	W				0.5	1.6	0.1	0.5	0.5	1.6	0.1	0.5	1.3	2.0	12.5	28.2	11.0	19.6	2.3	4.8		
Bouteloua hirsuta Lag	BOHI1	G	Y	W																					
Buchloe dactyloides (Nutt.) Engelm.	BUDA1	G	Y	W				1.5	4.7	0.1	0.5	0.6	2.0			2.0	3.3	1.5	3.4	0.5	0.9	0.8	1.6	3.7	7.1
Carex nebrascensis Dew.	CANE1	G	Y	W																					
Juncus torreyi Cov.	JUTO1	G	Y	W																					
Panicum capillare L.	PACA1	G	Y	W																					
Panicum virgatum L.	PAVI1	G	Y	W																					
Sorghastrum nutans (L.) Nash	SONU1	G	Y	W														0.3	0.6						
Sporobolus cryptandrus (Torr.) A. Gray	SPCR1	G	Y	W		0.5	0.8															0.3	0.5	0.2	0.3
Festuca sp.	FES1	G	NA	C																					
Unknown Species	UNKN																								
Total Foliar Cover						101.5	100.0	74.0	100.0	68.3	100.0	75.5	100.0	71.4	100.0	107.5	100.0	91.3	100.0	104.0	100.0	96.0	100.0	101.5	100.0
Total Forb Cover						7.0	11.6	4.5	14.1	16.3	64.4	13.8	43.7	13.4	50.7	16.8	27.2	11.3	25.4	25.0	44.6	27.3	58.0	1.3	2.6
Total Non-Native Forb Cover						6.5	10.7	4.5	14.1	16.3	64.4	13.8	43.7	13.0	49.3	16.0	26.0	10.5	23.7	24.0	42.9	26.3	55.9	1.2	2.3
Total Native Forb Cover						0.5	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.4	0.8	1.2	0.8	1.7	1.0	1.8	1.0	2.1	0.2	0.3
Total Graminoid Cover						94.5	88.4	69.5	85.9	52.0	35.6	61.8	56.3	58.0	49.3	90.8	72.8	80.0	74.6	79.0	55.4	68.8	42.0	100.2	97.4
Total Non-Native Graminoid Cover						63.0	36.4	44.0	6.3	45.0	7.9	45.8	5.6	46.1	4.3	51.3	8.5	49.3	5.1	49.5	2.7	50.3	2.7	55.8	11.3
Total Native Graminoid Cover						31.5	52.1	25.5	79.7	7.0	27.7	16.0	50.8	11.9	45.0	39.5	64.2	30.8	69.5	29.5	52.7	18.5	39.4	44.3	86.1
Total Herbaceous Native Cover						32.0	52.9	25.5	79.7	7.0	27.7	16.0	50.8	12.3	46.4	40.3	65.4	31.5	71.2	30.5	54.5	19.5	41.5	44.5	86.4
Total Herbaceous Non-Native Cover						69.5	47.1	48.5	20.3	61.3	72.3	59.5	49.2	59.1	53.6	67.3	34.6	59.8	28.8	73.5	45.5	76.5	58.5	57.0	13.6
Total Warm-Season Graminoid Cover						0.5	0.8	3.0	9.4	0.3	1.0	2.0	6.3	0.1	0.5	3.8	6.1	22.0	49.7	16.0	28.6	9.3	19.7	4.2	8.1
Total Cool-Season Graminoid Cover						94.0	87.6	66.5	76.6	51.8	34.7	59.8	50.0	57.9	48.8	87.0	66.7	58.0	24.9	63.0	26.8	59.5	22.3	96.0	89.3
Total Noxious Weed Cover						4.0	6.6	1.5	4.7	1.8	6.9	4.4	13.9	2.0	7.6	10.5	17.1	8.8	19.8	4.0	7.1	14.5	30.9	1.2	2.3

Absolute Cover = The percentage of the number of hits on a species out of the total number of hits possible.
 Relative Cover = The percentage of the number of hits on a species out of the total number of vegetation hits.
 Native Categories: Y = Native, N = Non-Native, NA = Not Available
 Growth Form Categories: F = Forb, G = Graminoid
 Cool/Warm Season Categories: C = Cool-Season Graminoid, W = Warm-Season Graminoid
 Noxious Weed Category: X = Noxious Weed (listed on May 2006 Colorado State Noxious Weed List)

Shaded cells indicate success criteria were met in 2008.

Table 8. Species Foliar Cover Summary at Locations 51-56

Scientific Name	Speccode	Growth Form	Native	Cool/ Warm Season	Noxious Weed	51		52		53		54		55		56	
						Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)
Alyssum alyssoides (L.) L.	ALAL1	F	N														
Alyssum minus (L.) Rothmaler var. micranthus (C. A. Mey.) Dudley	ALMI1	F	N			0.2	0.4			4.5	9.1			0.3	1.0	0.8	2.8
Camelina microcarpa Andr. ex DC.	CAMI1	F	N														
Centaurea diffusa Lam.	CEDI1	F	N		X			2.0	5.3					4.1	12.7	0.1	0.3
Chenopodium album L.	CHAL1	F	N			0.2	0.4										
Chorispora tenella (Pall.) DC.	CHTE1	F	N														
Cichorium intybus L.	CIIN1	F	N		X												
Cirsium arvense (L.) Scop.	CIAR1	F	N		X								0.3	0.8	0.1	0.3	
Convolvulus arvensis L.	COAR1	F	N		X											0.1	0.3
Cynoglossum officinale L.	CYOF1	F	N		X												
Erodium cicutarium (L.) L'Her.	ERCI1	F	N		X	1.0	2.5	0.3	0.7	0.5	1.0			0.1	0.3	2.0	7.5
Hypericum perforatum L.	HYPE1	F	N		X	0.2	0.4										
Kochia scoparia (L.) Schrad.	KOSC1	F	N										0.2	0.5	0.9	3.5	
Lactuca serriola L.	LASE1	F	N			0.5	1.2	1.0	2.7							0.1	0.3
Lepidium campestre (L.) R. Br.	LECA1	F	N										0.1	0.3	0.1	0.3	
Linaria dalmatica (L.) Mill.	LIDA1	F	N		X			0.3	0.7								
Marrubium vulgare L.	MAVU1	F	N														
Medicago lupulina L.	MELU1	F	N														
Medicago sativa L. ssp. sativa	MESA1	F	N														
Melilotus alba Medic.	MEAL1	F	N													0.2	0.6
Melilotus officinalis (L.) Pall.	MEOF1	F	N			1.3	3.3	1.5	4.0	0.5	1.0			3.3	10.3	0.1	0.3
Nepeta cataria L.	NECA1	F	N														
Plantago lanceolata L.	PLLA1	F	N														
Polygonum arenastrum Jord. ex Bor.	POAR1	F	N													0.2	0.6
Salsola iberica Senn. & Pau.	SAIB1	F	N					0.3	0.7							0.2	0.6
Scorzonera laciniata L.	SCLA1	F	N													0.1	0.3
Sisymbrium altissimum L.	SIAL1	F	N														
Taraxacum officinale Weber	TAOF1	F	N														
Tragopogon dubius Scop.	TRDU1	F	N					0.3	0.7								
Verbascum thapsus L.	VEFH1	F	N		X	0.2	0.4	1.5	4.0								
Agrostis scabra Willd.	AGSC1	F	Y														
Ambrosia artemisiifolia L.	AMAR1	F	Y														
Ambrosia psilostachya DC.	AMPS1	F	Y			0.3	0.8	0.5	1.3								
Artemisia campestris L. ssp. caudata (Michx.) Hall & Clem.	ARCA1	F	Y														
Artemisia dracunculus L.	ARDR1	F	Y														
Artemisia ludoviciana Nutt. var. ludoviciana	ARLU1	F	Y			0.2	0.4										
Asclepias speciosa Torr.	ASSP1	F	Y														
Aster falcatus Lindl.	ASFA1	F	Y														
Aster porteri Gray	ASPO1	F	Y			1.0	2.5										
Astragalus canadensis L.	ASCA1	F	Y														
Chrysopsis fulcrata Greene	CHFU1	F	Y														
Chrysopsis villosa Pursh.	CHVI1	F	Y														
Conyza canadensis (L.) Cronq.	COCA1	F	Y														
Dalea candida Michx. ex Willd. var. oligophylla (Torr.) Shinn.	DACA1	F	Y														
Descurainia pinnata (Walt.) Britt.	DEPH1	F	Y														
Epilobium paniculatum Nutt.	EPPA1	F	Y														
Erigeron divergens T. & G.	ERDI1	F	Y			0.2	0.4										
Euphorbia serpyllifolia Pers.	EUSE1	F	Y													0.2	0.6
Grindelia squarrosa (Pursh.) Dun.	GRSQ1	F	Y					0.5	1.3				0.2	0.5	0.5	1.9	
Helianthus annuus L.	HEAN1	F	Y													0.6	2.2
Lepidium densiflorum Schrad.	LEDE1	F	Y														
Liatris punctata Hook.	LIPU1	F	Y														
Linum perenne L. var. lewisii (Pursh.) Eat. & Wright	LIPE1	F	Y														
Lippia cuneifolia (Torr.) Steud.	LICU1	F	Y														
Mirabilis linearis (Pursh.) Heimerl	MILI1	F	Y														
Oenothera villosa Thunb. ssp. strigosa (Rydb.) Dietrich & Raven	OEVI1	F	Y														
Penstemon virens Penn.	PEVI1	F	Y														
Plantago patagonica Jacq.	PLPA1	F	Y														
Psoralea tenuiflora Pursh.	PSTE1	F	Y														
Solanum triflorum Nutt.	SOTR1	F	Y														
Spergularia media (L.) Presl.	SPME1	F	Y														
Sphaeralcea coccinea (Pursh.) Rydb.	SPCO1	F	Y														
Verbena bracteata Lag. & Rodr.	VEBR1	F	Y														
Rumex sp.	RUM1	F	NA														
Aegilops cylindrica Host	AECY1	G	N	C	X												
Agropyron cristatum (L.) Gaertn.	AGCR1	G	N	C						3.0	6.1			0.1	0.3		
Agropyron desertorum (Fisch.) Schult.	AGDE1	G	N	C													
Agropyron elongatum (Host) Beauv.	AGEL1	G	N	C													
Agropyron intermedium (Host) Beauv.	AGIN1	G	N	C								3.0	6.3	0.1	0.3		
Agropyron repens (L.) Beauv.	AGRE1	G	N	C	X												
Avena fatua var. sativa (L.) Hausskn.	AVFA1	G	N	C													
Bromus inermis Leyss. ssp. inermis	BRIN1	G	N	C		0.3	0.8							0.1	0.3		
Bromus japonicus Thunb. ex Murr.	BRJA1	G	N	C		0.5	1.2							0.2	0.5	0.3	0.9
Bromus tectorum L.	BRTE1	G	N	C	X	0.5	1.2			5.0	10.1	12.0	25.3			0.2	0.6

Table 8. (cont.)

Scientific Name	Speccode	Growth Form	Native	Cool/ Warm Season	Noxious Weed	51		52		53		54		55		56	
						Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)	Absolute Cover (%)	Relative Cover (%)
Dactylis glomerata L.	DAGL1	G	N	C													
Festuca pratensis Huds.	FEPR1	G	N	C													
Lolium perenne L. var. aristatum Willd.	LOPE1	G	N	C													
Phleum pratense L.	PHPR1	G	N	C													
Poa compressa L.	POCO1	G	N	C		1.5	3.7							0.5	1.6		
Poa pratensis L.	POPR1	G	N	C										0.1	0.3		
Polypogon monspeliensis (L.) Desf.	POMO1	G	N	C													
Triticum aestivum L.	TRAE1	G	N	C													
Echinochloa crusgallii (L.) Beauv.	ECCR1	G	N	W													
Setaria viridis (L.) Beauv.	SEVI1	G	N	W													
Agropyron caninum (L.) Beauv. ssp. majus (Vasey) C. L. Hitchc.	AGCA1	G	Y	C		13.8	34.0	6.3	16.7					7.6	23.5	9.8	36.8
Agropyron dasystachyum (Hook.) Scribn.	AGDA1	G	Y	C		1.3	3.3										
Agropyron griffithsii Scribn. & Smith	AGGR1	G	Y	C		0.7	1.6										
Agropyron smithii Rydb.	AGSM1	G	Y	C		6.2	15.2	18.3	48.7	26.0	52.5	21.0	44.2	12.5	38.8	6.8	25.8
Agropyron spicatum (Pursh) Scribn. and Sm.	AGSP1	G	Y	C													
Aristida purpurea Nutt. var. robusta (Merrill) A. Holmgren & N. Holmgr	ARLO1	G	Y	C													
Elymus canadensis L.	ELCA1	G	Y	C													
Festuca ovina L. var. rydbergii St. Yves	FEOV1	G	Y	C													
Hordeum jubatum L.	HOJU1	G	Y	C										0.5	1.6	1.0	3.8
Juncus balticus Willd.	JUBA1	G	Y	C													
Koeleria pyramidata (Lam.) Beauv.	KOPY1	G	Y	C		1.7	4.1							0.1	0.3		
Oryzopsis hymenoides (R. & S.) Ricker	ORHY1	G	Y	C													
Scirpus validus Vahl.	SCVA1	G	Y	C													
Sitanion hystrix (Nutt.) Sm. var. brevifolium (Sm.) Hitchc.	SIHY1	G	Y	C													
Stipa comata Trin. & Rupr.	STCO1	G	Y	C													
Stipa viridula Trin.	STVI1	G	Y	C		0.2	0.4			3.0	6.1	7.0	14.7	0.3	0.8		
Typha latifolia L.	TYLA1	G	Y	C													
Andropogon gerardii Vitman	ANGE1	G	Y	W		4.8	11.9									0.1	0.3
Andropogon scoparius Michx.	ANSC1	G	Y	W										0.1	0.3	0.1	0.3
Bouteloua curtipendula (Michx.) Torr.	BOCU1	G	Y	W		0.5	1.2	1.8	4.7					0.3	0.8	0.5	1.9
Bouteloua gracilis (H. B. K.) Lag ex Griffiths	BOGR1	G	Y	W		0.3	0.8	1.5	4.0	0.5	1.0	0.5	1.1	1.0	3.1	0.9	3.5
Bouteloua hirsuta Lag	BOHI1	G	Y	W													
Buchloe dactyloides (Nutt.) Engelm.	BUDA1	G	Y	W		2.0	4.9	1.8	4.7	3.5	7.1	0.5	1.1	0.5	1.6	0.8	2.8
Carex nebrascensis Dew.	CANE1	G	Y	W													
Juncus torreyi Cov.	JUTO1	G	Y	W													
Panicum capillare L.	PACA1	G	Y	W													
Panicum virgatum L.	PAVI1	G	Y	W													
Sorghastrum nutans (L.) Nash	SONU1	G	Y	W		0.2	0.4										
Sporobolus cryptandrus (Torr.) A. Gray	SPCR1	G	Y	W		1.0	2.5			3.0	6.1	3.5	7.4			0.1	0.3
Festuca sp.	FES1	G	NA	C												0.1	0.3
Unknown Species	UNKN																
Total Foliar Cover						91.7	100.0	89.5	100.0	102.5	100.0	101.5	100.0	87.3	100.0	82.5	100.0
Total Forb Cover						5.2	12.7	8.0	21.3	5.5	11.1	0.0	0.0	8.5	26.4	6.0	22.6
Total Non-Native Forb Cover						3.5	8.6	7.0	18.7	5.5	11.1	0.0	0.0	8.3	25.8	4.8	17.9
Total Native Forb Cover						1.7	4.1	1.0	2.7	0.0	0.0	0.0	0.0	0.2	0.5	1.3	4.7
Total Graminoid Cover						86.5	87.3	81.5	78.7	97.0	88.9	101.5	100.0	78.8	73.6	76.5	77.4
Total Non-Native Graminoid Cover						53.8	7.0	52.0	0.0	61.0	16.2	69.0	31.6	56.0	3.1	56.4	1.6
Total Native Graminoid Cover						32.7	80.3	29.5	78.7	36.0	72.7	32.5	68.4	22.8	70.5	20.0	75.5
Total Herbaceous Native Cover						34.3	84.4	30.5	81.3	36.0	72.7	32.5	68.4	22.9	71.1	21.3	80.2
Total Herbaceous Non-Native Cover						57.3	15.6	59.0	18.7	66.5	27.3	69.0	31.6	64.3	28.9	61.2	19.5
Total Warm-Season Graminoid Cover						8.8	21.7	5.0	13.3	7.0	14.1	4.5	9.5	1.8	5.7	2.4	9.1
Total Cool-Season Graminoid Cover						77.7	65.6	76.5	65.3	90.0	74.7	97.0	90.5	76.9	68.0	74.1	68.2
Total Noxious Weed Cover						1.8	4.5	4.0	10.7	5.5	11.1	12.0	25.3	4.4	13.7	2.4	9.1

Absolute Cover = The percentage of the number of hits on a species out of the total number of hits possible.
 Relative Cover = The percentage of the number of hits on a species out of the total number of vegetation hits.
 Native Categories: Y = Native, N = Non-Native, NA = Not Available
 Growth Form Categories: F = Forb, G = Graminoid
 Cool/Warm Season Categories: C = Cool-Season Graminoid, W = Warm-Season Graminoid
 Noxious Weed Category: X = Noxious Weed (listed on May 2006 Colorado State Noxious Weed List)

Shaded cells indicate success criteria were met in 2008.

Table 9. Revegetation Success Criteria Evaluation Summary 2008

Location	>30% Relative Cover of Desired Species	>70% Total Ground Cover (Litter, Rock, and Basal Veg Cover)	50% or More of Seeded Species Present	No Single Species With >45% Relative Foliar Cover	PASS/FAIL
1	FAIL	FAIL	PASS	PASS	FAIL
2	FAIL	PASS	FAIL	FAIL	FAIL
3	FAIL	PASS	PASS	PASS	FAIL
4	PASS	FAIL	PASS	PASS	FAIL
5	PASS	PASS	PASS	PASS	PASS
6	PASS	PASS	PASS	PASS	PASS
7	PASS	FAIL	FAIL	PASS	FAIL
8	PASS	FAIL	FAIL	PASS	FAIL
9	PASS	PASS	FAIL	FAIL	FAIL
10	PASS	PASS	PASS	PASS	PASS
11	FAIL	PASS	FAIL	PASS	FAIL
12	PASS	FAIL	FAIL	PASS	FAIL
13	PASS	PASS	PASS	FAIL	FAIL
14	PASS	FAIL	PASS	PASS	FAIL
15	PASS	FAIL	FAIL	PASS	FAIL
16	PASS	FAIL	FAIL	PASS	FAIL
17	PASS	FAIL	FAIL	PASS	FAIL
18	PASS	PASS	FAIL	PASS	FAIL
19	PASS	PASS	PASS	PASS	PASS
20	FAIL	FAIL	FAIL	PASS	FAIL
21	PASS	FAIL	PASS	PASS	FAIL
22	PASS	FAIL	PASS	PASS	FAIL
23	FAIL	FAIL	FAIL	FAIL	FAIL
24	PASS	FAIL	PASS	FAIL	FAIL
25	PASS	FAIL	PASS	PASS	FAIL
26	PASS	PASS	PASS	FAIL	FAIL
27	PASS	PASS	PASS	FAIL	FAIL
28	PASS	FAIL	PASS	PASS	FAIL
29	PASS	FAIL	PASS	PASS	FAIL
30	PASS	FAIL	PASS	PASS	FAIL
31	PASS	PASS	PASS	PASS	PASS
32	PASS	PASS	PASS	PASS	PASS
33	PASS	FAIL	PASS	PASS	FAIL
34	PASS	PASS	FAIL	FAIL	FAIL
35	PASS	FAIL	PASS	PASS	FAIL
36	PASS	FAIL	FAIL	PASS	FAIL
37	PASS	FAIL	PASS	PASS	FAIL
38	PASS	FAIL	PASS	PASS	FAIL
39	PASS	PASS	PASS	PASS	PASS
40	PASS	PASS	FAIL	FAIL	FAIL
41	PASS	PASS	FAIL	FAIL	FAIL
42	PASS	FAIL	PASS	FAIL	FAIL
43	FAIL	PASS	PASS	FAIL	FAIL
44	PASS	PASS	PASS	PASS	PASS
45	PASS	PASS	FAIL	PASS	FAIL
46	PASS	PASS	PASS	PASS	PASS
47	PASS	PASS	PASS	PASS	PASS
48	PASS	FAIL	PASS	PASS	FAIL
49	PASS	PASS	PASS	PASS	PASS
50	PASS	PASS	PASS	FAIL	FAIL
51	PASS	PASS	PASS	PASS	PASS
52	PASS	PASS	PASS	FAIL	FAIL
53	PASS	PASS	FAIL	FAIL	FAIL
54	PASS	PASS	PASS	PASS	PASS
55	PASS	FAIL	PASS	PASS	FAIL
56	PASS	FAIL	PASS	PASS	FAIL
% Passing	88	52	68	73	23

Shaded cells indicate success criteria was met in 2008.

Table 10. Revegetation Location Information Table

Location	Original Revegetation Date	Seed Mix*	Original Erosion Control	Additional Revegetation Effort Date	Amendments Added	New Erosion Control
1	Fall 2007	M	Flexterra		Biosol, Mycorrhizal Inoculent	
2	Summer 2004	X	Erosion Matting	Fall 2007	soil (from 991 slump), Biosol, Mycorrhizal Inoculent	Flexterra
3	Summer 2004	X	Erosion Matting	Fall 2007	soil (from 991 slump), Biosol, Mycorrhizal Inoculent	Flexterra
4	Spring 2007	X	Flexterra		Compost, Biosol, Mycorrhizal Inoculent	
5	Spring 2007	X	Flexterra		Compost, Biosol, Mycorrhizal Inoculent	
6	Spring 2007	X	Flexterra		Compost, Biosol, Mycorrhizal Inoculent	
7	Summer/Fall 2005	X	Crimped Straw	Spring 2007	Compost, Biosol, Mycorrhizal Inoculent	Flexterra
8	Summer/Fall 2005	X	Crimped Straw	Spring 2007	Compost, Biosol, Mycorrhizal Inoculent	Flexterra
9	Summer/Fall 2005	X	Flexterra/Crimped Straw	Spring 2007	Compost, Biosol, Mycorrhizal Inoculent	Flexterra
10	Spring 2007	X	Flexterra		Compost, Biosol, Mycorrhizal Inoculent	
11	Spring 2007	M	Flexterra		Compost, Biosol, Mycorrhizal Inoculent	
12	Summer/Fall 2005	X	Crimped Straw	Spring 2007	Compost, Biosol, Mycorrhizal Inoculent	Flexterra
13	Summer/Fall 2005	X	Crimped Straw	Spring 2007	Compost, Biosol, Mycorrhizal Inoculent	Flexterra
14	Summer 2005	X	Flexterra	Spring 2007	Compost, Biosol, Mycorrhizal Inoculent	Flexterra
15	Spring 2005	M	Crimped Straw	Spring 2007	Compost, Biosol, Mycorrhizal Inoculent	Flexterra
16	Spring 2005	X	Crimped Straw	Spring 2007	Compost, Biosol, Mycorrhizal Inoculent	Flexterra
17	Summer 2005	X	Flexterra	Spring 2007	Compost, Biosol, Mycorrhizal Inoculent	Flexterra
18	Summer 2005	X	Flexterra	Spring 2007	Compost, Biosol, Mycorrhizal Inoculent	Flexterra
19	Summer/Fall 2005	X	Crimped Straw	Fall 2007	Compost, Sustane, Mycorrhizal Inoculent	Flexterra
20	Summer/Fall 2005	X	Crimped Straw	Fall 2007	Compost, Sustane, Mycorrhizal Inoculent	Flexterra
21	Summer/Fall 2005	X1	Flexterra/Crimped Straw			
22	Spring 2004	X	Hydromulch			
23	Summer/Fall 2005	X	Crimped Straw	Summer/Fall 2007	Compost, Sustane, Mycorrhizal Inoculent	Flexterra
24	Summer/Fall 2005	X	Crimped Straw			
25	Summer/Fall 2005	X	Crimped Straw			
26	Spring 2005	M	Erosion Matting			
27	Spring 2003	X	Crimped Straw			
28	Spring 2005	X	Crimped Straw/Erosion Matting			
29	Spring 2005	M	Crimped Straw/Erosion Matting			
30	Summer 2005	X	Flexterra			
31	Summer 2004	X	Erosion Matting			
32	Summer 2004	M	Erosion Matting			
33	Summer 2005	X	Flexterra			
34	Summer 2002	X2	Hydromulch			
35	Summer 2005	X	Flexterra/Hydromulch			
36	Fall 2004	M	Erosion Matting			
37	Summer/Fall 2005	X	Crimped Straw/Flexterra			
38	Summer/Fall 2005	X	Hydromulch			
39	Summer 2005	M	Straw/Flexterra/Erosion Matting			
40	Summer/Fall 2005	X	Crimped Straw			
41	Spring 2002	X2	Hydromulch		Topsoil (12")	
42	Summer/Fall 2005	X	Hydromulch			
43	Summer 2005	M	Crimped Straw	Fall 2007	Compost, Sustane, Mycorrhizal Inoculent	Flexterra
44	Summer/Fall 2005	X	Crimped Straw	Spring 2007	Compost, Biosol, Mycorrhizal Inoculent	Flexterra
45	Summer/Fall 2005	X	Crimped Straw	Spring 2007	Compost, Biosol, Mycorrhizal Inoculent	Flexterra
46	Summer 2005	X	Crimped Straw			
47	Summer 2005	X	Flexterra/Hydromulch			
48	Summer 2005	X	Flexterra			
49	Spring 2005	X	Flexterra			
50	Spring 2005	X3	Hydromulch/Erosion Matting			
51	Spring 2005	X3	Hydromulch/Erosion Matting			
52	Spring 2005	M	Erosion Matting			
53	Winter 2003	M	Hydromulch			
54	Winter 2003	M	Hydromulch			
55	Summer 2005	M	Crimped Straw/Flexterra			
56	Summer/Fall 2005	X	Crimped Straw/Hydromulch			

* See Table 2 for specific species in seed mix.

Table 11. Basal Cover Summary at Revegetation Locations 2008

Location	Basal Vegetation Cover (%)	Litter Cover (%)	Rock Cover (%)	Total Ground Cover (%)*	Bare Ground (%)
1	2.5	43.4	7.5	53.4	46.6
2	2.5	70.6	9.4	82.5	17.5
3	2.5	77.5	15.7	95.7	4.3
4	6.9	26.9	35.6	69.4	30.6
5	3.8	40.5	40.4	84.6	15.4
6	6.9	31.1	38.8	76.8	23.3
7	11.9	19.9	20.0	51.8	48.3
8	4.4	31.8	14.1	50.3	49.8
9	7.5	38.0	33.0	78.5	21.5
10	5.0	47.5	33.5	86.0	14.0
11	2.5	45.5	28.5	76.5	23.5
12	11.8	36.4	15.4	63.5	36.5
13	10.0	41.9	24.8	76.6	23.4
14	6.7	32.8	15.7	55.2	44.8
15	14.8	25.1	5.6	45.5	54.5
16	12.3	31.6	12.1	56.0	44.0
17	2.5	37.2	22.3	62.0	38.0
18	5.0	45.3	26.3	76.7	23.3
19	5.6	52.9	11.8	70.3	29.8
20	5.0	54.6	10.0	69.6	30.4
21	4.9	11.8	41.8	58.5	41.5
22	18.5	25.0	22.8	66.3	33.8
23	3.0	20.3	10.0	33.3	66.8
24	7.9	15.0	41.3	64.2	35.8
25	10.3	22.5	28.7	61.4	38.6
26	8.8	42.8	24.0	75.5	24.5
27	5.0	71.3	12.0	88.3	11.7
28	8.9	26.3	10.2	45.3	54.7
29	17.0	40.6	8.0	65.6	34.4
30	11.3	22.9	24.9	59.0	41.0
31	13.5	63.8	14.6	91.9	8.1
32	12.8	63.1	8.8	84.6	15.4
33	15.4	22.3	28.5	66.1	33.9
34	18.3	54.5	10.5	83.3	16.8
35	12.4	13.0	41.7	67.1	32.9
36	13.5	38.0	8.8	60.3	39.8
37	11.0	17.8	40.3	69.1	30.9
38	6.3	6.3	45.0	57.5	42.5
39	5.8	60.3	16.6	82.7	17.3
40	15.0	12.5	52.0	79.5	20.5
41	12.5	81.0	5.0	98.5	1.5
42	12.5	12.5	38.0	63.0	37.0
43	3.8	61.9	16.8	82.4	17.6
44	9.4	60.9	19.4	89.6	10.4
45	5.0	52.3	25.8	83.0	17.0
46	7.5	37.0	37.8	82.3	17.8
47	19.3	22.8	54.3	96.3	3.8
48	5.0	26.5	29.0	60.5	39.5
49	3.8	11.3	57.0	72.0	28.0
50	14.2	72.8	21.0	108.0	0.0
51	13.3	44.5	33.7	91.5	8.5
52	3.8	65.3	25.0	94.0	6.0
53	24.0	85.5	2.0	111.5	0.0
54	24.5	88.0	4.0	116.5	0.0
55	11.2	34.2	11.8	57.1	42.9
56	7.4	21.7	33.0	62.1	37.9
Grand Mean	9.4	40.3	23.6	73.4	27.3

* Numbers greater than 100 are an artifact of the sampling method using a cover class system and midpoints for analysis.

The Total Ground Cover value is the sum of the Basal Vegetation Cover, Litter Cover, and Rock Cover.

Bare Ground Cover is a calculated value: 100% - Total Ground Cover. Negative values equal 0%.

Shaded cells mean the success criteria was met in 2008.