

Appendix 2. Canopy cover of plants in plots in the potential Rochelle Hills Research Natural Area.

In all of the tables in this appendix, the cover values for species are midpoints of the following cover classes:

<u>Cover Value</u>	<u>Range of Canopy Cover</u>
1	<1%
3	1% - 5%
10	5% - 15%
20	15% - 25%
30	25% - 35%
40	35% - 45%
50	45% - 55%
60	55% - 65%
70	65% - 75%
80	75% - 85%
90	85% - 95%
97	95% - 100%

Table 2-1. Canopy cover data from sample plots in the potential Rochelle Hills RNA. See the first page of Appendix 2 for a description of cover values.

Species	Plot/Association*										
	1 Andsco- Boucur	8 Andsco- Boucur	2a Elyspi- Poasec	3 Elyspi- Poasec	5 Elyspi- Poasec	7 Elyspi- Poasec	9 Elyspi- Poasec	4 Pinpon/ Elyspi	10 Pinpon- Junsco/ Elyspi	12 Pinpon/ Elyspi	15 Pinpon/ Elyspi
TREES											
Juniperus scopulorum	1	1		1				1	1	1	2
Pinus ponderosa		1			1			10	30	20	10
Pinus ponderosa seedling	1										
DWARF SHRUBS											
Artemisia tridentata var. wyomingensis					1			1		1	1
Chrysothamnus nauseosus var. oreophilus								1	1	1	1
Rhus trilobata	1										
Ribes cereum	1	1	1		1						
GRAMINOIDS											
Agropyron cristatum			20	60			1		1		
Andropogon scoparius	30	40	3					1		3	20
Aristida purpurea var. fendleriana	1			1		3	1				1
Bouteloua gracilis	1	3		1		10	20			1	10
Bromus japonicus			1	40			3				

96 G1 Roch Hill
Plot -

Table 2-1 (continued). Canopy cover data from sample plots in the potential Rochelle Hills RNA.

	Plot/Association*										
	1 Andsco- Boucur	8 Andsco- Boucur	2a Elyspi- Poasec	3 Elyspi- Poasec	5 Elyspi- Poasec	7 Elyspi- Poasec	9 Elyspi- Poasec	4 Pinpon/ Elyspi	10 Pinpon- Junsco/ Elyspi	12 Pinpon/ Elyspi	15 Pinpon/ Elyspi
<i>Bromus tectorum</i>					20	1	3	1	1		
<i>Calamovilfa longifolia</i>										1	1
<i>Carex filifolia</i>	1	1				10	1				3
<i>Carex pensylvanica</i>	3		3				1			1	
<i>Elymus hispidus</i>	1		10				1				
<i>Elymus smithii</i>								3	3	1	
<i>Elymus spicatus</i>	30	20	10	10	20	30	20	3	10	10	1
<i>Festuca octoflora</i>			1	10		3	3			1	1
<i>Koeleria macrantha</i>	10	3	3	10		3	20		1	1	3
<i>Muhlenbergia richardsonis</i>	1										1
<i>Poa secunda</i>	1	1	10	30		3	10	1	1	3	
<i>Stipa comata</i>	3					1	1				
<i>Stipa viridula</i>	1										
FORBS											
<i>Achillea millefolium</i>	1									1	
<i>Antennaria microphyllum</i>	1	1								1	
<i>Arenaria hookeri</i>		1						1		1	
<i>Artemisia frigida</i>	3	3	1	1	1	3	3		1	1	1
<i>Artemisia ludoviciana</i>			1					1		1	
<i>Aster falcatus</i>					1	1	1	1		1	
<i>Besseyia sp.</i>	1										

Table 2-1 (continued). Canopy cover data from sample plots in the potential Rochelle Hills RNA.

	Plot/Association*										
	1 Andsco- Boucur	8 Andsco- Boucur	2a Elyspi- Poasec	3 Elyspi- Poasec	5 Elyspi- Poasec	7 Elyspi- Poasec	9 Elyspi- Poasec	4 Pinpon/ Elyspi	10 Pinpon- Junsco/ Elyspi	12 Pinpon/ Elyspi	15 Pinpon/ Elyspi
<i>Brickelia eupatorioides</i> var. <i>corymbulosa</i>					3						
<i>Cerastium arvense</i>			3	1			1				
<i>Cirsium pulcherrimum</i> ?	1				1		1				
<i>Collomia linearis</i>											
<i>Cryptantha</i> sp.		1									
<i>Dalea</i> sp.	1		1					1			1
<i>Erigeron</i> sp.		1								1	
<i>Lappula</i> sp.				1							
<i>Geum triflorum</i>							1				
<i>Grindelia squarrosa</i>				1	1	1	1	1		1	
<i>Gutierrezia sarothrae</i>	10	3		1		3	3	3	1	1	1
<i>Haplopappus nuttallii</i>		1								1	
<i>Haplopappus spinulosus</i>	1	1		1			1				
<i>Heterotheca villosa</i>	3	1	1	1		3	3	3	1	1	1
<i>Hymenopappus</i> sp.						1		1			
<i>Lactuca serriola</i>					1						
<i>Leptodactylon pungens</i>	1	1	1		1			1			
<i>Liatris punctata</i>	1		1	1			1	1		1	1
<i>Lupinus pusillus</i>					1						
<i>Lygodesmia juncea</i>	1					1					
<i>Machaeranthera canescens</i>				1	1	1		1	1		
<i>Melilotus officinalis</i>								1	1		
<i>Mentzielia laevicaulis</i>					1						

Table 2-1 (continued). Canopy cover data from sample plots in the potential Rochelle Hills RNA.

	Plot/Association*										
	1	8	2a	3	5	7	9	4	10	12	15
	Andsco- Boucur	Andsco- Boucur	Elyspi- Poasec	Elyspi- Poasec	Elyspi- Poasec	Elyspi- Poasec	Elyspi- Poasec	Pinpon/ Elyspi	Pinpon- Junsco/ Elyspi	Pinpon/ Elyspi	Pinpon/ Elysp
<i>Opuntia polyacantha</i>			1				1	1			1
<i>Pediomelum argophyllum</i>	1	1					1	1			1
<i>Solidago missouriensis</i> var. <i>fasciculata</i>				1			1	1	1	1	
<i>Solidago</i> sp.	1		1								
<i>Thermopsis</i> sp.										3	1
<i>Tragopogon dubius</i>				1	1						
<i>Yucca glauca</i>		1						1			3
FERNS & ALLIES											
<i>Cystopteris</i> sp.	1		1	1							
<i>Selaginella densa</i>	1						1				
GROUND COVER											
Bare ground	10	19		30	5	15			47	60	20
Gravel	28	45		10	45	40			20	10	55
Rock	15	25		15	35	35			10	5	15
Bedrock					10						1
Litter	40	7		38	10	10			20	22	5
Wood	1	1			3				1	1	
Lichen, bryophyte	1			1						1	
Basal vegetation	5	3		6	2	3			2	2	5

Table 2-1 (continued). Canopy cover data from sample plots in the potential Rochelle Hills RNA.

***Association acronyms**

Andsco-Boucur = Little bluestem/sideoats grama association

Elyspi-Poasec = Bluebunch wheatgrass/Sandberg bluegrass association

Pinpon/Elyspi = Ponderosa pine/bluebunch wheatgrass association

Pinpon-Junsco/Elyspi = Ponderosa pine-Rocky Mountain juniper/bluebunch wheatgrass association

Notes

Plot 1: 10 m x 10 m, northwest-facing slope

Plot 8: 5 m x 10 m, west-facing slope, adjacent to plot 7

Plot 2a: 5 m x 20 m, in concavity on east-northeast-facing slope

Plot 3: 10 m x 20 m, in shallow alcove on east-facing slope; substrate sandstone w/ scoria boulders

Plot 5: 10 m x 10 m, upper part of southeast-facing slope

Plot 7: 5 m x 40 m, west-facing, 25-degree slope on scoria

Plot 9: 10 m x 20 m, midway up north-facing, 20 degree slope

Plot 4: 20 m x 40 m, midway up 40-degree, unburned, southeast-facing slope; substrate shale & sandstone with scoria

Plot 10: 20 m x 20 m, north-facing ravine on sandstone bedrock with shale & scoria colluvium; ground fire in 1988?

Plot 12: 20 m x 50 m, on slopes & in gulleys of north-facing alcove; sandy substrate

Plot 15: 10 m x 20 m, upper 1/2 of 20-degree, west-facing slope; sandstone bedrock with scoria colluvium

Table 2-2. Canopy cover in sample plots in the potential Rochelle Hills RNA. See the first page of Appendix 2 for a description of cover values.

Species	Plot/Association*						
	17 Bougra Elysmi	6 Sticom- Bougra	16 Sticom- Elysmi	11 Callon- Sticom	13 Callon- Elysmi	14 Callon- Elysmi	2 Elysmi- Stivir
	Cover						
TREES							
<i>Juniperus scopulorum</i>				3			
DWARF SHRUBS							
<i>Artemisia cana</i> var. <i>cana</i>	1		1	1	10	1	
<i>Artemisia tridentata</i> var. <i>wyomingensis</i>	3		1	3	10	10	
<i>Atriplex canescens</i>				3			
<i>Chrysothamnus nauseosus</i> var. <i>oreophilus</i>	1			1			
<i>Ribes cereum</i>							1
<i>Symphoricarpos</i> sp.							1
GRAMINOIDS							
<i>Agropyron cristatum</i>				3			1
<i>Andropogon scoparius</i>		1		1		1	
<i>Aristida purpurea</i> var. <i>fendleriana</i>	1		1	1		1	
<i>Bouteloua gracilis</i>	40	3	40	10		1	
<i>Bromus japonicus</i>	3			10	10	40	1
<i>Bromus tectorum</i>		90					
<i>Calamovilfa longifolia</i>			1	30	20	10	
<i>Carex filifolia</i>	1	3					
<i>Carex pensylvanica</i>						10	
** <i>Carex</i> , Mdw Cr							1
<i>Carex nebrascensis</i>							1
<i>Elymus hispidus</i>							30
<i>Elymus smithii</i>	20	10	3	30	40	3	1
<i>Elymus spicatus</i>			1				
<i>Festuca octoflora</i>	10	3	1	1		3	
** <i>Juncus</i> , Mdw Cr							1
<i>Koeleria macrantha</i>	20		1	3	3		
<i>Muhlenbergia cuspidata</i>							3

Table 2-2 (continued). Canopy cover in sample plots in the potential Rochelle Hills RNA.

	Plot/Association*						
	17 Bougra Elysmi	6 Sticom- Bougra	16 Sticom- Elysmi	11 Callon- Sticom	13 Callon- Elysmi	14 Callon- Elysmi	2 Elysmi- Stivir
<i>Phleum pratense</i>							1
<i>Poa pratensis</i>					3		30
<i>Poa secunda</i>	10		1	10	10	20	3
<i>Sporobolus airoides</i>	1						
<i>Stipa comata</i>		10	10	3		3	
<i>Stipa viridula</i>							1
FORBS							
<i>Achillea millefolium</i>				1	3	1	1
<i>Antennaria microphyllum</i>						1	
<i>Arenaria hookeri</i>	1						
<i>Artemisia frigida</i>	1	1	1	3		1	1
<i>Artemisia ludoviciana</i>							1
<i>Aster falcatus</i>		1		1	1		
<i>Cirsium pulcherrimum?</i>		1					
<i>Comandra umbellata</i>	1		1	1			
<i>Conyza canadensis</i>				1			
<i>Dalea sp.</i>	1						
<i>Delphinium sp.</i>				1		1	
<i>Filago arvensis</i>				1		1	
<i>Grindelia squarrosa</i>	1		1	1	1		
<i>Gutierrezia sarothrae</i>	1		1	3	1	1	
<i>Haplopappus nuttallii</i>							
<i>Haplopappus spinulosus</i>	1					1	
<i>Heterotheca villosa</i>			1			1	1
<i>Hymenopappus sp.</i>	1						
<i>Lactuca serriola</i>				1			
<i>Liatris punctata</i>	1						
<i>Monarda fistulosa</i>							1
<i>Opuntia polyacantha</i>	1	1	1			1	
<i>Pediomelum argophyllum</i>	1					1	1
<i>Phlox hoodii</i>	3						
<i>Plantago patagonica</i>	3		1	10		1	
<i>Ratibida columnifera</i>							1

Table 2-2 (continued). Canopy cover in sample plots in the potential Rochelle Hills RNA.

	Plot/Association*						
	17 Bougra Elysmi	6 Sticom- Bougra	16 Sticom- Elysmi	11 Callon- Sticom	13 Callon- Elysmi	14 Callon- Elysmi	2 Elysmi- Stivir
<i>Solidago missouriensis</i> var. <i>fasciculata</i>				1			
<i>Solidago</i> sp.							1
<i>Sphaeralcea coccinea</i>			1				
<i>Thermopsis</i> sp.				1	3	1	
<i>Tragopogon dubius</i>	1			1	1	1	
<i>Yucca glauca</i>	1					1	
GROUND COVER							
Bare ground	75	3	57	70	35	19	3
Gravel	13		37	1			5
Rock	2	2	1	1			1
Bedrock							
Litter	6	85	2	20	60	75	85
Wood							1
Lichen, bryophyte	1						
Basal vegetation	4	10	3	5	5	6	5

***Association acronyms**

Bougra-Elysmi = Blue grama/western wheatgrass association

Sticom-Bougra = Needle-and-thread - blue grama association

Sticom-Elysmi = Needle-and-thread - western wheatgrass association

Callon-Elysmi = Prairie sandreed-western wheatgrass herbaceous vegetation

Elysmi-Stivir = Western wheatgrass/green needlegrass association

Notes

Plot 17: 10 m x 20 m, on broad ridge-top

Plot 6: 10 m x 10 m, on bench in gentle, south-facing slope

Plot 16: 5 m x 10 m, on west-facing slope with scoria colluvium over sandstone; on same side of valley and at same level as plot 12, above plot 15, and opposite plot 14

Plot 11: 10 m x 25 m, in gentle, northwest-facing, sandy draw

Plot 13: 5 m x 20 m, in north-facing draws with sandy-silty substrate

Plot 14: 10 m x 20 m, on 15-degree, east-facing slope on sandy substrate

Plot 2: 10 m x 10 m, in northwest-facing draw