

Trend Study 30-12-98

Study site name: Pintura Bench .

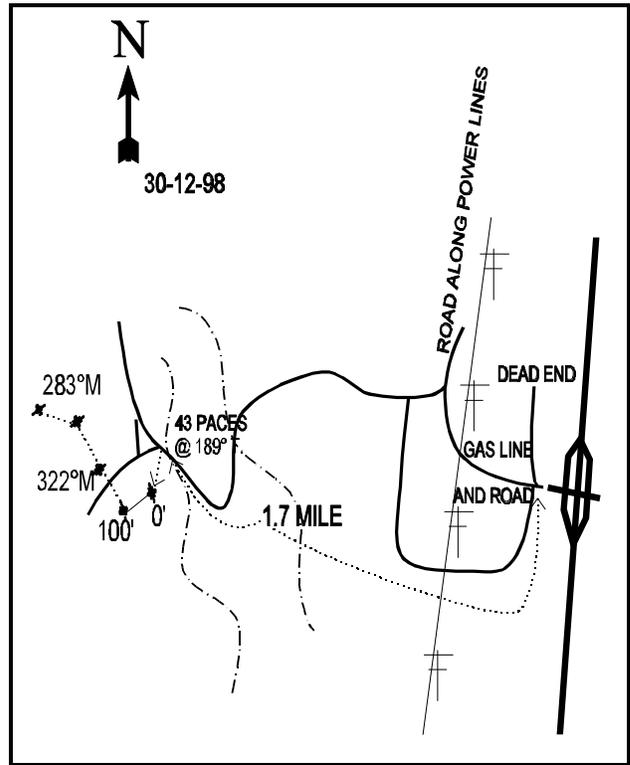
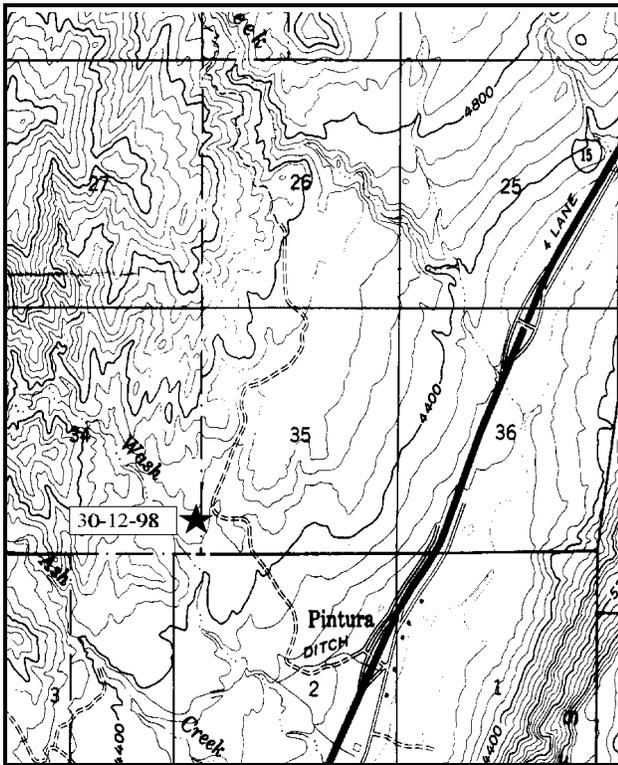
Range type: Mountain Brush .

Compass azimuth: frequency baseline 240 M degrees. (Line 2 & 3 322°M, line 4 283°)

Footmark (first frame placement) 5 feet. Frequency belt placement; line 1 (4 & 98ft), line 2 (56ft), line 3 (39ft), line 4 (65ft).

LOCATION DESCRIPTION

Take the Pintura exit (#31) off Interstate 15 between Cedar City and St. George. Proceed west on the dirt road for 1.7 miles, at which point you will pass over an intermittent streambed. From the intersection of the streambed and the road, walk 43 paces at a bearing of 189 degrees true, at which point the 0-foot baseline stake will be located. The study is marked by green steel "T" fence posts approximately 18 to 24 inches in height.



Map Name: New Harmony

Diagrammatic Sketch

Township 39S , Range 13W , Section 34

UTM 4135955.053 N, 297253.060 E

DISCUSSION

Trend Study No. 30-12 (50A-12)

The Pintura Bench study is on winter range located on an old 1960's chained and seeded juniper-pinyon area. Elevation of the study site is 4,800 feet. Terrain slopes gently (10% to 15%) to the east. It was a known concentration area for wintering deer, in which some used to migrate from the Zion unit by crossing the I-15 freeway. A new deer fence was constructed along the freeway in 1990 and 1991, which now prohibits such movement. According to Beal (1996), some mixing of the deer herds occurred between the adjacent Zion and East Pine Valley herd units before the fence was completed, but that no longer occurs. There are places where deer can still cross I-15 by way of overpasses and funnel fences between New Harmony and St. George. Pellet group data from 1998 show a low amount of deer use at 12 deer days use/acre. Cattle sign was also noted with 2 cow days use/acre.

Soils are moderately shallow and rocky with considerable amounts of bare soil and erosion pavement. Effective rooting depth (see methods) is estimated at 14 inches. Soil texture is a clay loam with a neutral pH (7.1). Phosphorus may be limiting to plant development at just 4.6 ppm, when 10 ppm is considered the minimum for normal plant development. The soil is extremely rocky throughout the profile. Calcium carbonate deposits occur on the surface of most of the rocks. Rock and pavement are also common on the surface where they currently provide 37% ground cover. Litter cover is fair and occurs mainly under tree and shrub canopies. Most of the chaining litter has decomposed with the passage of time. Erosion is light to moderate, primarily because of gentle terrain.

Density of desirable browse plants is rather low. The key species are mountain big sagebrush, Utah serviceberry, and desert ceanothus. Total density for these species is currently ('98) only 1,000 plants/acre. Utilization of sagebrush and desert ceanothus has been light to moderate since 1982, but Utah serviceberry displayed moderate and heavily use in 1982 and 1992. All plants sampled in 1998 appeared only lightly utilized. Vigor of these preferred shrubs is good and decadence is currently low. Other shrubs which provide some additional forage include: Stansbury cliffrose, green ephedra, bitterbrush, shrub live oak and slenderbush eriogonum.

The most numerous shrub is broom snakeweed which increased from 4,532 plants/acre in 1982 to 8,732 by 1992, a 48% increase. Age class evaluation indicated a dynamic expanding population with a biotic potential of 36% and young plants accounting for 91% of the population. However, by 1998 the population declined 51% and now has a similar density to that of 1982 (4,532 to 4,300 plants/acre). Age class analysis indicates a stable population with 92% of the stand consisting of mature plants.

Trees are increasing in size. Data from the point quarter method estimate 41 pinyon and 57 juniper trees/acre in 1992, the majority of which are over 4 feet in height. Point quarter data from 1998 estimate 63 singleleaf pinyon pine and 51 juniper trees/acre. Average basal diameter is 4 inches for pinyon and 4.5 inches for juniper. Most trees are now 8 to 10 feet in height.

Perennial grasses and forbs are sparse. Bottlebrush squirreltail, intermediate, and crested wheatgrass are occasionally present. Cheatgrass brome was very common in 1982, but analysis of photos and notes taken during the 1992 reading indicate that cheatgrass was not prevalent. Annual grasses and forbs were included in the 1998 sample. Cheatgrass and foxtail brome currently account for 99% of the grass cover on the site. These grasses occur in patches and are not particularly widespread. All grasses combined produce only 10% cover. No utilization of grasses was observed. Perennial forbs are slightly more common than perennial grasses. Skunk breadroot is the only perennial forb of any significance. It currently provides 85% of the meager forb cover (4%). Forbs, like grasses, are essentially ungrazed.

1982 APPARENT TREND ASSESSMENT

Range condition is poor and shows few signs of improvement. Over the long term, a small increase in forage production from the key species may be realized, but it is unlikely to be significant in the context of management. The increase of broom snakeweed and narrowleaf Yerba-santa is much more significant. Vegetative trend is stable or slightly declining. Soil trend is stable but at a low condition rating.

1992 TREND ASSESSMENT

This site is still in poor condition. The soil trend is down slightly. Even though bare ground declined from 33% to 18% since 1982, basal vegetative cover also declined, while pavement and rock cover combined doubled. Trend for browse is mixed. The key browse species, mountain big sagebrush and Utah serviceberry, have declined in numbers since the last reading. Percent decadency of Mountain big sagebrush has also increased from zero in 1982, to 67% in 1992. Desert ceanothus has increased in density 31% and has an age class structure of an expanding population. The increaser, broom snakeweed, has also increased significantly since 1982 and has a dynamic reproductive potential. Trend for browse is slightly down. Herbaceous plants are severely lacking. Quadrat frequency of perennial grasses and forbs has declined since 1982, indicating a downward trend.

TREND ASSESSMENT

soil - down slightly and in poor condition

browse - down slightly

herbaceous understory - down and in poor condition

1998 TREND ASSESSMENT

Trend for soil appears stable compared to 1992. Percent bare ground declined slightly but litter cover also declined and rock/pavement cover increased slightly. Some localized erosion is still occurring on the site, but the gentle terrain combined with the protective ground cover limit its effects. Trend for browse is up slightly for the key species, serviceberry, mountain big sagebrush, and desert ceanothus. Density estimates have changed slightly, yet some of the difference may be due to the larger sample used in 1998. Overall however, vigor is good, utilization lighter, and percent decadence lower. Density of broom snakeweed declined 51% since 1992, but rabbitbrush increased 88% from 332 to 2,680 plants/acre. Trend for the herbaceous understory is down and in very poor condition. Quadrat frequency of perennial grasses is just 5%, but sum of nested frequency is similar to 1992 estimates. Sum of nested frequency of perennial forbs declined 67% and both of the most abundant forbs, fendler Euphorbia and skunk breadroot, declined significantly in nested frequency.

TREND ASSESSMENT

soil - stable

browse - up slightly

herbaceous understory - down and in poor condition

HERBACEOUS TRENDS --
Herd unit 30 , Study no: 12

Type	Species	Nested Frequency		Quadrat Frequency			Average Cover %
		'02	'08	'82	'92	'98	
G	Agropyron cristatum	2	4	2	1	1	.00
G	Agropyron intermedium	-	1	8	-	1	.00
G	Bromus rubens (a)	-	92	-	-	35	1.45
G	Bromus tectorum (a)	-	306	-	-	92	8.21
G	Poa spp.	3	-	-	2	-	-
G	Sitanion hystrix	9	8	22	7	3	.04
G	Stipa lettermani	-	-	1	-	-	-
G	Vulpia octoflora (a)	-	36	-	-	13	.09
Total for Annual Grasses		0	434	0	0	140	9.75
Total for Perennial Grasses		14	13	33	10	5	0.05
Total for Grasses		14	447	33	10	145	9.80
F	Astragalus spp.	-	2	-	-	1	.03
F	Calochortus nuttallii	-	3	-	-	2	.01
F	Chaenactis douglasii	1	-	-	1	-	-
F	Cryptantha spp.	-	-	-	-	-	-
F	Descurainia pinnata (a)	-	27	-	-	12	.13
F	Draba spp. (a)	-	82	-	-	36	.36
F	Eriogonum cernuum (a)	-	2	-	-	1	.00
F	Euphorbia fendleri	16	*1	16	11	1	.00
F	Gilia spp. (a)	-	1	-	-	1	.00
F	Lepidium spp. (a)	-	8	-	-	3	.01
F	Melilotus officinalis	3	-	10	2	-	-
F	Microsteris gracilis (a)	-	1	-	-	1	.00
F	Pediomelium mephiticum	23	*8	-	18	5	3.52
F	Penstemon spp.	6	2	1	3	1	.03
Total for Annual Forbs		0	121	0	0	54	0.52
Total for Perennial Forbs		49	16	27	35	10	3.60
Total for Forbs		49	137	27	35	64	4.13

* Indicates significant difference at % = 0.10 (annuals excluded)

BROWSE TRENDS --
Herd unit 30 , Study no: 12

Type	Species	Strip Frequency '98	Average Cover % '98
B	Amelanchier utahensis	4	1.48
B	Arctostaphylos patula	2	.63
B	Artemisia tridentata vaseyana	13	1.54
B	Ceanothus greggii	25	2.25
B	Chrysothamnus viscidiflorus	48	6.94
B	Cowania mexicana stansburiana	1	.56
B	Ephedra viridis	5	1.66
B	Eriodictyon angustifolium	0	-
B	Eriogonum microthecum	44	2.36
B	Gutierrezia sarothrae	52	2.57
B	Juniperus osteosperma	1	1.00
B	Pinus monophylla	7	3.13
B	Prunus fasciculata	0	-
B	Purshia tridentata	0	-
B	Quercus turbinella	8	2.82
B	Rhus trilobata trilobata	6	1.51
B	Yucca baccata	1	-
Total for Browse		217	28.52

CANOPY COVER --
Herd unit 30 , Study no: 12

Species	Percent Cover '98
Juniperus osteosperma	.60
Pinus monophylla	4

BASIC COVER --
Herd unit 30 , Study no: 12

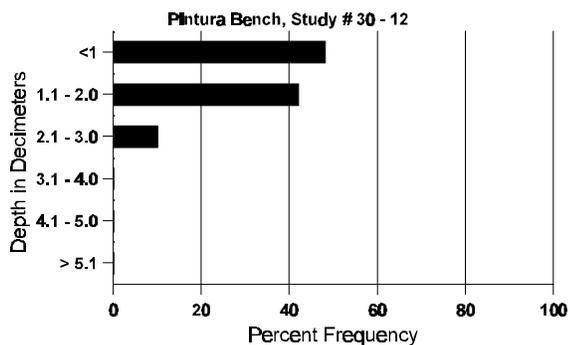
Cover Type	Nested Frequency '98	Average Cover %		
		'82	'92	'98
Vegetation	346	2.50	1.00	39.40
Rock	277	2.75	11.25	15.23
Pavement	327	11.75	22.25	21.93
Litter	381	49.75	47.25	39.86
Cryptogams	21	0	0	.09
Bare Ground	250	33.25	18.25	15.88

SOIL ANALYSIS DATA --

Herd Unit 30, Study # 12, Study Name: Pintura Bench

Effective rooting depth (inches)	Temp °F (depth)	pH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
14.0	49.4 (17.8)	7.1	42.0	29.4	28.6	3.5	4.6	76.8	.6

Stoniness Index



PELLET GROUP FREQUENCY --

Herd unit 30 , Study no: 12

Type	Quadrat Frequency '98
Rabbit	18
Deer	19

BROWSE CHARACTERISTICS --

Herd unit 30 , Study no: 12

A G R E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Amelanchier utahensis																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	92	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	98	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	92	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	98	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
M	82	-	2	2	-	-	-	-	-	-	4	-	-	-	266	28	30	4
	92	-	-	1	-	1	-	-	-	-	2	-	-	-	133	69	45	2
	98	5	-	-	-	-	-	-	-	-	2	3	-	-	100	64	61	5
		% Plants Showing	<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>						
		'82	50%			50%			00%			-50%						
		'92	50%			50%			00%			+ 5%						
		'98	00%			00%			00%									
Total Plants/Acre (excluding Dead & Seedlings)												'82	266	Dec:	-			
												'92	133		-			
												'98	140		-			
Arctostaphylos patula																		

A Y G R E	Form Class (No. of Plants)	Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4		1	2	
M	82	-	-	-	-	-	-	-	0
	92	-	-	-	-	-	-	-	0
	98	2	-	-	-	-	-	-	40
% Plants Showing		<u>Moderate Use</u>		<u>Heavy Use</u>		<u>Poor Vigor</u>		<u>%Change</u>	
	'82	00%		00%		00%			
	'92	00%		00%		00%			
	'98	00%		00%		00%			
Total Plants/Acre (excluding Dead & Seedlings)						'82	0	Dec:	-
						'92	0		-
						'98	40		-
<i>Artemisia tridentata vaseyana</i>									
S	82	8	-	-	-	-	-	-	8
	92	-	-	-	-	-	-	-	0
	98	-	-	-	-	-	-	-	0
Y	82	-	1	-	-	-	-	-	66
	92	-	1	-	-	-	-	-	66
	98	-	-	-	-	-	-	-	0
M	82	2	-	-	-	-	-	-	133
	92	-	-	-	-	-	-	-	0
	98	9	1	1	1	1	-	-	260
D	82	-	-	-	-	-	-	-	0
	92	-	2	-	-	-	-	-	133
	98	2	-	-	-	-	-	-	40
X	82	-	-	-	-	-	-	-	0
	92	-	-	-	-	-	-	-	0
	98	-	-	-	-	-	-	-	40
% Plants Showing		<u>Moderate Use</u>		<u>Heavy Use</u>		<u>Poor Vigor</u>		<u>%Change</u>	
	'82	33%		00%		00%		+ 0%	
	'92	100%		00%		00%		+34%	
	'98	13%		07%		00%			
Total Plants/Acre (excluding Dead & Seedlings)						'82	199	Dec:	0%
						'92	199		67%
						'98	300		13%

A Y G R E	Form Class (No. of Plants)	Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total								
		1	2	3	4		1	2									
Ceanothus greggii																	
S	82	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	92	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	98	1	-	-	2	-	-	3	-	6	-	-	-	120		6	
Y	82	2	-	-	-	-	-	-	-	2	-	-	-	133		2	
	92	-	-	-	1	1	-	-	-	2	-	-	-	133		2	
	98	2	-	-	1	-	-	-	-	3	-	-	-	60		3	
M	82	7	-	-	-	-	-	-	-	7	-	-	-	466	25	31	7
	92	-	3	2	-	4	-	-	-	9	-	-	-	600	32	44	9
	98	5	9	5	2	2	-	-	-	23	-	-	-	460	28	47	23
D	82	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	92	-	-	1	1	-	-	-	-	2	-	-	-	133		2	
	98	1	-	-	1	-	-	-	-	1	-	-	1	40		2	
% Plants Showing		<u>Moderate Use</u>		<u>Heavy Use</u>		<u>Poor Vigor</u>		<u>%Change</u>									
'82		00%		00%		00%		+31%									
'92		62%		23%		00%		-35%									
'98		39%		18%		04%											
Total Plants/Acre (excluding Dead & Seedlings)										'82	599	Dec:	0%				
										'92	866		15%				
										'98	560		7%				
Chrysothamnus viscidiflorus																	
S	82	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	92	12	-	-	-	-	-	-	-	12	-	-	-	800		12	
	98	7	-	-	-	-	-	-	-	7	-	-	-	140		7	
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	92	4	-	-	-	-	-	-	-	4	-	-	-	266		4	
	98	13	-	-	-	-	-	-	-	13	-	-	-	260		13	
M	82	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	92	-	-	-	1	-	-	-	-	1	-	-	-	66	9	5	1
	98	96	-	-	4	-	-	-	-	100	-	-	-	2000	17	28	100
D	82	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	92	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	98	20	1	-	-	-	-	-	-	14	-	-	7	420		21	
X	82	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	92	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	98	-	-	-	-	-	-	-	-	-	-	-	-	360		18	
% Plants Showing		<u>Moderate Use</u>		<u>Heavy Use</u>		<u>Poor Vigor</u>		<u>%Change</u>									
'82		00%		00%		00%											
'92		00%		00%		00%		+88%									
'98		.74%		00%		05%											
Total Plants/Acre (excluding Dead & Seedlings)										'82	0	Dec:	0%				
										'92	332		0%				
										'98	2680		16%				

A Y G R E	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total	
	1	2	3	4	5	6	7	8	9	1	2	3	4					
<i>Cowania mexicana stansburiana</i>																		
M	82	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	92	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	98	-	1	-	-	-	-	-	-	-	-	-	1	-	20	56	39	1
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			00%			00%										
'92		00%			00%			00%										
'98		100%			00%			100%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	0	Dec:	-			
												'92	0		-			
												'98	20		-			
<i>Ephedra viridis</i>																		
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	92	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	98	3	-	-	-	-	-	-	-	-	-	3	-	-	60			3
M	82	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	92	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	98	3	-	-	1	-	-	-	-	-	-	4	-	-	80	31	34	4
D	82	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	92	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	98	1	-	-	-	-	-	-	-	-	-	1	-	-	20			1
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			00%			00%										
'92		00%			00%			00%										
'98		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	0	Dec:	0%			
												'92	0		0%			
												'98	160		13%			
<i>Eriodictyon angustifolium</i>																		
S	82	13	-	-	-	-	-	-	-	-	13	-	-	-	866		13	
	92	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	82	10	-	-	-	-	-	-	-	-	10	-	-	-	666		10	
	92	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	82	14	-	-	-	-	-	-	-	-	14	-	-	-	933	20	17	14
	92	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			00%			00%										
'92		00%			00%			00%										
'98		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	1599	Dec:	-			
												'92	0		-			
												'98	0		-			

A Y G R E	Form Class (No. of Plants)	Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total						
		1	2	3	4									
<i>Eriogonum microthecum</i>														
S	82	-	-	-	-	-	-	-	-	-	-	0		0
	92	9	-	-	-	-	-	-	-	-	-	9		9
	98	1	-	-	-	-	-	1	-	-	-	2		2
Y	82	1	-	-	-	-	-	-	-	-	1			1
	92	5	1	-	-	-	-	-	-	-	6			6
	98	17	-	-	1	-	-	1	-	-	19			19
M	82	4	-	-	-	-	-	-	-	-	4		12 14	4
	92	3	2	-	-	1	-	-	-	1	7		10 10	7
	98	93	-	-	22	-	-	2	-	-	117		17 27	117
D	82	-	-	-	-	-	-	-	-	-	-			0
	92	-	2	-	1	-	1	-	-	-	4			4
	98	4	-	-	1	-	-	-	-	-	2			5
X	82	-	-	-	-	-	-	-	-	-	-			0
	92	-	-	-	-	-	-	-	-	-	-			0
	98	-	-	-	-	-	-	-	-	-	20			1
% Plants Showing		<u>Moderate Use</u>		<u>Heavy Use</u>		<u>Poor Vigor</u>				<u>%Change</u>				
'82		00%		00%		00%				+71%				
'92		35%		12%		00%				+60%				
'98		00%		00%		02%								
Total Plants/Acre (excluding Dead & Seedlings)										'82	332	Dec:	0%	
										'92	1132		23%	
										'98	2820		4%	
<i>Gutierrezia sarothrae</i>														
S	82	3	-	-	-	-	-	-	-	3				3
	92	73	-	-	-	-	-	-	-	73				73
	98	5	-	-	-	-	-	-	-	5				5
Y	82	26	-	-	-	-	-	-	-	26				26
	92	119	-	-	-	-	-	-	-	119				119
	98	16	-	-	1	-	-	1	-	18				18
M	82	41	-	-	-	-	-	-	-	41		11 11		41
	92	11	-	-	-	-	-	-	-	11		9 9		11
	98	195	-	-	-	1	-	1	-	197		8 10		197
D	82	1	-	-	-	-	-	-	-	1				1
	92	1	-	-	-	-	-	-	-	1				1
	98	-	-	-	-	-	-	-	-	-				0
X	82	-	-	-	-	-	-	-	-	-				0
	92	-	-	-	-	-	-	-	-	-				0
	98	-	-	-	-	-	-	-	-	-	80			4
% Plants Showing		<u>Moderate Use</u>		<u>Heavy Use</u>		<u>Poor Vigor</u>				<u>%Change</u>				
'82		00%		00%		00%				+48%				
'92		00%		00%		00%				-51%				
'98		.46%		00%		00%								
Total Plants/Acre (excluding Dead & Seedlings)										'82	4532	Dec:	1%	
										'92	8732		1%	
										'98	4300		0%	

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Juniperus osteosperma																		
M	82	1	-	-	-	-	-	-	-	-	1	-	-	-	66	67	74	1
	92	1	-	-	-	-	-	-	-	-	1	-	-	-	66	118	100	1
	98	-	-	-	1	-	-	-	-	-	1	-	-	-	20	-	-	1
X	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	92	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			00%			00%			+ 0%							
'92		00%			00%			00%			-70%							
'98		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	66	Dec:	-			
												'92	66		-			
												'98	20		-			
Pinus monophylla																		
Y	82	2	-	-	-	-	-	-	-	-	2	-	-	-	133			2
	92	-	1	-	-	-	-	-	-	-	1	-	-	-	66			1
	98	3	-	-	-	-	-	-	-	-	3	-	-	-	60			3
M	82	1	-	-	-	-	-	-	-	-	1	-	-	-	66	67	47	1
	92	2	-	-	-	-	-	-	-	-	2	-	-	-	133	82	68	2
	98	3	-	-	-	-	-	1	-	-	4	-	-	-	80	-	-	4
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			00%			00%			+ 0%							
'92		33%			00%			00%			-30%							
'98		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	199	Dec:	-			
												'92	199		-			
												'98	140		-			
Prunus fasciculata																		
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	92	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	0	43	69	0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			00%			00%										
'92		00%			00%			00%										
'98		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	0	Dec:	-			
												'92	0		-			
												'98	0		-			

A Y G R E	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
	1	2	3	4	5	6	7	8	9	1	2	3	4				
Purshia tridentata																	
M	82	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	92	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	98	-	-	-	-	-	-	-	-	-	-	-	-	0	26	42	0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>						
'82		00%			00%			00%									
'92		00%			00%			00%									
'98		00%			00%			00%									
Total Plants/Acre (excluding Dead & Seedlings)												'82	0	Dec:	-		
												'92	0		-		
												'98	0		-		
Quercus turbinella																	
S	82	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	92	3	-	-	1	-	-	-	-	-	-	-	-	266			4
	98	1	-	-	-	-	-	-	-	-	-	-	-	20			1
Y	82	1	-	-	-	-	-	-	-	-	-	-	-	66			1
	92	1	-	-	2	-	1	-	-	-	-	-	-	266			4
	98	1	-	-	1	-	-	-	-	-	-	-	-	40			2
M	82	2	-	-	-	-	-	-	-	-	-	-	-	133	37	26	2
	92	1	-	-	1	-	-	-	-	-	-	-	-	133	31	23	2
	98	15	-	-	3	-	-	-	-	-	-	-	-	360	46	60	18
D	82	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	92	-	1	-	-	-	-	-	-	-	-	-	-	66			1
	98	3	-	-	-	-	-	-	-	-	-	-	-	60			3
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>						
'82		00%			00%			00%			+57%						
'92		57%			00%			00%			- 1%						
'98		13%			00%			00%									
Total Plants/Acre (excluding Dead & Seedlings)												'82	199	Dec:	0%		
												'92	465		14%		
												'98	460		13%		
Rhus trilobata trilobata																	
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	92	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	98	-	-	-	1	-	-	1	-	-	-	-	-	40			2
M	82	-	1	-	-	-	-	-	-	-	-	-	-	66	47	41	1
	92	-	1	-	-	-	-	-	-	-	-	-	-	66	50	51	1
	98	8	-	-	1	-	-	-	-	-	-	-	-	180	49	93	9
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>						
'82		100%			00%			00%			+ 0%						
'92		100%			00%			00%			+70%						
'98		00%			00%			00%									
Total Plants/Acre (excluding Dead & Seedlings)												'82	66	Dec:	-		
												'92	66		-		
												'98	220		-		

A Y G R E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Yucca baccata																		
M	'82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	'92	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	'98	2	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>						
	'82	00%			00%			00%										
	'92	00%			00%			00%										
	'98	00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	0	Dec:	-			
												'92	0		-			
												'98	40		-			