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**Sensitive Plant Survey
of Piute Valley TMA**

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**Sensitive Plant Survey
of Piute Valley TMA**

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**Prepared by
Gayle Marrs-Smith
Botanist, BLM, Las Vegas District**

September, 1992

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1 Vegetation

1.1 General Description

The Piute Valley TMA is composed mainly of Mojave Desert scrub typical of the region. The dominant shrub, creosotebush (*Larrea tridentata*), floristically links the plant communities in the Piute Valley TMA. The Mojave Desert indicator species, Joshua tree (*Yucca brevifolia*), occurs throughout most of Piute Valley. The dominant plant community types are various associations of creosotebush, yucca (*Yucca brevifolia*, *Y. baccata*, *Y. schidigera*), white bursage (*Ambrosia dumosa*), little leaf ratany (*Krameria parvifolia*), and blackbrush (*Coleogyne ramosissima*). In addition, the flora of Piute Valley is influenced by the proximity of the Colorado River. Because of the river's lower elevation, some plants more typical of the Sonoran desert occur, such as brittlebush (*Encelia farinosa*), and have become established in the surrounding environs.

The vegetation of the Piute Valley TMA ranges from moderately to highly disturbed. Only a few areas display an unbroken, well-developed desert pavement, the surface crust preventing soil erosion. Large areas of the valley are quite sandy with a non-cemented surface. Other indicators of rangeland disturbance are the following introduced annual species which are abundant in spring in Piute Valley: red brome (*Bromus rubens*); six-weeks fescue (*Vulpia octoflora*); *Schismus barbatus*; and heron's bill (*Erodium cicutarium*). Past land uses that contributed to disturbance include (1) grazing, (2) off-highway vehicle (OHV) use, (3) mining, and (4) road clearing for transmission line and pipeline construction. Currently, Piute Valley TMA is closed to grazing, competitive OHV events, and casual off-road use (due to road closures), but is still open to mining, rights-of-way, and casual recreation.

1.2 Description of Vegetation Communities

The following description of the vegetation of the Piute Valley TMA is based on Cronquist et al. (1972), who summarized the vegetation structure of the Intermountain Region. Four communities are represented within the boundaries of the TMA: creosote-bursage scrub, mixed Mojave shrubland, blackbrush, and pinyon-juniper woodland, all of which intergrade with one another. Wash vegetation in Piute Valley for the most part does not vary greatly in composition from the surrounding vegetation, except in some of the larger washes (e.g. Piute Wash). Piute Valley does not have perennial water and thus has no true riparian community. A map of the vegetation communities in the Piute Valley TMA is presented in Figure 1.

1.1 General Description

The Pine Valley TMA is a high-altitude area of the Mojave Desert, typical of the region. The dominant species, *Quercus laevis* (live oak), is the most common tree in the Pine Valley TMA. The Mojave Desert is characterized by its arid climate, with annual precipitation of about 10 inches. The dominant plant community is the Mojave shrubland, which is composed of various species of shrubs and grasses. The vegetation is characterized by its low density and sparse cover. The Pine Valley TMA is located in the Mojave Desert, which is a large, arid region in the southwestern United States. The vegetation is typical of the Mojave Desert, with a variety of plant species adapted to the dry climate. The dominant species are *Quercus laevis*, *Yucca brevifolia*, and *Larrea tridentata*. The vegetation is characterized by its low density and sparse cover. The Pine Valley TMA is located in the Mojave Desert, which is a large, arid region in the southwestern United States. The vegetation is typical of the Mojave Desert, with a variety of plant species adapted to the dry climate. The dominant species are *Quercus laevis*, *Yucca brevifolia*, and *Larrea tridentata*. The vegetation is characterized by its low density and sparse cover.

The vegetation of the Pine Valley TMA is highly diverse, with a variety of plant species adapted to the dry climate. The dominant species are *Quercus laevis*, *Yucca brevifolia*, and *Larrea tridentata*. The vegetation is characterized by its low density and sparse cover. The Pine Valley TMA is located in the Mojave Desert, which is a large, arid region in the southwestern United States. The vegetation is typical of the Mojave Desert, with a variety of plant species adapted to the dry climate. The dominant species are *Quercus laevis*, *Yucca brevifolia*, and *Larrea tridentata*. The vegetation is characterized by its low density and sparse cover. The Pine Valley TMA is located in the Mojave Desert, which is a large, arid region in the southwestern United States. The vegetation is typical of the Mojave Desert, with a variety of plant species adapted to the dry climate. The dominant species are *Quercus laevis*, *Yucca brevifolia*, and *Larrea tridentata*. The vegetation is characterized by its low density and sparse cover.

1.2 Description of Vegetation Communities

The following description of the vegetation of the Pine Valley TMA is based on the work of J. H. Rouse, who has studied the vegetation of the Mojave Desert. The vegetation is characterized by its low density and sparse cover. The Pine Valley TMA is located in the Mojave Desert, which is a large, arid region in the southwestern United States. The vegetation is typical of the Mojave Desert, with a variety of plant species adapted to the dry climate. The dominant species are *Quercus laevis*, *Yucca brevifolia*, and *Larrea tridentata*. The vegetation is characterized by its low density and sparse cover. The Pine Valley TMA is located in the Mojave Desert, which is a large, arid region in the southwestern United States. The vegetation is typical of the Mojave Desert, with a variety of plant species adapted to the dry climate. The dominant species are *Quercus laevis*, *Yucca brevifolia*, and *Larrea tridentata*. The vegetation is characterized by its low density and sparse cover.

Figure 1. Vegetation communities of Piute Valley TMA.

TMA Boundary

- creosote-bursage
- Mojave desert scrub
- blackbrush
- pinyon-juniper

revised 8 July 1992

The creosote-bursage community occupies the sandy alluvial valley bottom and lower bajadas of Piute Valley, between 750 - 1000 m elevation. The overall plant diversity here is somewhat lower compared to the higher elevation areas surrounding the valley bottom. This community is represented by the co-dominants, creosotebush and bursage, with the following sub-dominants: little leaf ratany (*Krameria parvifolia*); cheesebush (*Hymenoclea salsola*), and goldenhead (*Acamptopappus sphaerocephalus*). The dominant grass, galleta (*Hilaria rigida*), forms robust swales within the creosote-bursage community.

The mixed Mojave desert shrub community occurs on upper bajadas and hills at elevations from about 1000 to 1250 m. This community includes Joshua tree, Mohave yucca (*Y. schidigera*), banana yucca (*Y. baccata*), wolfberry (*Lycium andersonii*), Mormon-tea (*Ephedra nevadensis*), buckwheat (*Eriogonum fasciculatum*), sage (*Salvia dorrii*), horsebrush (*Tetradymia spinescens*), and *Encelia virginensis*. Spiny hopsage (*Grayia spinosa*) and winterfat (*Ceratoides lanata*) occur occasionally. In addition, this community includes a wide assemblage of cacti. The important grasses in this community are galleta, black grama (*Bouteloua eriopoda*), bush muhly (*Muhlenbergia porteri*), and needlegrass (*Stipa speciosa*).

The blackbrush scrub community, dominated by blackbrush (*Coleogyne ramosissima*), intergrades with the mixed Mojave desert shrub community on rocky, well-drained hillsides at elevations around 1250 m throughout the Piute Valley TMA. It also occurs at lower elevations on north-facing slopes of hills in the northern part of the Piute Valley TMA (foothills of the Highland Range). The sub-dominants include Mohave yucca, Mormon tea, wolfberry, buckhorn cholla (*Opuntia acanthocarpa*), and barrel cactus (*Ferocactus acanthodes*).

Within the boundaries of the TMA, the pinyon-juniper woodland community occurs only at the highest elevations (1250 m) in the lower out-wash areas of the Newberry Mountains; here only Utah juniper (*Juniperus osteosperma*) is represented. Intergrading with Mojave desert shrub and blackbrush communities, the key species of this community include Nolina (*Nolina bigelovii*), green Mormon tea (*Ephedra viridis*), and Mojave sage (*Salvia mohavensis*).

As stated previously, wash vegetation in most of the Piute Valley TMA does not significantly differ in species composition from the surrounding vegetation. Better drainage, occasional surface flows, and deep moisture availability enhance the wash vegetation, thus making washes lusher than adjacent areas. The exceptions are the larger washes in Piute Valley (e.g. Piute Wash), where distinct plant associations occur, dominated by desert willow (*Chilopsis linearis*), cheesebush, bladder sage (*Salazaria mexicana*), cat-claw (*Acacia greggii*), rabbitbrush (*Chrysothamnus* spp.), *Porophyllum gracile*, *Ambrosia eriocentra*, and desert almond (*Prunus*

fasciculata). A partial list of these species occurring in Piute Valley is given in Table 1. The plant inventory concentrated efforts on sensitive plant species and perennial species for vegetation description, thus only a part of annuals and forbs which occur the Piute Valley is listed here. Plant synonymy follows Kartesz and Kartesz (1980) and Kartesz (1988).

2 Endangered, Threatened, or Sensitive Plants

A rare and sensitive plant inventory was undertaken in the Piute Valley TMA between April and June, 1992 to determine the distribution and abundance of Federal candidate taxa identified for potential listing as threatened or endangered. Additionally, sensitive plant taxa of state or local interest were also inventoried. A list of the current federal (USFWS), State (Nevada Division of Forestry), and Northern Nevada Native Plant Society (NNNPS) status for each taxon that was inventoried is presented Table 2. Plant status was compiled from BLM, 1991. The distribution of sensitive plant taxa in Piute Valley from past and present surveys is presented in Figure 2 and illustrations of candidate taxa appear in Appendix I. Plant taxa were systematically searched for, starting at the locations they were last reported and then surveying similar habitat. All plant species were recorded at each site and the dominants noted. The total area surveyed was 180,000 acres (see Figure 1 for boundaries). Voucher specimens collected were deposited at UNLV. Precipitation for spring, 1992 was above normal, with 10 inches recorded at Searchlight.

Only one T & E candidate, rosy two-toned beardtongue (*Penstemon bicolor* ssp. *roseus*) was recorded within the Piute Valley TMA during this inventory. Currently, it is listed as a Category 2 candidate. The other two taxa in Table 2 which were recorded from Piute Valley during this inventory are considered federal non-candidates at this time, but remain sensitive either because of their limited distribution (*Cryptantha tumulosa*) or because they are protected under Nevada Revised Statute 527.060 et seq., the Cactus and Yucca Law (*Ferocactus acanthodes* var. *lecontei*) (see Fig. 2).

Penstemon bicolor ssp. *roseus* occurs in shallow, coarse, gravelly washes in Clark and Nye Counties, Nevada. It occurs within the mixed Mojave shrubland community and the associated wash species include cat-claw, cheesebush, California buckwheat, and milkweed (*Asclepias erosa*). Subspecies *roseus* appears to be slightly more common than the other Candidate 2 subspecies, *P. bicolor* ssp. *bicolor*, which has light yellow flowers instead of pinkish.

Table 1. Plant species observed in Piute Valley. Relative abundance is as follows: C = common, widespread throughout community type(s) or a community dominant; O = occasional, scattered throughout community type(s) or locally abundant; R = rare, few seen anywhere. Introduced taxa are shown by "*".

Species	Common Name	Relative Abundance
SHRUBS		
Acacia greggii	catclaw acacia	C
Acamptopappus sphaerocephalus	rayless goldenhead	C
Ambrosia dumosa	white bursage	C
A. eriocentra	wooly bursage	C
Amsonia tomentosa var. brevifolia	wooly amsonia	R
Androstephium brevifolium	-	R
Artemesia ludoviciana	western mugwort	O
Asclepias subulata	rush milkweed	R
Aster sp.		O
Atriplex canescens	four-wing saltbush	O
Bebbia juncea	sweetbush	O
Brickellia incana	wooly brickell-bush	O
B. californica	California brickell-bush	O
Ceratoides lanata	winterfat	O
Chilopsis linearis	desert willow	O
Chrysothamnus paniculatus	rabbitbrush	C
Coloeogyne ramosissima	blackbrush	C
Dyssodia cooperi	Cooper's dyssodia	O
Encelia virginensis	Virgin River encelia	C
E. frutescens	bush encelia	O
E. farinosa	brittlebush	R
Ephedra nevadensis	Nevada ephedra	C
E. torreyana	Mormon tea	O
E. viridis	green ephedra	O
Eriogonum fasciculatum	California buckwheat	C
Fallugia paradoxa	cliff rose	O
Grayia spinosa	spiny hop-sage	O
Gutierrezia microcephala	snakeweed	O
Hymenoclea salsola	cheesebush	C
Juniperus osteosperma	Utah juniper	O
Krameria grayi	white ratany	C
K. parvifolia	little-leaf ratany	C
Larrea tridentata	creosotebush	C
Lepidium fremontii	desert peppergrass	O

Table 1. (cont.)

Species	Common Name	Relative Abundance
<i>Lycium andersonii</i>	Anderson's wolfberry	C
<i>L. cooperi</i>	Cooper's wolfberry	C
<i>Menadora spinescens</i>	spiny menadora	O
<i>Monardella linoides</i>		
ssp. <i>linoides</i>	flat-leaf horsemint	O
<i>Nolina bigelovii</i>	Bigelow nolina	O
<i>Petalonyx thurberi</i>		O
ssp. <i>thurberi</i>	common sandpaper bush	O
<i>Porophyllum gracile</i>	slender poreleaf	C
<i>Prunus fasciculata</i>	desert almond	C
<i>Psilostrophe cooperi</i>	white-stem paperflower	C
<i>Quercus turbinella</i>	desert scrub oak	R
<i>Salazaria mexicana</i>	bladder sage	C
<i>Salvia dorrii</i>	desert sage	C
<i>S. mohavensis</i>	Mohave sage	O
<i>Sphaeralcea ambigua</i>	globemallow	C
<i>Stephanomeria pauciflora</i>	few-flowered	
	wire lettuce	C
<i>Tetradymia canescens</i>	gray horsebrush	O
<i>T. spinosa</i> var. <i>longispina</i>	spiny horsebrush	O
<i>Thamnosma montana</i>	turpentine bush	O
<i>Viguiera deltoidea</i>	desert sunflower	O
<i>Xylorhiza tortifolia</i>	Mohave desert aster	C
<i>Yucca baccata</i>	blue yucca	C
<i>Y. brevifolia</i>	Joshua tree	C
<i>Y. schidigera</i>	Mojave yucca	C
GRASSES		
<i>Aristida purpurea</i>	purple threeawn	O
<i>Bouteloua curtipendula</i>	side-oats grama	O
<i>B. eriopoda</i>	black grama	C
<i>Bromus rubens</i> *	red brome	C
<i>Erioneuron pulchellum</i>	fluffgrass	C
<i>Hilaria jamesii</i>	curly galleta	O
<i>H. rigida</i>	big galleta	C
<i>Muhlenbergia porteri</i>	bush muhly	C
<i>Oryzopsis hymenoides</i>	Indian ricegrass	O
<i>Schismus barbata</i> *	Mediterranean grass	C
<i>Sitanion jubatum</i>	big squirreltail grass	O

Table 1. (cont.)

Species	Common Name	Relative Abundance
<i>Sporobolus contractus</i>	spike dropseed	R
<i>Sporobolus cryptandrus</i>	sand dropseed	O
<i>Stipa speciosa</i>	desert needlegrass	C
<i>Tridens muticus</i>	slim tridens	O
<i>Vulpia octoflora</i> *	six-weeks fescue	C
CACTI		
<i>Echinocactus polycephalus</i>	cottontop cactus	O
<i>Echinocereus engelmannii</i>	strawberry hedgehog	O
<i>Ferocactus acanthodes</i> var. <i>lecontei</i>	barrel cactus	O
<i>Mammillaria tetrancistra</i>	fishhook pincushion	O
<i>Neolloydia johnsonii</i>	-	O
<i>Opuntia acanthocarpa</i>	buckhorn cholla	C
<i>O. basilaris</i>	beavertail cactus	O
<i>O. chlorotica</i>	green prickly pear	O
<i>O. echinocarpa</i>	silver cholla	O
<i>O. erinacea</i> var. <i>ursina</i>	old man prickly pear	O
<i>O. erinacea</i> var. <i>erinacea</i>	"	O
<i>O. phaeacantha</i> var. <i>major</i>	prickly pear	O
<i>O. ramosissima</i>	diamond cholla	O
<i>O. stanleyi</i> var. <i>parishii</i>	devil cholla	O
HERBACEOUS FORBS		
<i>Allium</i> sp.	desert onion	R
<i>Amaranthus fimbriatus</i>	fringed amaranth	O
<i>Antheropeas wallacei</i>	wooly daisy	C
<i>Argythamnia neomexicana</i>	common silverbush	O
<i>Amsinkia tessellata</i>	fiddleneck	C
<i>Arabis</i> spp.	rockcress	O
<i>Arenaria fendleri</i>	Fendler sandwort	O
<i>Asclepias nyctaginifolia</i>	Mojave milkweed	R
<i>A. erosa</i>	desert milkweed	O
<i>Astragalus layneae</i>	Layne's milkvetch	O
<i>A. lentiginosus</i> var. <i>variabilis</i>	freckled milkvetch	O
<i>Astragalus lentiginosus</i> var. <i>fremontii</i>		O
<i>A. purshii</i> var. <i>lectulus</i>	Pursh's milkvetch	R

Table 1. (cont.)

Species	Common Name	Relative Abundance
<i>Baileya multiradiata</i>	desert marigold	C
<i>Calochortus flexuosus</i>	strangling mariposa	O
<i>C. kennedyi</i>	desert mariposa	O
<i>Calycoseris parryi</i>	yellow tackstem	C
<i>Camissonia brevipes</i>	yellow cups	C
<i>Castilleja chromosa</i>	desert paintbrush	O
<i>Chaenactis fremontii</i>	Fremont's pincushion	C
<i>C. macrantha</i>	large-flowered pincushion	O
<i>Chaenactis stevioides</i>	broad-flowered pincushion	C
<i>Chamaesyce albomarginata</i>	rattlesnake weed	
<i>Chorizanthe rigida</i>	spiny herb	C
<i>C. brevicornu</i>	brittle chorizanthe	O
<i>Cirsium neomexicanum</i>	New Mexican thistle	O
<i>Cryptantha angustifolia</i>	creosotebush cryptantha	C
<i>C. micrantha</i>	redfoot cryptantha	C
<i>C. tumulosa</i>	Mojave cryptantha	R
<i>Cucurbita palmata</i>	coyote melon	O
<i>Cuscuta denticulata</i>	dodder	C
<i>Dalea mollissima</i>	silk prairie clover	O
<i>Datura metalloides</i>	sacred datura	O
<i>Delphinium parishii</i>	larkspur	O
<i>Descurania pinnata</i>	tansy mustard	C
<i>Dichlostemma pulchella</i>	bluedick	O
<i>Dyssodia pentaschaeta</i>	fire-hair dogweed	C
<i>Eriastrum diffusum</i>	spreading eriastrum	C
<i>Erigeron concinnus</i>	hairy fleabane	R
<i>Eriogonum deflexum</i>	skeleton weed	C
<i>E. inflatum</i>	desert trumpet	C
<i>E. maculatum</i>		O
<i>E. nidularium</i>	birdnest buckwheat	C
<i>E. plumatella</i>	flat-top buckwheat	O
<i>E. thomasii</i>	Thomas's buckwheat	O
<i>E. trichopes</i>	little trumpet buckwheat	C
<i>Erodium cicutarium</i> *	filaree	C
<i>Eschscholzia glyptosperma</i>	desert poppy	C
<i>E. minutiflora</i>	little desert poppy	C
<i>Gaura coccinea</i>	scarlet gaura	O
<i>Gilia</i> spp.		
<i>Langloisia setosissima</i>	bristly langloisia	C
<i>L. schottii</i>	Schott's langloisia	O
<i>Lepidium fremontii</i>	desert peppergrass	O
<i>Linanthus aureus</i>	desert gold	C
<i>Lotus tomentellus</i>	desert birdfoot deervetch	C

Table 1. (cont.)

Species	Common Name	Relative Abundance
<i>Lotus rigidus</i>	desert deervetch	O
<i>Lupinus</i> sp.		O
<i>L. arizonicus</i>	Arizona lupine	C
<i>L. concinnus</i> ssp. <i>orcuttii</i>	elegant lupine	C
<i>Malacothrix californica</i>		
var. <i>glabrata</i>	desert dandelion	C
<i>M. coulteri</i>	snakehead	O
<i>Marrubium vulgare</i> *	horehound	R
<i>Menadora scabra</i>	rough menadora	O
<i>Mentzelia tricuspidis</i>	desert stickleaf	R
<i>Mirabilis incarnata</i>	windmills	C
<i>M. multiflora</i>		
var. <i>glabrata</i>	many-flower four-o'clock	O
<i>M. coccineus</i>	scarlet four-o'clock	R
<i>M. bigelovii</i>	wishbone bush	C
<i>Orobanche cooperi</i>	Cooper's broomrape	R
<i>Pectocarya recurva</i>	recurve pectocarya	C
<i>Penstemon bicolor</i> ssp. <i>roseus</i>	rosy two-tone penstemon	O
<i>Phacelia distans</i>	common phacelia	O
<i>P. crenulata</i>	notch-leave phacelia	C
<i>P. distans</i>		O
<i>P. fremontii</i>	Fremont phacelia	
<i>P. parishii</i>		
<i>P. rotundifolia</i>		
<i>Physalis crassifolia</i>		
var. <i>crassifolia</i>	thick-leaf groundcherry	O
<i>Plantago insularis</i>	wooly plantain	C
<i>P. purshii</i>	Pursh plantain	C
<i>Quincula lobata</i>	purple groundcherry	R
<i>Raphinesquia neomexicana</i>	desert chicory	C
<i>Salsola iberica</i> *	Russian thistle	C
<i>Salvia columbariae</i>	chia	C
<i>Stanleya pinnata</i> ssp. <i>pinnata</i>	prince's plume	O
<i>Stephanomeria exigua</i>	small wire lettuce	C
<i>Streptanthella longirostris</i>	long-beak twistflower	C
<i>Sysimbrium altissimum</i> *	tumble mustard	C
<i>Tiquilia canescens</i>	shrubby tiquilia	O
<i>Tragia ramosa</i>	-	R
<i>Verbena gooddingii</i>	desert verbena	O

Table 2. Endangered, Threatened, or Sensitive Plants reported from Piute Valley TMA.

Species	Federal ¹ status	Nevada ² status	NNNPS ³ status	Last reported occurrence ⁺
bear claw poppy (<i>Arctomecon californicum</i>)	C2	E	T	1906
chalk live-forever (<i>Dudleya pulverulenta</i> ssp. <i>arizonica</i>)	-	-	OR	1966
pink two-tone penstemon (<i>Penstemon bicolor</i> var. <i>roseus</i>)	C2	-	W	1992
barrel cactus (<i>Ferocactus acanthodes</i> var. <i>lecontei</i>)	3C	E	W	1992
Mojave cryptantha (<i>Cryptantha tumulosa</i>)	3C	-	W	1992
Clokey pincushion (<i>Coryphantha vivipara</i> ssp. <i>rosea</i>)	3C	E	D	1973

¹Federal Status codes (FR, 1985, Vol.50, No. 188)

C2 Candidate 2 - USFWS needs more information before listing is possible.

3C Non-candidate - taxa that have proven to be more widespread than previously believed and/or have no identifiable threat, but which may be re-evaluated.

²Nevada Status codes:

E Protected by Nevada Revised Statute 527j.270 as a critically endangered plant, or by NRS 527.060 under the Cacti and Yucca Law.
- No status has been given.

³NNNPS (Northern Nevada Native Plant Society)

W Watch - taxa of uncertain abundance and distribution, and/or those whose threats cannot be defined.

OR Other Rare - taxa of limited distribution.

D Deletion - indicates taxa to be more widespread than originally thought, and/or no identifiable threat.

⁺Dates for reported occurrence before this 1992 inventory are from Nevada Natural Heritage Program (1991).

Figure 2. Sensitive plant occurrence
in Piute Valley TMA.

— TMA Boundary

- 1 *Arctomecon californicum*
- 2 *Dudleya pulverulenta* ssp. *arizonicus*
- 3 *Penstemon bicolor* ssp. *roseus*
- 4 *Ferocactus acanthodes* var. *lecontel*
- 5 *Coryphantha vivipara* var. *rosea*
- 6 *Cryptantha tumulosa*

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Known locations in the Piute Valley TMA include:

- 1 T28S, R63E, Secs. 1, 7, 1160 m, 41 individuals;
- 2 T29S, R63E, Secs. 4, 32, 1120 m, 15 individuals;
- 3 T30S, R62E, Sec. 15, 1120 m, 1 individual.

On the west side of Piute Valley but outside the boundary of the TMA, scattered populations of bicolored penstemon were reported at the following locations:

T30S, R62E, Secs. 9,4, 1100-1200 m, scattered individuals
along roadside (approximately 70 individuals).

The distribution of *Penstemon bicolor* ssp. *roseus* in Piute Valley is presented in Figure 3. Also included are sites which were surveyed for this species.

The Mojave cryptantha (*Cryptantha tumulosa*) occurs in rocky outcrops of Clark and Nye counties, usually in the Pinyon-Juniper community. It is currently a category 3C taxa, but is on the NNNPS watch list. It was located on an outcrop of decomposed granite in the southern foothills of the Highland Range within the boundaries of the TMA. The associated vegetation was scrub oak (*Quercus turbinella*), milk-vetch (*Astragalus purshii* var. *lectulus*), fishhook cactus (*Mammillaria tetrancistra*) and the cactus, *Neolloydia johnsonii*.

Barrel cactus (*Ferocactus acanthodes* var. *lecontei*) is common on hillsides throughout Piute Valley, where the soils are rocky, well-drained, and coarse. This cactus is also a category 3C. The dominant taxa associated with this cactus are Joshua tree, Mohave yucca, creosotebush, and often other cacti (e.g. *Opuntia* spp.).

One plant species that is noteworthy despite a lack of listing is the cactus, *Neolloydia johnsonii*. The Searchlight population is apparently the only one that displays a yellow flowered form; all other populations have pink to purple flowers. Searchlight is the type local for *Neolloydia johnsonii*.

Three taxa, bear claw poppy (*Arctomecon californicum*), chalk live-forever (*Dudleya pulverulenta* spp. *arizonica*), and Clokey pincushion (*Coryphantha vivipara* var. *rosea*) were looked for, but not found during the inventory. They have in the past been reported from Piute Valley (see Table 2 and Fig. 2). Of these, only the bear claw poppy is a federal C2 candidate species. It typically thrives in gypsum soils within the creosote-bursage community, but has not been seen in Piute Valley since the early 1900's. Further study of the flora of Piute Valley should be

Figure 3. Distribution of *Penstemon bicolor* ssp. *roseus* in Plute Valley TMA.

- TMA Boundary
- ▨ populations located
- ▤ areas searched

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continued. Since it is the prototype of desert tortoise conservation areas, a full floristic and vegetation study should be performed to document all vascular plants and communities occurring in the valley.

3 References

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ARCTOMECON · CALIFORNICA

CORYPHANTHA VIVIPARA var. ROSEA

1 cm

1 cm

1 cm

CRYPTANTHA TUMULOSA

3 mm

1 cm

3 mm

1 mm

PENSTEMON BICOLOR

2 mm

5 mm

5 mm