

RED POINT - TREND STUDY NO. 16C-14-09

Vegetation Type: Chained, Seeded P-J

Range Type: Crucial Deer Winter, Substantial Elk Summer

NRCS Ecological Site Description: Semidesert Bouldery Loam (Shadscale), R034XY202UT

Land Ownership: SITLA

Elevation: 6,400 ft (1,951 m)

Aspect: Northeast

Slope: 6%-8%

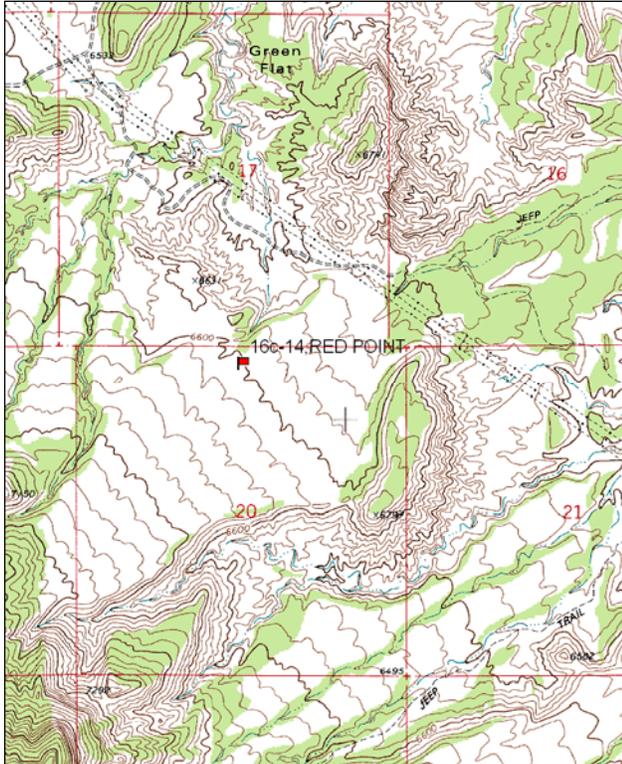
Transect bearing: 170 degrees magnetic.

Belt placement: line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft)

Directions:

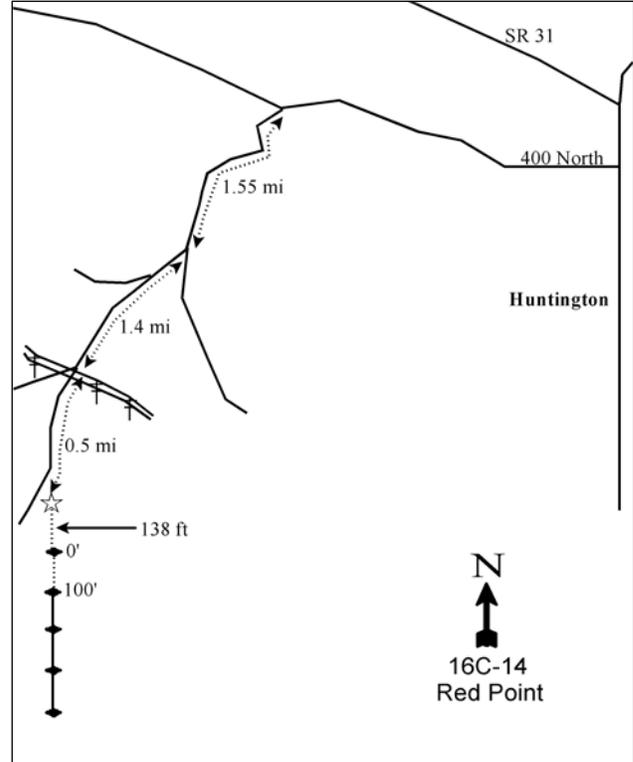
From Main Street in Huntington, go west on 400 North. Pass the old mill on the edge of town, cross the canal and continue 0.75 miles. Turn left off the old Huntington River road at a major fork. Proceed 1.55 miles, turn right, and go through a gate. Continue straight 0.2 miles to another fork and stay left for 1 mile. From here, stay straight, passing a trough, for an additional 0.2 miles to a two-way fork. Turn left and go 0.5 miles to a witness post on the left side of the road in the chaining. The frequency baseline start 138 feet south of the witness post. The 18" tall fencepost marking the 0-foot baseline has browse tag #9012 attached.

Map Name: Red Point



Township: 17S, Range: 8E, Section: 20

Diagrammatic Sketch:



GPS: NAD 83, UTM 12S 495833 E 4354008 N

RED POINT - TREND STUDY NO. 16C-14

Site Information

Site Description: This study is located in a chaining at the base of East Mountain, below the prominent Red Point. The 300 acre bench was chained and seeded in 1973. Overall declining trends and poor range condition observed in the West Huntington allotment led the BLM to recommend changes in grazing, eventually resulting in a 50% reduction in spring AUMs and closure of one pasture. As part of the Huntington Canyon winter range, deer and elk utilize the area in winter. Pellet group data has indicated moderate use by deer since 1999. The estimated elk use has steadily decreased from heavy use in 1999 to light use in 2009. Estimated cattle use has been minimal since 1999 (Table - Pellet Group Data). Twelve deer were observed near the site in 1999.

Browse: An even-aged stand of surviving pinyon pine (*Pinus edulis*) and Utah juniper (*Juniperus osteosperma*) has reestablished on the chained bench. Pinyon and juniper trees are dense on the site, though point-quarter density estimates have remained similar since 1994 (Table - Point-Quarter Tree Data). The pinyon and juniper populations do appear to be in-filling, however, as canopy cover of both species has steadily increased since 1999 (Table - Canopy Cover).

Green ephedra (*Ephedra verididis*), true mountain mahogany (*Cercocarpus montanus*), and Stansbury cliffrose (*Cowania mexicana* ssp. *stansburiana*) provide the bulk of the winter forage on this site, although none of these species are very abundant. Green ephedra provides the most preferred browse canopy cover on the site (Table -Canopy Cover). The ephedra population is mostly mature with low decadence, good vigor, and good recruitment. Utilization of ephedra has been mostly light with a few years of moderate use. The true mountain mahogany population is vibrant with a high proportion of young plants. Utilization of mahogany has been mostly moderate to heavy. Cliffrose was sampled for the first time in 2004 at low density and has displayed heavy use since). Other preferred browse species sampled on the site include slenderbush eriogonum (*Eriogonum microthecum*) and antelope bitterbrush (*Purshia tridentata*). Harriman yucca (*Yucca harrimaniae*) is the most abundant shrub on the site. The yuccas stiff, sharp leaves also protect the closely associated grasses from use (Table - Browse Characteristics).

Herbaceous Understory: The herbaceous understory is poor with a steady decrease in the sum of nested frequency and cover of perennial grasses since 1999. The predominant grass is crested wheatgrass (*Agropyron cristatum*) which provides almost all of the grass cover on the site. A few other perennial grass species are present, but occur rarely. Forbs are uncommon and provide very little cover or forage (Table - Herbaceous Trends).

Soil: The soil is a loam with a slightly alkaline pH. Phosphorus has limited availability for plant growth and development at 4.1 ppm (Tiedemann and Lopez 2004) (Table - Soil Analysis Data). There are large numbers of boulders, smaller rocks, and pavement on the surface that provide good protective ground cover. Bare ground cover has been moderately low due to the rock and pavement cover, as well as moderately good litter cover from large chaining debris (Table - Basic Cover). The soil erosion condition was classified as slight in 2004 due to pedestaling, litter movement, flow patterns and gullies, but was stable in 2009.

Trend Assessments

Browse:

- **1988 to 1994 - stable (0):** Differences in density may be related to the larger sample area used in 1994; therefore, trend was determined using other parameters. There was little change in any of the preferred browse species populations.

- **1994 to 1999 - stable (0):** There was little change in the density of true mountain mahogany or green ephedra. Both species populations remained healthy. There was a large decrease in the density of slenderbush eriogonum, and decadence and poor vigor both increased from 0% to 44%.
- **1999 to 2004 - stable (0):** There was a 32% increase in the density of green ephedra and density of slenderbush eriogonum nearly doubled. The decadence and vigor improved in the slenderbush eriogonum population. Stansbury cliffrose was sampled for the first time in 2004 at low density, though antelope bitterbrush was not sampled. Pinyon and juniper canopy cover increased substantially from 4% to 11%.
- **2004 to 2009 - stable (0):** The density of true mountain mahogany doubled from 120 plants/acre to 260 plant/acre, though slenderbush eriogonum decreased by 85% from 800 plants/acre to 120 plants/acre. Pinyon and juniper canopy cover continued to increase to 13%.

Grass:

- **1988 to 1994 - down (-2):** There was a 21% decrease in the sum of nested frequency of perennial grasses with a significant decrease in the nested frequency of intermediate wheatgrass (*Agropyron intermedium*) and bottlebrush squirreltail (*Sitanion hystrix*).
- **1994 to 1999 - stable (0):** There was little change in the sum of nested frequency of perennial grasses, though cover increased slightly from 10% to 12%.
- **1999 to 2004 - down (-2):** The sum of nested frequency of perennial grasses decreased by 62% and cover decreased to 2%. There was a significant decrease in the nested frequency of the dominant grass, crested wheatgrass.
- **2004 to 2009 - down (-2):** There was a 21% decrease in the sum of nested frequency of perennial grasses, though cover remained similar. Only two grass species, crested wheatgrass and Indian ricegrass (*Oryzopsis hymenoides*), were sampled on the site in 2004.

Forb:

- **1988 to 1994 - down (-2):** The sum of nested frequency of perennial forbs decreased by 57% with significant decreases in the nested frequency of the most common perennial forbs.
- **1994 to 1999 - down (-2):** There was a 50% decrease in the sum of nested frequency of perennial forbs and cover decreased to less than 1%. Forbs have become very rare on the site.
- **1999 to 2004 - stable (0):** Though there was an increase in the sum of nested frequency of perennial forbs, forbs are still very rare on the site and provide little cover.
- **2004 to 2009 - stable (0):** There was a substantial decrease in the sum of nested frequency of perennial forbs and they remain extremely rare on the site.

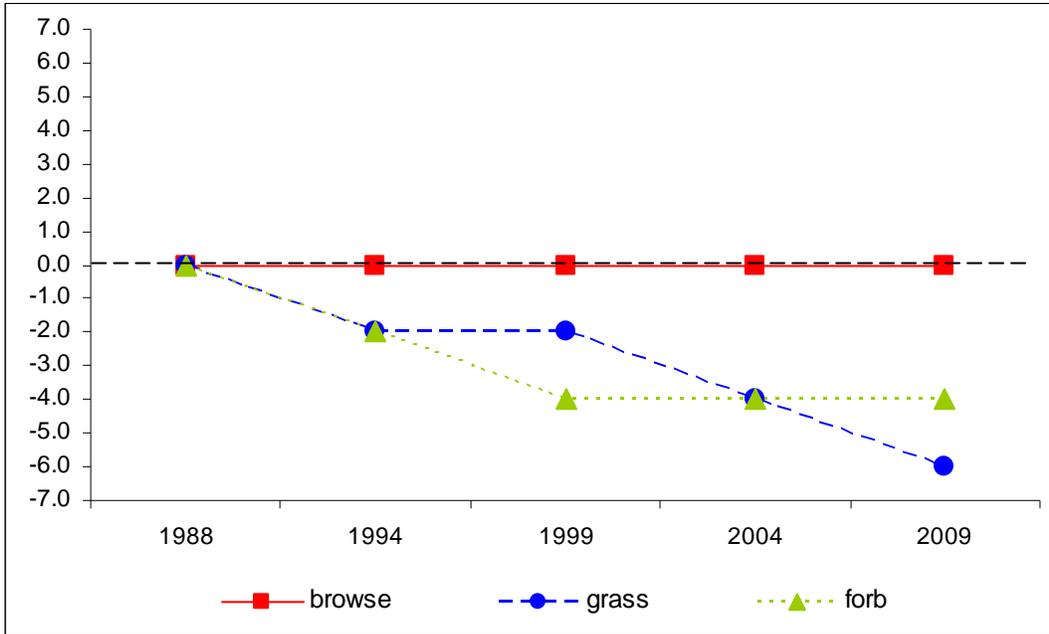
DEER DESIRABLE COMPONENTS INDEX - MID-LEVEL POTENTIAL SCALE --

Management unit 16C, study no: 14

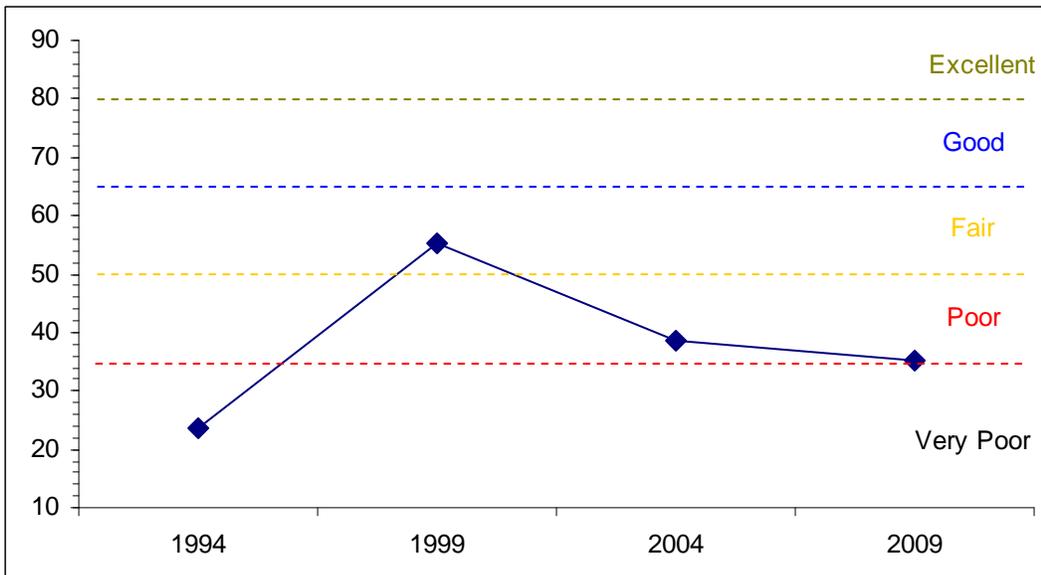
Year	Preferred Browse Cover	Preferred Browse Decadence	Preferred Browse Young	Perennial Grass Cover	Annual Grass Cover	Perennial Forb Cover	Noxious Weeds	Total Score	Ranking
94	2.3	0.0	0.0	19.1	0.0	2.3	0.0	23.8	Very Poor
99	7.6	14.9	8.0	23.8	0.0	1.0	0.0	55.3	Fair
04	9.7	13.5	9.3	4.6	0.0	1.4	0.0	38.5	Poor
09	8.7	13.2	9.1	3.8	0.0	0.4	0.0	35.3	Very Poor-Poor

Trend Summary

CUMULATIVE RANGE TREND ASSESSMENT--
Management unit 16C Study no: 14



DEER DESIRABLE COMPONENTS INDEX TREND, MID-LEVEL POTENTIAL
Management unit 16C, Study no: 14



HERBACEOUS TRENDS--

Management unit 16C, Study no: 14

Type	Species	Nested Frequency					Average Cover %			
		'88	'94	'99	'04	'09	'94	'99	'04	'09
G	Agropyron cristatum	b ₂₇₀	b ₂₆₅	b ₂₈₄	a ₈₉	a ₈₉	8.66	11.28	1.90	1.88
G	Agropyron intermedium	b ₅₀	a ₁	a ⁻	a ⁻	a ⁻	.00	-	-	-
G	Elymus junceus	a ₂	b ₁₆	ab ₉	ab ₁₁	a ⁻	.35	.25	.15	-
G	Oryzopsis hymenoides	b ₂₄	b ₂₅	ab ₂₀	ab ₂₀	ab ₆	.52	.37	.25	.03
G	Sitanion hystrix	45	a ₁	a ⁻	a ⁻	a ⁻	.00	-	-	-
Total for Annual Grasses		0	0	0	0	0	0	0	0	0
Total for Perennial Grasses		391	308	313	120	95	9.54	11.91	2.31	1.92
Total for Grasses		391	308	313	120	95	9.54	11.91	2.31	1.92
F	Arabis perennans	-	2	5	-	-	.00	.01	-	-
F	Caulanthus crassicaulis	-	1	-	-	-	.00	-	-	-
F	Chenopodium album (a)	-	1	-	-	-	.01	-	-	-
F	Chenopodium fremontii (a)	-	-	-	7	-	-	-	.02	-
F	Chenopodium leptophyllum(a)	-	-	-	4	-	-	-	.00	-
F	Cryptantha sp.	c ₇₄	b ₄₅	a ₁₇	a ₃	a ₆	.65	.35	.00	.01
F	Descurainia pinnata (a)	-	a ₁₀	a ₃	b ₂₁	a ₁	.02	.00	.21	.00
F	Erigeron sp.	4	-	-	-	-	-	-	-	-
F	Eriogonum alatum	-	-	-	-	-	.00	-	-	-
F	Eriogonum sp.	-	4	2	-	-	.03	.01	-	-
F	Euphorbia sp.	c ₁₃₇	b ₄₁	ab ₂₀	ab ₂₈	a ₁₃	.17	.04	.46	.06
F	Gilia sp. (a)	a ₄	a ⁻	a ⁻	b ₁₇	a ₁	-	-	.23	.00
F	Lappula occidentalis (a)	-	-	3	3	-	-	.00	.01	-
F	Lepidium montanum	2	-	-	-	1	-	-	-	.00
F	Leucelene ericoides	-	3	3	-	-	.15	.03	-	-
F	Machaeranthera canescens	-	-	-	3	-	-	-	.03	-
F	Machaeranthera grindelioides	-	1	-	-	-	.00	-	-	-
F	Malcolmia africana	-	-	-	1	-	-	-	.00	-
F	Medicago sativa	5	-	-	-	-	.00	-	-	-
F	Penstemon cyananthus	b ₃₂	a ₂	a ₂	a ₁₅	a ₁	.03	.00	.03	.01
F	Salsola iberica (a)	-	5	-	-	1	.01	-	-	.00
F	Schoenrambe linifolia	10	4	4	8	12	.02	.04	.04	.08
F	Taraxacum officinale	-	-	-	3	-	-	-	.00	-
F	Thelesperma subnudum	b ₁₅	b ₁₆	ab ₅	ab ₆	a ⁻	.08	.01	.04	-
F	Townsendia incana	6	6	5	16	6	.01	.01	.08	.01
F	Unknown forb-perennial	3	-	-	-	-	-	-	-	-
Total for Annual Forbs		4	16	6	52	3	0.03	0.00	0.48	0.01
Total for Perennial Forbs		288	125	63	83	39	1.17	0.51	0.71	0.18
Total for Forbs		292	141	69	135	42	1.21	0.52	1.19	0.20

Values with different subscript letters are significantly different at alpha = 0.10

BROWSE TRENDS--

Management unit 16C, Study no: 14

Type	Species	Strip Frequency				Average Cover %			
		'94	'99	'04	'09	'94	'99	'04	'09
B	Cercocarpus montanus	6	6	6	9	.63	1.28	1.29	1.08
B	Chrysothamnus nauseosus hololeucus	0	1	0	2	-	.00	-	.00
B	Cowania mexicana stansburiana	0	0	2	3	-	-	.00	.76
B	Ephedra viridis	15	15	20	15	1.08	4.49	6.15	4.77
B	Eriogonum microthecum	11	4	8	3	.00	.03	.03	.00
B	Juniperus osteosperma	0	6	7	3	.93	3.20	3.41	4.78
B	Opuntia sp.	1	0	0	0	.00	-	-	-
B	Pinus edulis	0	13	10	8	3.31	4.06	6.72	8.10
B	Purshia tridentata	1	3	0	0	.03	.00	-	-
B	Yucca harrimaniae	28	33	31	30	2.63	4.41	3.81	1.99
Total for Browse		62	81	84	73	8.63	17.49	21.44	21.49

CANOPY COVER, LINE INTERCEPT--

Management unit 16C, Study no: 14

Species	Percent Cover		
	'99	'04	'09
Cercocarpus montanus	-	3.00	2.76
Cowania mexicana stansburiana	-	.11	.41
Ephedra viridis	-	7.11	5.66
Juniperus osteosperma	2.00	3.25	4.06
Pinus edulis	2.20	7.71	9.23
Yucca harrimaniae	-	3.70	2.86

KEY BROWSE ANNUAL LEADER GROWTH--

Management unit 16C, Study no: 14

Species	Average leader growth (in)	
	'04	'09
Cercocarpus montanus	3.9	1.6
Cowania mexicana stansburiana	2.1	0.5

POINT-QUARTER TREE DATA--

Management unit 16C, Study no: 14

Species	Trees per Acre				Average diameter (in)		
	'94	'99	'04	'09	'99	'04	'09
Juniperus osteosperma	89	99	90	116	2.6	1.8	2.7
Pinus edulis	109	141	149	166	2.5	3.3	2.9

BASIC COVER--

Management unit 16C, Study no: 14

Cover Type	Average Cover %				
	'88	'94	'99	'04	'09
Vegetation	3.50	19.52	27.82	25.25	25.00
Rock	14.25	13.35	18.65	15.71	17.00
Pavement	7.00	4.23	8.49	9.98	15.58
Litter	37.25	41.90	34.64	38.46	43.42
Cryptogams	0	.02	1.52	0	1.16
Bare Ground	38.00	17.68	17.72	27.79	17.35

SOIL ANALYSIS DATA --

Management unit 16C, Study no: 14, Study Name: Red Point

Effective rooting depth (in)	pH	loam			%0M	PPM P	PPM K	ds/m
		%sand	%silt	%clay				
16.1	7.6	46.7	29.4	23.8	3.4	4.1	102.4	0.9

PELLET GROUP DATA--

Management unit 16C, Study no: 14

Type	Quadrat Frequency				Days use per acre (ha)		
	'94	'99	'04	'09	'99	'04	'09
Rabbit	30	56	38	26	-	-	-
Elk	35	40	25	7	55 (136)	38 (94)	11 (28)
Deer	19	33	16	11	25 (62)	31 (76)	29 (73)
Cattle	-	4	-	-	4 (11)	4 (11)	-

BROWSE CHARACTERISTICS--

Management unit 16C, Study no: 14

Year	Plants per Acre (excluding seedlings)	Age class distribution			Seedling (plants/acre)	Utilization		% poor vigor	Average Height Crown (in)
		% Young	% Mature	% Decadent		% moderate	% heavy		
Ceratoides lanata									
88	0	0	0	-	-	0	0	0	-/-
94	0	0	0	-	-	0	0	0	13/11
99	0	0	0	-	-	0	0	0	-/-
04	0	0	0	-	-	0	0	0	-/-
09	0	0	0	-	-	0	0	0	-/-
Cercocarpus montanus									
88	399	0	100	-	-	33	50	0	50/41
94	120	33	67	-	-	50	33	0	46/69
99	140	29	71	-	20	29	29	0	54/58
04	120	50	50	-	-	17	83	0	60/58
09	260	31	69	-	40	15	46	0	69/72

		Age class distribution					Utilization			
Year	Plants per Acre (excluding seedlings)	% Young	% Mature	% Decadent	Seedling (plants/acre)	% moderate	% heavy	% poor vigor	Average Height Crown (in)	
<i>Chrysothamnus nauseosus hololeucus</i>										
88	0	0	0	-	-	0	0	0	-/-	
94	0	0	0	-	-	0	0	0	9/10	
99	20	0	100	-	-	0	100	0	-/-	
04	0	0	0	-	-	0	0	0	13/8	
09	40	0	100	-	-	50	0	0	9/7	
<i>Cowania mexicana stansburiana</i>										
88	0	0	0	0	-	0	0	0	-/-	
94	0	0	0	0	-	0	0	0	-/-	
99	0	0	0	0	-	0	0	0	-/-	
04	40	0	50	50	-	0	100	50	28/34	
09	60	33	33	33	-	33	67	33	29/35	
<i>Ephedra viridis</i>										
88	865	54	46	0	-	85	8	0	24/30	
94	520	15	85	0	-	0	0	0	38/56	
99	500	12	88	0	-	52	4	0	37/54	
04	660	12	82	6	-	6	3	3	37/62	
09	620	13	84	3	-	0	0	3	39/61	
<i>Eriogonum microthecum</i>										
88	532	37	63	0	-	0	0	0	2/2	
94	1280	45	55	0	-	0	0	0	3/4	
99	320	44	13	44	20	0	38	44	2/3	
04	800	0	83	18	-	0	100	15	3/5	
09	120	33	67	0	-	0	0	0	1/2	
<i>Juniperus osteosperma</i>										
88	199	100	0	-	-	0	0	0	-/-	
94	0	0	0	-	-	0	0	0	-/-	
99	120	83	17	-	-	0	0	0	-/-	
04	140	71	29	-	-	14	0	0	-/-	
09	60	33	67	-	-	0	0	0	69/71	
<i>Opuntia sp.</i>										
88	0	0	0	0	-	0	0	0	-/-	
94	40	0	50	50	-	0	0	50	8/11	
99	0	0	0	0	-	0	0	0	-/-	
04	0	0	0	0	-	0	0	0	-/-	
09	0	0	0	0	-	0	0	0	-/-	
<i>Pinus edulis</i>										
88	399	100	0	0	-	0	0	0	-/-	
94	0	0	0	0	-	0	0	0	-/-	
99	260	38	62	0	-	0	0	8	23/26	
04	260	15	69	15	-	0	0	8	-/-	
09	160	13	75	13	-	0	0	13	70/73	

		Age class distribution			Utilization				
Year	Plants per Acre (excluding seedlings)	% Young	% Mature	% Decadent	Seedling (plants/acre)	% moderate	% heavy	% poor vigor	Average Height Crown (in)
<i>Purshia tridentata</i>									
88	66	100	0	0	-	0	0	0	-/-
94	20	0	100	0	-	0	0	0	19/20
99	160	13	75	13	-	0	25	0	22/29
04	0	0	0	0	-	0	0	0	14/28
09	0	0	0	0	-	0	0	0	-/-
<i>Yucca harrimaniae</i>									
88	2132	25	75	0	-	0	0	0	17/15
94	1680	0	100	0	-	0	0	2	14/21
99	2100	6	92	2	-	0	0	.95	14/18
04	2320	13	87	0	-	0	0	0	13/17
09	1480	8	84	8	-	0	0	9	13/18