

**FLORISTIC SURVEY
OF THE
BLACK MOUNTAINS
CLARK COUNTY, NEVADA**

2006

The University of Nevada, Las Vegas
In partnership with the Clark County Desert Conservation Program

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FORMAL REPORT

Executive Summary

Featured Project and Type: Floristic Survey of the Black Mountains, Clark County, Nevada.

Species Addressed: Native and introduced vascular plants.

Summary Project Description:

Project Status/Accomplishments: Survey completed.

Partners: Clark County Desert Conservation Program and the University of Nevada, Las Vegas.

Management Actions Addressed:

Goals and Objectives of the Project: To document the occurrence and distribution of vascular plants in the study area; to increase knowledge of the location and abundance of rare plants, and any threats to those species.

Introduction

The Black Mountains are divided into nearly equal Clark County, Nevada and Mohave County, Arizona portions, the two separated by the Colorado River. They were named in 1861 by Joseph C. Ives, in his report on the exploration of the lower Colorado River (McLane, 1978).

The Clark County Black Mountains segment is located entirely within Lake Mead National Recreation Area (Fig. 1). It is one of several ranges in the Recreation Area whose flora has been incompletely known. The mountains are bordered on the south and east by the waters of Lake Mead (Boulder Canyon, Virgin Basin, and Overton Arm) and on the west by North Shore Road and Bitter Spring Valley. The mountains are approximately 27 km in length southwest to northeast, and about 9 km at their widest. They cover about 108 square km. Their highest elevation is VABM, at 1074 m, seven km south of Bitter Spring, and some 700 m above the level of Lake Mead. Four named peaks within the range have elevations in excess of 900 m (Hamblin, Guardian and Pyramid Peaks, and Saddle Mountains). The mountain range lies within the southern area of the Great Basin section of the Basin and Range Province as described by Hunt (1967).

Most of the mountain mass is composed of undifferentiated volcanic rock, overlain in some areas by clay and silt beds of the Muddy Creek Formation. Along the north slope (Razorback and Pinto Ridges, and Pinto Valley) are swaths of several formations, notably the Chinle and Moenkopi, Aztec Sandstone, and the red beds of the Kaibab, Toroweap and Coconino (Longwell, et al. 1965) (Fig. 2).

Precipitation records available from both ends of the mountain range (Callville Bay and Echo Bay) show that over a 15 year period average annual rainfall at these sites ranged from 5.52 to 5.95 inches. Average annual maximum and minimum temperatures ranged from 85.5 to 82.8 F°, and from 57.1 to 57.7 F° (Western Regional Climate Center, 2005).

There are two known spring sites within the mountain range, Sandstone Spring in Pinto Valley, and Cottonwood Spring, about one km south of North Shore Road along the now-closed four wheel road into Pinto Valley. Most of the water at Sandstone Spring is diverted by pipe into a trough, only a few small pools of standing water are present at the base and in seeps in the sandstone hills (Fig. 3). Cottonwood Spring is marked only by a patch of moist soil and two obviously stressed cottonwood trees.

Plant Communities

Owing to their limited elevational range the mountains have few well defined plant communities. The most prominent, and the one at the lowest elevations, is the **Creosote bush-Bur sage Community**. It is associated with the finer textured soils of valley floors and with the coarser outwash materials on slopes (bajadas) and at the mouths of canyons (alluvial fans) (Fig. 4). Creosote bush (*Larrea tridentata*) may occur in nearly pure stands, but bur sage (*Ambrosia dumosa*) is a common and predictable co-dominant. Prominent associates are species of Mormon tea (*Ephedra*), Mojave yucca (*Yucca schidigera*) and brittle bush (*Encelia farinosa*). When winter precipitation is adequate there may be a display of annual species. Members of this community may also be present above the bajadas, on nearly bare outcrops of the parent geological formation, but they are typically widely dispersed and they may be no more prominent than a variety of other shrubs or cacti that occur in the area.

Even more poorly defined is the **Desert Wash Community**. It is a heterogenous assemblage of shrubby species. It may contain elements of the creosote bush-bur sage community and, depending upon width, gradient, and depth and size of alluvium it may be dominated by a variety of shrubs. These include cat claw acacia (*Acacia greggii*), mesquite (*Prosopis glandulosa* var. *torreyana*), burro brush (*Ambrosia salsola*) rabbit brush (*Ericameria paniculata*), desert almond (*Prunus fasciculata*), bladder sage (*Salvia mexicana*), sweet bush (*Bebbia juncea*), and buckwheat (*Eriogonum fasciculatum*) (Fig. 5).

At the mouths of some canyons on the Lake Mead side of the range, where soils are fine textured and often also moist, there is a recognizable **Lakeshore Riparian Community**. It is dominated by shrubs or small trees, including the invasive salt cedar (*Tamarix ramosissima*), arrow weed (*Pluchea sericea*), mesquite, and creosote bush. A variety of annuals, some non-native, are also present (Fig. 6).

Gypsum-bearing soils are present at several locations within the study area (e.g., along North Shore Road, sporadically from mile marker 14 to 26; the eastern slope of Boulder Wash; from Bighorn Cove to Bearing Cove) (Fig. 7). These support a characteristic **Gypsophile**

Community. Some members are known as “gypsophiles” (Meyer (1980). These have never been observed occurring off of gypsum deposits. Others are classified as “gypsoclines,” species which occur commonly and characteristically on gypsum but occasionally on other unusual substrates. Members of this community include the Las Vegas bear poppy (*Arctomecon californica*), ring stem (*Anulocaulis leisolenus*), Palmer phacelia (*Phacelia palmeri*), beautiful phacelia (*Phacelia pulchella*), sun ray (*Enceliopsis argophylla*), and sandpaper plant (*Petalonyx parryi*) (Fig. 8).

Several species are adapted to the special conditions associated with cliffs, a common habitat throughout the Black Mountains. These form the **Cliff and Rock Outcrop Community**. Their distribution and occurrence on these seemingly barren outcrops is determined by crevice size and depth, run-off patterns, soil accumulation, and moisture retention. Ferns (*Cheilanthes covillei* and *C. parryi*) are often present, as are several small shrubs, rough brickell bush (*Brickellia microphylla*), spiny brickell bush (*Brickellia atractyloides*), brain plant (*Eriogonum heermannii* var. *sulcatum*), and willow glow weed (*Lorandersonia salicina*) (Fig. 11, 12).

Materials and Methods

Field and laboratory work in support of this project began in March of 2004 and concluded in December 2006. Professional botanists, working individually or in pairs, surveyed those areas accessible in the Black Mountains. Presently, there is only one four wheel drive road that penetrates the range (Boathouse Cove). Access, therefore, is limited to foot from this road or from North Shore Road, from Callville and Echo Washes, or by boat along the Lake Mead shoreline. Plants present at each site visited were recorded, along with notations on their phenology. These recordings were then compiled into a master checklist.

Plant voucher field collections were made for accessioning into the Wesley E. Niles Herbarium at the University of Nevada, Las Vegas. These were dried, pressed, and made free of insects and adherent soil particles. Using a variety of references, they were then identified and classified. Collection data for each were composed, transferred to acid-free labels, and also entered into the Herbarium’s Paradox data program. These data minimally included the accepted scientific name, along with the nomenclatural author(s); precise location (UTMs; Township, Range, Section; or Latitude-Longitude); elevation in feet and meters; associated plant species; data of collection; and collector’s name and collection number. Each specimen, along with its proper label, was then glued onto archival-quality paper, assigned an accession number, placed in protective covers, and assigned to its proper family, genus, and species placement in especially designed herbarium cabinets.

Local plant lists, a master checklist, and a list of herbarium accessions are provided as appendices to this report.

Plant species of special concern, e.g., those designated as threatened or endangered, or otherwise rare, or of special scientific interest were noted, along with appropriate information regarding

occurrence and distribution within the study area.

Results

This survey identified a total of 289 vascular plants as occurring in the Clark County portion of the Black Mountains (Appendix I). These species, subspecies or varieties are representative of 164 genera and 44 families, grouped in the categories shown below (Table 1).

Table 1. Numerical analysis of taxa by category, Black Mountains, Clark County, Nevada.

	Families	Genera	Species, Subspecies Varieties	Introduced
Ferns and Fern Allies	1	1	2	- 0 -
Gymnosperms	1	1	4	- 0 -
Dicots	39	147	255	12
Monocots	4	20	28	8
Totals	45	169	289	20

The five largest families by number of genera/species and infraspecific taxa are: aster (Asteraceae) 38/57; grass (Poaceae) 13/20; borage (Boraginaceae) 4/22; buckwheat (Polygonaceae) 4/17; and waterleaf (Hydrophyllaceae) 4/16.

The five largest genera by number of species and infraspecific taxa are: *Cryptantha* (Boraginaceae) 15; *Eriogonum* (Polygonaceae) 14; *Phacelia* (Hydrophyllaceae) 11; *Camissonia* (Onagraceae) 7; and *Mentzelia* (Loasaceae) 7.

Growth Form

Most of the 189 known Black Mountains species are assignable to a particular **life or growth form** category, namely annual, herbaceous perennial, shrub, tree, or vine. Some can be placed in more than one of these categories (e.g. annual or herbaceous perennial). A list of these plants, by category, is provided as an appendix. Additionally, a sixth category is included for those that are grasses or grasslike plants (either annual or herbaceous perennial).

Introduced Taxa

A total of 20 non-native taxa have been introduced into the Black Mountains. These have become naturalized, are now spreading in the wild, and are firmly established in the flora.

Twelve of the introduced taxa are members of dicot families, and eight are monocots (all members of the grass family, Poaceae).

Plants of Special Concern

Four Black Mountains species have been recommended for listing as critically endangered, or have been fully listed as such, or are otherwise designated as species of special concern (Nevada Natural Heritage Program, 2005). They are *Arctomecon californica* (Las Vegas bearpoppy) (Fig. 9), *Anulocaulis leisolenus* var. *leisolenus* (sticky ringstem) (Fig. 9), *Astragalus preussii* var. *laxiflorus* (Littlefield milkvetch), and *Ferocactus cylindraceus* var. *lecontei* (Mojave barrel cactus).

Additional plants of special concern are known to occur in areas adjacent to the study area. The Las Vegas buckwheat (*Eriogonum corymbosum* var. *nilesii*) is abundant in the Anniversary Mine and Lovell Wash areas, only three km northwest of the Black Mountains. It has been recommended for listing as critically endangered (Nevada Natural Heritage Program, 2005). Two annual species, both fully listed as critically endangered, the three corner milkvetch (*Astragalus geyeri* var. *triquetrus*) and sticky buckwheat (*Eriogonum viscidulum*), have been found at several sites along the Lake Mead shoreline. They inhabit the fine sand or sand-clay mixtures of the Muddy Creek Formation at the southeast base of the Black Mountains (Niles et al. 1995).

This survey resulted in a heretofore unreported occurrence of a plant species for Clark County and Nevada. The plant, a semi-shrubby member of the aster or sunflower family (Asteraceae), is one of seven species relegated to the genus *Lorandersonia*, specifically *Lorandersonia salicina* (Fig. 11, 12). In earlier taxonomic treatments the plant has been allied with the genera *Haplopappus* and *Hesperodoria*. The plant's common name, willow glow weed, alludes to its linear or lanceolate shaped leaves, reminiscent of a true willow. Until this study, *L. salicina* was considered to be an endemic to the state of Arizona, known only from collections along the Bright Angel Trail, Grand Canyon (Flora of North America, 2006). It typically inhabits rocky soils and cliff crevices along the southeastern base of the Black Mountains. National Park botanists have also located the species in similar habitats on the Arizona side of Lake Mead.

DISCUSSION - CONCLUSION

Results of this study indicate that the flora of the Black Mountains persists as a largely unspoiled botanical feature within Clark County. The few non-native species present are found around the periphery of the range, largely restricted to roadways, tourist oriented sites, or to certain shoreline areas that are frequented by boaters. Owing to its rugged landscape, access to the mountain mass is very limited. It is this feature that is largely responsible for the preservation of this bit of Clark County wilderness and for the sensitive plants it harbors.

ACKNOWLEDGMENTS

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APPENDIX I

BLACK MOUNTAINS MASTER CHECKLIST OF VASCULAR PLANTS

Acacia greggii
Acamptopappus sphaerocephalus
Achnatherum hymenoides
Achnatherum parishii
Achnatherum speciosum
Achyronychia cooperi
Adenophyllum cooperi [*Dyssodia cooperi*]
Allionia incarnata
Allium sp.
Ambrosia dumosa
Ambrosia salsola [*Hymenoclea salsola*]
Amphipappus fremontii
Amsinckia tessellata
Androstephium breviflorum
Anemone tuberosa
Antirrhinum filipes
Anulocaulis leisolenus var. *leisolenus*
Arctomecon californica
Argemone corymbosum
Aristida adscensionis
Aristida purpurea
Asclepias subulata
Astragalus acutirostris
Astragalus nuttallianus var. *imperfectus*
Astragalus preussii var. *laxiflorus*
Astragalus purshii
Atrichoseris platyphylla
Atriplex canescens
Atriplex confertifolia
Atriplex hymenelytra
Atriplex polycarpa
Baccharis brachyphylla
Baccharis sergiloides
Bebbia juncea var. *aspera*
Boechera perennans [*Arabis perennans*]
Bouteloua trifida
Brassica tournefortii
Brickellia atractyloides

Brickellia californica
Brickellia desertorum
Brickellia longifolia
Brickellia microphylla
Bromus berterianus [*Bromus trinii*]
Bromus carinatus
Bromus madritensis ssp. *rubens*
Bromus tectorum
Calochortus flexuosus
Calycoseris parryi
Calycoseris wrightii
Camissonia boothii
Camissonia brevipes ssp. *brevipes*
Camissonia chamaenerioides
Camissonia claviformis
Camissonia multijuga
Camissonia refracta
Camissonia walkeri ssp. *tortilis*
Capsella bursa-pastoris
Cassia armata
Caulanthus cooperi
Caulanthus lasiophyllus [*Guillenia lasiophylla*]
Chaenactis carphoclinia var. *carphoclinia*
Chaenactis fremontii
Chaenactis macrantha
Chamaesyce albomarginata [*Euphorbia albomarginata*]
Chamaesyce parishii [*Euphorbia parishii*]
Chamaesyce polycarpa [*Euphorbia polycarpa*]
Cheilanthes covillei
Cheilanthes parryi
Chilopsis linearis var. *arcuata*
Chorizanthe brevicornu
Chorizanthe rigida
Cirsium neomexicanum
Conyza canadensis
Cryptantha angustifolia
Cryptantha barbigera
Cryptantha circumscissa
Cryptantha confertiflora
Cryptantha decipiens
Cryptantha dumetorum
Cryptantha gracilis
Cryptantha holoptera

Cryptantha inaequata
Cryptantha maritima
Cryptantha nevadensis
Cryptantha Pterocarya
Cryptantha racemosa
Cryptantha utahensis
Cryptantha virginensis
Cuscuta californica
Cylindropuntia acanthocarpa [Opuntia acanthocarpa]
Cylindropuntia echinocarpa [Opuntia echinocarpa]
Cylindropuntia ramosissima [Opuntia ramosissima]
Cynanchum utahense
Cynodon dactylon
Cyperus odoratus
Dalea mollis
Dalea mollissima
Datura wrightii
Dasyochloa pulchella [Erioneuron pulchellum]
Delphinium andersonii
Delphinium parishii
Descurainia pinnata
Descurainia sophia
Draba cuneifolia
Echinocactus polycephalus
Echinocereus engelmannii
Echinomastus johnsonii
Encelia farinosa
Enceliopsis argophylla
Ephedra fasciculata
Ephedra nevadensis
Ephedra torreyana
Ephedra viridis
Eremalche rotundifolia
Ericameria paniculata [Chrysothamnus paniculatus]
Erigeron divergens
Eriogonum brachypodum
Eriogonum deflexum
Eriogonum fasciculatum var. polifolium
Eriogonum heermannii var. sulcatum
Eriogonum inflatum
Eriogonum insigne
Eriogonum maculatum
Eriogonum nidularium

Eriogonum palmerianum
Eriogonum pusillum
Eriogonum reniforme
Eriogonum thomasi
Eriogonum trichopes
Eriophyllum lanatum
Eriophyllum wallacei
Erodium cicutarium
Erodium texanum
Eschscholzia glyptosperma
Eschscholzia minutiflora
Eucnide urens
Eucrypta chrysanthemifolia var. bipinnatifida
Eucrypta micrantha
Ferocactus cylindraceus var. lecontei
Filago californica
Galium stellatum var. eremicum
Geraea canescens
Gilia filiformis
Gilia inconspicua var. inconspicua
Gilia latifolia
Gilia scopulorum
Gilia stellata
Grayia spinosa
Gutierrezia microcephala
Gutierrezia sarothrae
Hedeoma nanum
Heliotropium curassavicum
Heterostipa comata
Hordeum murinum
Ipomopsis polycladon
Isocoma acradenia var. bracteosa
Krameria erecta
Krascheninnikovia lanata [Ceratoides lanata]
Langloisia setosissima var. setosissima
Larrea tridentata
Lepidium fremontii
Lepidium lasiocarpum var. lasiocarpum
Lesquerella tenella
Linanthus demissus
Linanthus jonesii
Lorandersonia salicina [Hesperodoria salicina, Haplopappus salicinus]
Lotus salsuginosus var. salsuginosus

Lotus strigosus
Lotus tomentellus
Lupinus arizonicus
Lupinus brevicaulis
Lupinus sparsiflorus
Lycium andersonii
Lycium pallida var. oligosperma
Malacothrix coulteri
Malacothrix glabrata
Malcomia africana
Malva parviflora
Mammillaria tetrancistra
Melilotus alba
Mentzelia albicaulis
Mentzelia involucrata
Mentzelia laevicaulis
Mentzelia obscura
Mentzelia oreophila
Mentzelia pterosperma
Mentzelia tricuspis
Mimulus bigelovii var. cuspidatus
Mirabilis bigelovii
Mohavea brevisflora
Monardella linoidea
Monardella odoratissima
Monoptilon bellidifforme
Monoptilon bellioides
Mortonia utahensis
Muhlenbergia microsperma
Muhlenbergia porteri
Nama demissum
Nama pusillum
Nemacladus glanduliferus
Nicotiana obtusifolia [Nicotiana trigonophylla]
Oenothera caespitosa
Oenothera cavernae
Oenothera deltoidea
Oligomeris linifolia
Opuntia basilaris
Orobanche cooperi
Oxytheca perfoliata
Palafoxia arida
Parietaria hespera

Parietaria pennsylvanica
Pectocarya heterocarpa
Pectocarya platycarpa
Pectocarya recurvata
Penstemon palmeri
Perityle emoryi
Petalonyx nitidus
Petalonyx parryi
Peucephyllum schottii
Phacelia affinis
Phacelia crenulata var. ambigua
Phacelia crenulata var. crenulata
Phacelia cryptantha
Phacelia distans
Phacelia neglecta
Phacelia palmeri
Phacelia pedicellata
Phacelia pulchella var. gooddingii
Phacelia rotundifolia
Phacelia vallis-mortae
Phorodendron californica
Physalis crassifolia
Plagiobothrys arizonicus
Plagiobothrys jonesii
Plantago ovata [Plantago insularis]
Pleuraphis rigida
Pleurocoronis pluriseta [Hofmeisteria pluriseta]
Pluchea odorata [Pluchea purpurescens]
Pluchea sericea
Poa bigelovii
Polypogon monspeliensis
Populus fremontii
Porophyllum gracile
Prenanthes exiguus
Prosopis glandulosa var. torreyana
Prunus fasciculata
Psathyrotes annua
Psathyrotes pilifera
Psathyrotes ramosissima
Psoralea fremontii var. fremontii
Pterostegia drymarioides
Rafinesquia neomexicana
Rumex sp.

Salazaria mexicana
Salix gooddingii
Salsola paulsenii
Salsola tragus
Salvia columbariae
Salvia mohavensis
Sarcostemma hirtellum
Schismus arabicus
Schismus barbatus
Senecio mohavensis
Silene antirrhina
Sisymbrium irio
Sonchus oleraceus
Sphaeralcea ambigua var. ambigua
Stanleya pinnata var. pinnata
Stephanomeria exigua
Stephanomeria pauciflora
Streptanthella longirostris
Stylocline micropoides
Suaeda moquini
Tamarix ramosissima
Thamnosma montana
Thymophylla pentachaeta var. belenidium
Thysanocarpus curvipes
Tidestromia lanuginosa
Tidestromia oblongifolia
Tiquilia canescens
Tiquilia latior
Trichoptilium incisum
Tridens muticus
Typha sp.
Vulpia octoflora
Xanthisma spinulosum var. gooddingii [Machaeranthera pinnatifida ssp. gooddingii]
Xylorhiza tortifolia var. tortifolia
Yucca schidigera

APPENDIX II

BLACK MOUNTAINS PLANT LISTS

Northwest slope of Razorback Ridge

Acacia greggii
Achnatherum speciosum
Ambrosia dumosa
Ambrosia salsola
Amphipappus fremontii
Amsinckia tessellata
Antirrhinum filipes
Arctomecon californica
Aristida purpurea
Asclepias subulata
Astragalus purshii
Atriplex confertifolia
Atriplex hymenelytra
Atriplex polycarpa
Bebbia juncea
Brickellia atractyloides
Brickellia californica
Bromus madritensis ssp. rubens
Camissonia brevipes
Camissonia claviformis
Camissonia refracta
Caulanthus cooperi
Caulanthus lasiophyllus
Chaenactis sp.
Chamaesyce polycarpa
Cheilanthes parryi
Chorizanthe rigida
Cylindropuntia acanthocarpa
Cylindropuntia echinocarpa
Dalea mollissima
Dasyochloa pulchella
Delphinium sp.
Descurainia pinnata
Draba cuneifolia
Echinomastus johnsonii
Encelia farinosa
Enceliopsis argophylla

Northwest Slope of Razorback Ridge (Continued)

Ephedra torreyana
Ephedra viridis
Ericameria paniculata
Eriogonum deflexum
Eriogonum fasciculatum
Eriogonum inflatum
Eriogonum pusillum
Eschscholzia minutiflora
Eucnide urens
Eucrypta micrantha
Ferocactus cylindraceus
Gilia sp.
Gutierrezia microcephala
Ipomopsis polycladon
Krameria erecta
Larrea tridentata
Lepidium fremontii
Lepidium lasiocarpum var. lasiocarpum
Lycium andersonii
Mentzelia sp.
Mirabilis bigelovii
Muhlenbergia microsperma
Nemacladus sp.
Nicotiana obtusifolia
Opuntia basilaris
Pectocarya recurvata
Petalonyx parryi
Peucephyllum schottii
Phacelia crenulata
Phacelia vallis-mortae
Phorodendron californicum
Physalis crassifolia
Plagiobothrys arizonica
Plantago ovata
Pleuraphis rigida
Pleurocoronis pluriseta
Porophyllum gracile
Prosopis glandulosa var. torreyana
Psoralea fremontii
Pterostegia drymarioides
Rafinesquia neomexica

Northwest slope of Razorback Ridge (Continued)

Salvia mohavensis

Schismus arabicus

Sphaeralcea ambigua

Stanleya pinnata

Stephanomeria pauciflora

Suaeda moquinii

Tamarix ramosissima

(*Thymophylla pentachaeta* var. *belenidium*)

Thysanocarpus curvipes

Tiquilia latior

Xanthisma spinulosum var. *gooddingii*

Xylorhiza tortifolia var. *tortifolia*

PLANT LIST

Boathouse Cove Road

Acacia greggii
Ambrosia dumosa
Ambrosia salsola
Amsinckia tessellata
Androstephium breviflorum
Antirrhinum filipes
Argemone corymbosa
Aristida purpurea
Bebbia juncea
Brickellia atractyloides
Bromus berterianus
Bromus madritensis ssp. rubens
Bromus tectorum
Calycoseris wrightii
Camissonia brevipes
Camissonia refracta
Camissonia walkeri ssp. tortilis
Chaenactis fremontii
Chamaesyce albomarginata
Chorizanthe brevicornu
Chorizanthe rigida
Cryptantha barbigerata
Cryptantha circumscissa
Cryptantha nevadensis
Cryptantha pterocarya
Cryptantha racemosa
Cryptantha utahensis
Cuscuta californica
Dasyochloa pulchella
Descurainia pinnata
Draba cuneifolia
Encelia farinosa
Enceliopsis argophylla
Ephedra nevadensis
Ephedra torreyana
Ephedra viridis
Ericameria paniculata
Erodium cicutarium
Eriogonum brachypodum

Boathouse Cove Road (Continued)

Eriogonum fasciculatum
Eriogonum inflatum
Eriogonum thomasi
Eremalche parviflora
Eriogonum trichopes
Eschscholzia glyptosperma
Eschscholzia minutiflora
Eucnide urens
Eucrypta chrysanthemifolia var. bipinnatifida
Eucrypta micrantha
Ferocactus cylindraceus
Gilia scopulorum
Galium stellatum
Gilia scopulorum
Grayia spinosa
Gutierrezia microcephala
Heliotropium curassavicum
Larrea tridentata
Lepidium lasiocarpum
Lotus strigosus
Lotus tomentellus
Lupinus brevicaulis
Lycium andersonii
Mentzelia tricuspis
Phacelia distans
Phacelia palmeri
Pleurocoronis pluriseta
Pterostegia drymarioides
Poa bigelovii
Rafinesquia neomexicana
Salvia columbariae
Sphaeralcea ambigua
Tamarix ramosissima
Tidestromia lanuginosa
Thamnosma montana
Vulpia octoflora
Xanthisma spinulosum var. gooddingii

PLANT LIST

Redstone Area

Acacia greggii
Acamptopappus sphaerocephalus
Achnatherum hymenoides
Achnatherum speciosum
Ambrosia dumosa
Amphipappus sphaerocephalus
Amsinckia tessellata
Anemone tuberosa
Aristida purpurea
Brickellia atractyloides
Bromus berterianus
Bromus madritensis var. rubens
Camissonia refracta
Camissonia brevipes
Camissonia walkeri ssp. tortilis
Caulanthus lasiophyllus
Chamaesyce polycarpa
Chaenactis carphoclinia
Chaenactis fremontii
Cheilanthes parryi
Chorizanthe brevicornu
Chorizanthe rigida
Cylindropuntia echinocarpa
Cryptantha angustifolia
Cryptantha barbiger
Cryptantha confertiflora
Cryptantha decipiens
Cryptantha dumetorum
Cryptantha nevadensis
Cryptantha virginensis
Delphinium parishii
Descurainia pinnata
Ephedra fasciculata
Ephedra torreyana
Eriogonum fasciculatum var. polifolium
Eriogonum inflatum
Eriogonum trichopes
Eriophyllum lanosum
Erodium cicutarium

Redstone Area (Continued)

Galium stellatum var. eremicum
Gilia scopulorum
Gutierrezia microcephala
Krameria erecta
Krascheninnikovia lanata
Larrea tridentata
Lepidium fremontii
Lesquerella tenella
Malcomia africana
Malacothrix glabrata
Mentzelia involucrata
Mentzelia obscura
Mirabilis bigelovii
Monardella odoratissima
Mortonia utahensis
Nemacladus sp.
Nama demissa
Oenothera caver
Opuntia basilaris
Oenothera cavernae
Pectocarya platycarpa
Pectocarya recurvata
Penstemon palmeri
Petalonyx parryi
Perityle emoryi
Peucephyllum schottii
Phacelia affinis
Phacelia crenulata
Phacelia cryptantha
Phacelia distans
Phacelia palmeri
Phacelia rotundifolia
Phacelia vallis-mortae
Phorodendron californica
Plantago ovata
Pleuraphis rigida
Pleurocoronis pluriseta
Poa bigelovii
Psorothamnus fremontii
Pterostegia drymarioides
Rafinesquia neomexicana

Redstone Area (Continued)

Salvia columbariae
Salazaria mexicana
Schismus barbatus
Sphaeralcea ambigua
Stanleya pinnata
Stephanomeria pauciflora
Streptanthella longirostris
Stylocline micropoides
Tamarix ramosissima
Tidestromia oblongifolia
Stylocline micropoides
Tiquilia latior
Tridens muticus
Vulpia octoflora
Xanthisma spinulosum var. gooddingii
Xylorhiza tortifolia

PLANT LIST

Gypsum Outcrops South of Redstone Rest Area

Acacia greggii
Ambrosia dumosa
Amphipappus sphaerocephalus
Anulocaulis leisolenus
Atriplex hymenelytra
Bromus madritensis ssp. rubens
Camissonia brevipes
Camissonia refracta
Chaenactis carphoclinia
Chorizanthe brevicornu
Chorizanthe rigida
Calochortus flexuosus
Cryptantha angustifolia
Delphinium andersonii
Echinomastus johnsonii
Enceliopsis argophylla
Ephedra fasciculata
Eriogonum, pusillum
Eriogonum trichopes
Eriogonum inflatum
Eriophyllum lanatum
Erodium cicutarium
Erodium texanum
Eschscholzia glyptosperma
Krameria erecta
Larrea tridentata
Lesquerella tenella
Mentzelia tricuspis
Mirabilis bigelovii
Opuntia basilaris
Pectocarya recurvata
Phacelia crenulata
Plantago ovata
Pleuraphis rigida
Prunus fasciculata
Schismus sp.
Sphaeralcea ambigua

PLANT LIST

North Shore Road to Cottonwood Spring

Acacia greggii
Androstegium breviflorum
Ambrosia dumosa
Ambrosia salsola
Aristida purpurea
Astragalus preussii
Atrichoseris platyphylla
Atriplex hymenelytra
Atriplex polycarpa
Baccharis sergiloides
Bebbia juncea
Camissonia brevipes
Camissonia multijuga
Chamaesyce albomarginata
Cuscuta californica
Dalea mollissima
Dasyochloa pulchella
Encelia farinosa
Ephedra fasciculata
Eriogonum trichopes
Eriogonum inflatum
Ferocactus cylindraceus
Gilia latifolia
Gutierrezia microcephala
Langloisia setosissima
Larrea tridentata
Lepidium fremontii
Lesquerella tenella
Mentzelia tricuspidis
Mirabilis bigelovii
Mohavea breviflora
Nicotiana oblongifolia
Opuntia basilaris
Perityle emoryi
Peucephyllum schottii
Phacelia pulchella var. gooddingii
Phorodendron californica
Physalis crassifolia
Plantago ovata

North Shore Road to Cottonwood Spring (Continued)

Pleuraphis rigida
Pleurocoronis pluriseta
Prosopis glandulosa var. *torreyana*
Populus fremontii
Prenanthes exiguus
Psoralea fremontii
Salsola sp.
Schismus sp.
Sphaeralcea ambigua
Stanleya pinnata
Stephanomeria exiguus
Tamarix ramosissima
Tidestromia oblongifolia
Tiquilia latior

PLANT LIST

Gypsum Outcrops Along NW Slope of Razorback Ridge

Acacia greggii
Achnatherum speciosum
Ambrosia dumosa
Ambrosia salsola
Amphipappus fremontii
Anulocaulis leisolenus
Arctomecon californica
Aristida purpurea
Atriplex confertifolia
Atriplex hymenelytra
Atriplex polycarpa
Bromus madritensis ssp. rubens
Chamaesyce polycarpa
Chilopsis linearis
Conyza canadensis
Delphinium sp.
Echinocactus polycephalus
Echinomastus johnsonii
Encelia farinosa
Enceliopsis argophylla
Ephedra fasciculata
Eriogonum fasciculatum
Eriogonum inflatum
Eriogonum insigne
Eucnide urens
Galium stellatum
Gutierrezia sarothrae
Krameria erecta
Krascheninnikovia lanata
Larrea tridentata
Lepidium fremontii
Mortonia utahensis
Perityle emoryi
Phacelia palmeri
Physalis crassifolia
Pleuraphis rigida
Psathyrotes pilifera
Psoralea fremontii
Salazaria mexicana

Gypsum Outcrops Along NW Slope of Razorback Ridge (Continued)

Sarcostemma hirtellum
Sphaeralcea ambigua
Stephanomeria pauciflora
Tidestromia oblongifolia
Tiquilia canescens

PLANT LIST

North Shore Road to Callville Bay

Acacia greggii
Achnatherum hymenoides
Achnatherum speciosum
Allionia incarnata
Ambrosia dumosa
Ambrosia salsola
Antirrhinum filipes
Aristida purpurea
Atrichoseris platyphylla
Atriplex canescens
Atriplex hymenelytra
Bebbia juncea
Brassica juncea
Brassica tournefortii
Brickellia atractyloides
Brickellia desertorum
Bromus madritensis ssp. rubens
Calycoseris parryi
Calycoseris wrightii
Camissonia boothii
Camissonia brevipes
Camissonia claviformis
Camissonia multijuga
Camissonia refracta
Camissonia walkeri ssp. tortilis
Chaenactis carphoclinia
Chaenactis fremontii
Chamaesyce albomarginata
Chamaesyce polycarpa
Cheilanthes parryi
Chilopsis linearis
Chorizanthe brevicornu
Chorizanthe rigida
Cryptantha angustifolia
Cryptantha maritima
Cryptantha nevadensis
Cryptantha utahensis
Cuscuta californica
Cylindropuntia echinocarpa

North Shore Road to Callville Bay (Continued)

Cyperus odoratus
Dasyochloa pulchella
Dalea mollissima
Descurainia pinnata
Echinocactus polycephalus
Encelia farinosa
Ephedra fasciculata
Ephedra nevadensis
Ephedra viridis
Ephedra torreyana
Eremalche rotundifolia
Ericameria paniculata
Eriogonum brachypodium
Eriogonum deflexum
Eriogonum fasciculatum
Eriogonum inflatum
Eriogonum insigne
Eriogonum nidularium
Eriogonum palmerianum
Eriogonum pusillum
Eriogonum thomasi
Eriogonum trichopes
Eriophyllum lanatum
Erodium cicutarium
Erodium texanum
Eschscholzia glyptosperma
Eschscholzia minutiflora
Eucnide urens
Ferocactus cylindraceus
Gilia filiformis
Gilia latifolia
Gilia scopulorum
Gutierrezia microcephala
Gutierrezia sarothrae
Geraea canescens
Heliotropium curassavicum
Isocoma acradenia var. bracteosa
Krameria erecta
Langloisia setosissima
Larrea tridentata
Lepidium fremonti

North Shore Road to Callville Bay (Continued)

Lepidium lasiocarpum
Lesquerella tenella
Lotus salsuginosus
Lupinus arizonicus
Malacothrix glabrata
Malcomia africana
Mammillaria tetrancistra
Mentzelia tricuspis
Mimulus bigelovii
Mirabilis bigelovii
Nama demissum
Nemacladus glanduliferus
Nicotiana obtusifolia
Oenothera caespitosa
Oenothera deltoidea
Opuntia basilaris
Palafoxia arida
Parietaria pennsylvanica
Pectocarya heterocarpa
Pectocarya recurvata
Perityle emoryi
Petalonyx nitidus
Petalonyx parryi
Peucephyllum schottii
Phacelia crenulata
Phacelia pulchella var. gooddingii
Phacelia rotundifolia
Physalis crassifolia
Plantago ovata
Pleuraphis rigida
Pleurocoronis pluriseta
Pluchea sericea
Prenanthes exigua
Psathyrotes ramosissima
Psoralea fremontii
Pterostegia drymarioides
Rafinesquia neomexicana
Salsola paulsenii
Salvia columbariae
Salvia mohavensis
Sarcostemma hirtellum

North Shore Road to Callville Bay (Continued)

Schismus arabicus
Senecio mohavensis
Sphaeralcea ambigua
Stephanomeria exigua
Stephanomeria pauciflora
Streptanthella longirostris
Stylocline micropoides
Tamarix ramosissima
Thymophylla pentachaeta var. belenidium
Tidestromia oblongifolia
Tiquilia latior
Trichoptilium incisum
Xanthisma spinulosum var. gooddingii
Xylorhiza tortifolia

PLANT LIST

Sandstone Spring, Pinto Valley

Acacia greggii
Achnatherum hymenoides
Achnatherum speciosum
Ambrosia dumosa
Amphipappus fremontii
Amsinckia tessellata
Anemone tuberosa
Aristida purpurea
Bebbia juncea
Brickellia longifolia
Bromus madritensis ssp. rubens
Calycoseris wrightii
Camissonia walkeri ssp. tortilis
Chaenactis fremontii
Cheilanthes parryi
Cryptantha angustifolia
Cryptantha barbigerata
Cryptantha maritima
Cryptantha nevadensis
Cryptantha pterocarya
Cryptantha racemosa
Cryptantha utahensis
Cynodon dactylon
Descurainia pinnata
Echinocereus engelmannii
Encelia farinosa
Ephedra fasciculata
Ephedra torreyana
Eriogonum fasciculatum
Eriogonum heermannii var. sulcatum
Eriogonum inflatum
Erodium cicutarium
Eucnide urens
Eucrypta micrantha
Galium stellatum
Gilia scopulorum
Gutierrezia sarothrae
Krameria erecta
Larrea tridentata

Sandstone Spring, Pino Valley (Continued)

Lepidium fremontii
Lycium andersonii
Mortonia utahensis
Nicotiana oblongifolia
Opuntia basilaris
Pectocarya recurvata
Phacelia crenulata
Phorodendron californica
Physalis crassifolia
Plantago ovata
Pleuraphis rigida
Pleurocoronis pluriseta
Polypogon monspeliensis
Prosopis glandulosa var. torreyana
Prunus fasciculata
Psoralea fremontii
Pterostegia drymarioides
Rafinesquia neomexicana
Sarcostemma hirtellum
Schismus arabicus
Sphaeralcea ambigua
Stephanomeria pauciflora
Thamnosma montana
Vulpia octoflora

PLANT LIST

Last Chance Cove Area

Achnatherum speciosum
Ambrosia salsola
Ambrosia dumosa
Amphipappus fremontii
Amsinckia tessellata
Bebbia juncea
Brickellia desertorum
Bromus madritensis ssp. rubens
Calycoseris wrightii
Camissonia brevipes
Camissonia refracta
Chaenactis carphoclinia
Chaenactis fremontii
Cheilanthes parryi
Chorizanthe brevicornu
Cryptantha angustifolia
Cryptantha maritima
Cryptantha nevadensis
Cryptantha pterocarya
Cryptantha utahensis
Cuscuta californica
Cylindropuntia echinocarpa
Cyperus odoratus
Dalea mollissima
Datura wrightii
Delphinium parishii
Descurainia pinnata
Encelia farinosa
Eriogonum deflexum
Eriogonum fasciculatum
Eriogonum inflatum
Erodium cicutarium
Eschscholzia minutiflora
Eucnide urens
Eucrypta micrantha
Ferocactus cylindraceus
Galium stellatum
Gutierrezia sarothrae
Heliotropium curassavicum

Last Chance Cove Area (Continued)

Krameria erecta
Larrea tridentata
Lepidium lasiocarpum
Lycium andersonii
Malacothrix glabrata
Melilotus alba
Nicotiana obtusifolia
Opuntia basilaris
Parietaria pensylvanica
Perityle emoryi
Petalonyx nitidus
Peucephyllum schottii
Phacelia crenulata
Phacelia distans
Phacelia pedicellata
Pleurocoronis pluriseta
Pluchea odorata
Pluchea sericea
Psoralea fremontii
Pterocarya recurvata
Pterostegia drymarioides
Rafinesquia neomexicana
Rumex sp.
Salvia mohavensis
Schismus arabicus
Sisymbrium irio
Sphaeralcea ambigua
Stephanomeria pauciflora
Tamarix ramosissima
Xanthisma spinulosum var. *gooddingii*

PLANT LIST

Boulder Wash and Drainages above
Guardian Peak and Saddle Mountain

Acacia greggii
Achnatherum speciosum
Ambrosia dumosa
Ambrosia salsola
Amsinckia tessellata
Asclepias subulata
Atrichoseris platyphylla
Atriplex hymenelytra
Bebbia juncea
Brassica tournefortii
Brickellia desertorum
Brickellia longifolia
Bromus madritensis ssp. rubens
Calycoseris wrightii
Camissonia brevipes
Camissonia multijuga
Camissonia refracta
Chaenactis carphoclinia
Chaenactis fremontii
Chamaesyce polycarpa
Chorizanthe brevicornu
Chorizanthe rigida
Cryptantha angustifolia
Cryptantha barbigera
Cryptantha decipiens
Cryptantha holoptera
Cryptantha nevadensis
Cryptantha pterocarya
Cryptantha racemosa
Cryptantha utahensis
Cuscuta californica
Cynodon dactylon
Cyperus odoratus
Dasyochloa pulchellum
Datura wrightii
Descurainia pinnata
Encelia farinosa
Enceliopsis argophylla

Boulder Wash and Drainages above
Guardian Peak and Saddle Mountain (Continued)

Ephedra fasciculata
Ephedra torreyana
Eremalche rotundifolia
Eriogonum brachypodum
Eriogonum deflexum
Eriogonum fasciculatum
Eriogonum inflatum
Eriogonum pusillum
Eriogonum thomasi
Erodium cicutarium
Eschscholzia minutiflora
Eucnide urens
Eucrypta micrantha
Geraea canescens
Gilia latifolia
Perityle emoryi
Petalonyx parryi
Peucephyllum schottii
Phacelia palmeri
Phacelia pedicellata
Phacelia pulchella var. gooddingii
Phacelia crenulata
Physalis crassifolia
Plantago ovata
Pleurocoronis pluriseta
Pluchea sericea
Poa bigelovii
Polypogon monspeliensis
Psoralea fremontii
Rafinesquia neomexicana
Salsola sp.
Salvia columbariae
Sarcostemma hirtellum
Schismus arabicus
Senecio mohavensis
Silene antirrhinum
Sonchus oleracea
Sphaeralcea ambigua
Stephanomeria pauciflora
Tamarix ramosissima

Boulder Wash and Dainages above
Guardian Peak and Saddle Mountain (Continued)

Tidestromia oblongifolia
Typha sp.
Xylorhiza tortifolia
Xanthisma spinulosum var. gooddingii
Gilia scopulorum
Gutierrezia sarothrae
Heliotropium curassavicum
Hordeum murinum
Langloisia setosissima
Larrea tridentata
Lepidium fremontii
Lepidium lasiocarpum
Malacothrix coulteri
Malacothrix glabrata
Malcomia africana
Mentzelia albicaulis
Mentzelia involucrata
Mentzelia obscura
Mentzelia tricuspis
Mimulus bigelovii
Mohavea brevisflora
Nama demissus
Nicotiana obtusifolia
Opuntia basilaris
Parietaria pensylvanica

PLANT LIST

Cleopatra Cove Area

Acacia greggii
Achnatherum speciosum
Ambrosia dumosa
Ambrosia salsola
Asclepias subulata
Bebbia juncea
Brickellia californica
Bromus madritensis ssp. rubens
Camissonia multijuga
Cassia armata
Cheilanthes parryi
Cryptantha angustifolia
Cylindropuntia acanthocarpa
Cryptantha racemosa
Datura wrightii
Encelia farinosa
Ephedra nevadensis
Ericameria paniculata
Eriogonum brachypodum
Eriogonum deflexum
Eriogonum fasciculatum
Eriogonum inflatum
Eucnide urens
Ferocactus cylindraceus
Galium stellatum
Gutierrezia sarothrae
Heliotropium curassavicum
Krameria erecta
Larrea tridentata
Mammillaria tetrancistra
Nicotiana obtusifolia
Opuntia basilaris
Peucephyllum schottii
Physalis crassifolia
Plantago ovata
Pleurócoronis pluriseta
Salvia columbariae
Salvia mohavensis
Schismus sp.

Cleopatra Cove (Continued)

Sphaeralcea ambigua
Tamarix ramosissima

PLANT LIST

Boulder Wash

Acacia greggii
Achnatherum speciosum
Ambrosia dumosa
Ambrosia salsola
Amsinckia tessellata
Asclepias subulata
Atrichoseris platyphylla
Atriplex hymenelytra
Bebbia juncea var. aspera
Brassica tournefortii
Brickellia desertorum
Brickellia longifolia
Bromus madritensis ssp. rubens
Calycoseris wrightii
Camissonia brevipes
Camissonia multijuga
Camissonia refracta
Chaenactis carphoclinia var. carphoclinia
Chaenactis fremontii
Chamaesyce polycarpa
Chorizanthe brevicornu
Chorizanthe rigida
Cryptantha angustifolia
Cryptantha barbiger
Cryptantha decipiens
Cryptantha holoptera
Cryptantha nevadensis
Cryptantha pterocarya
Cryptantha racemosa
Cryptantha utahensis
Cuscuta californica
Cynodon dactylon
Cyperus odoratus
Datura wrightii
Dasyochloa pulchella
Descurainia pinnata
Encelia farinosa
Enceliopsis argophylla
Ephedra fasciculata

Boulder Wash (Continued)

Ephedra torreyana
Eriogonum brachypodum
Eriogonum deflexum
Eriogonum fasciculatum var. polifolium
Eriogonum inflatum
Eriogonum pusillum
Eriogonum thomasi
Erodium cicutarium
Eschscholzia minutiflora
Eucnide urens
Eucrypta micrantha
Geraea canescens
Gilia latifolia
Gilia scopulorum
Gutierrezia sarothrae
Heliotropium curassavicum
Hordeum murinum
Langloisia setosissima var. setosissima
Larrea tridentata
Lepidium fremontii
Lepidium lasiocarpum var. lasiocarpum
Malacothrix coulteri
Malacothrix glabrata
Malcomia africana
Malva parviflora
Mentzelia albicaulis
Mentzelia involucrata
Mentzelia obscura
Mentzelia tricuspis
Mimulus bigelovii var. cuspidatus
Mohavea brevisflora
Nama demissum
Nicotiana obtusifolia
Opuntia basilaris
Parietaria pensylvanica
Perityle emoryi
Petalonyx parryi
Peucephyllum schottii
Phacelia crenulata
Phacelia palmeri
Phacelia pedicellata

Boulder Wash (Continued)

Phacelia pulchella
Physalis crassifolia
Plantago ovata
Pleurocoronis pluriseta
Pluchea sericea
Poa bigelovii
Polypogon monspeliensis
Psoralea fremontii var. fremontii
Rafinesquia neomexicana
Salsola sp.
Salvia columbariae
Sarcostemma hirtellum
Schismus arabicus
Senecio mohavensis
Sonchus oleraceus
Sphaeralcea ambigua
Stephanomeria pauciflora
Tamarix ramosissima
Tidestromia oblongifolia
Typha sp.
Xanthisma spinulosum var. gooddingii
Xylorhiza tortifolia var. tortifolia

PLANT LIST

Bearing Cove Area

Achnatherum speciosum
Ambrosia dumosa
Ambrosia salsola
Amsinckia tessellata
Antirrhinum filipes
Arctomecon californica
Aristida adscensionis
Asclepias subulata
Atrichoseris platyphylla
Atriplex hymenelytra
Bebbia juncea var. aspera
Brassica tournefortii
Brickellia atractyloides
Brickellia californica
Bromus madritensis ssp. rubens
Calycoseris wrightii
Camissonia brevipes ssp. brevipes
Camissonia multijuga
Camissonia refracta
Camissonia walkeri ssp. tortilis
Caulanthus lasiophyllus
Chaenactis carphoclinia var. carphoclinia
Chaenactis fremontii
Chamaesyce albomarginata
Chamaesyce polycarpa
Cheilanthes parryi
Chorizanthe brevicornu
Chorizanthe rigida
Cryptantha angustifolia
Cryptantha barbiger
Cryptantha maritima
Cryptantha nevadensis
Cryptantha pterocarya
Cryptantha racemosa
Cryptantha utahensis
Cuscuta sp.
Cylindropuntia acanthocarpa
Cylindropuntia echinocarpa
Cyperus odoratus

Bearing Cove Area (Continued)

Dalea mollis
Dalea mollissima
Datura wrightii
Dasyochloa pulchella
Echinocactus polycephalus
Echinomastus johnsonii
Encelia farinosa
Enceliopsis argophylla
Ephedra fasciculata
Ephedra nevadensis
Ericameria paniculata
Erigeron divergens
Eriogonum brachypodum
Eriogonum deflexum
Eriogonum fasciculatum var. polifolium
Eriogonum inflatum
Eriogonum maculatum
Eriogonum reniforme
Eriogonum thomasi
Eriophyllum lanosum
Erodium cicutarium
Eschscholzia glyptosperma
Eschscholzia minutiflora
Eucnide urens
Eucrypta chrysanthemifolia var. bipinnatifida
Ferocactus cylindraceus var. lecontei
Galium stellatum var. eremicum
Gilia latifolia
Gilia stellata
Gutierrezia sarothrae
Hedeoma nanum
Heliotropium curassavicum
Langloisia setosissima var. setosissima
Larrea tridentata
Lepidium lasiocarpum var. lasiocarpum
Linanthus demissus
Lorandersonia salicina
Lupinus arizonicus
Mammillaria tetrancistra
Mentzelia albicaulis
Mentzelia involucrata

Bearing Cove Area (Continued)

Mentzelia obscura
Mentzelia tricuspis
Mimulus bigelovii var. cuspidatus
Mirabilis bigelovii
Mohavea breviflora
Monoptilon bellidiforme
Monoptilon bellioides
Nama demissum
Nicotiana obtusifolia
Oligomeris linifolia
Opuntia basilaris
Orobanche cooperi
Parietaria pensylvanica
Perityle emoryi
Peucephyllum schottii
Phacelia crenulata
Phacelia pedicellata
Phacelia pulchella var. gooddingii
Phacelia rotundifolia
Physalis crassifolia
Plagiobothrys jonesii
Plantago ovata
Pleurocoronis pluriseta
Pluchea sericea
Polypogon monspeliensis
Prenanthes exigua
Prosopis glandulosa var. torreyana
Psoralea fremontii var. fremontii
Pterostegia drymarioides
Rafinesquia neomexicana
Rumex sp.
Salazaria mexicana
Salix gooddingii
Salsola tragus
Salvia mohavensis
Schismus arabicus
Senecio mohavensis
Sphaeralcea ambigua
Stephanomeria pauciflora
Stylocline micropoides
Tamarix ramosissima

Bearing Cove (Continued)

Thamnosma montana

Tidestromia oblongifolia

Trichoptilium incisum

Vulpia octoflora

Xanthisma spinulosum var. *gooddingii* [*Machaeranthera pinnatifida* ssp. *gooddingii*]

Xylorhiza tortifolia var. *tortifolia*

PLANT LIST

Echo Wash to Echo Bay

Acacia greggii
Achyronychia cooperi
Ambrosia dumosa
Ambrosia salsola
Amsinckia tessellata
Androstephium breviflorum
Antirrhinum filipes
Aristida purpurea
Astragalus acutirostris
Astragalus preussii var. laxiflorus
Atrichoseris platyphylla
Bebbia juncea var. aspera
Brassica tournefortii
Brickellia atractyloides
Brickellia californica
Bromus madritensis ssp. rubens
Calochortus flexuosus
Calycoseris wrightii
Camissonia boothii
Camissonia brevipes ssp. brevipes
Camissonia multijuga
Camissonia refracta
Capsella bursa-pastoris
Caulanthus lasiophyllus
Chaenactis carphoclinia var. carphoclinia
Chaenactis fremontii
Chamaesyce polycarpa
Cheilanthes parryi
Chilopsis linearis var. arcuata
Chorizanthe brevicornu
Cryptantha angustifolia
Cryptantha barbiger
Cryptantha maritima
Cryptantha nevadensis
Cryptantha pterocarya
Cryptantha utahensis
Cylindropuntia ramosissima
Cuscuta californica
Delphinium sp.

Echo Wash to Echo Bay (Continued)

Descurainia pinnata
Descurainia sophia
Draba cuneifolia
Echinocactus polycephalus
Echinomastus johnsonii
Encelia farinosa
Ephedra fasciculata
Ephedra torreyana
Eremalche rotundifolia
Ericameria paniculata
Eriogonum fasciculatum var. polifolium
Eriogonum inflatum
Eriogonum thomasii
Eriophyllum lanosum
Erodium cicutarium
Erodium texanum
Eschscholzia glyptosperma
Eschscholzia minutiflora
Eucnide urens
Eucrypta micrantha
Ferocactus cylindraceus var. lecontei
Geraea canescens
Gilia inconspicua var. inconspicua
Gilia scopulorum
Gutierrezia microcephala
Heliotropium curassavicum
Krameria erecta
Langloisia setosissima var. setosissima
Larrea tridentata
Lepidium fremontii
Lepidium lasiocarpum var. lasiocarpum
Lesquerella tenella
Linanthus demissus
Linanthus jonesii
Lotus tomentellus
Lupinus arizonicus
Lycium pallidum
Malacothrix coulteri
Malacothrix glabrata
Malcomia africana
Mentzelia albicaulis

Echo Wash to Echo Bay (Continued)

Mentzelia tricuspis
Mimulus bigelovii
Mohavea breviflora
Monoptilon bellioides
Nama demissum
Nemacladus glanduliferus
Nicotiana obtusifolia
Oligomeris linifolia
Opuntia basilaris
Parietaria pensylvanica
Pectocarya heterocarpa
Pectocarya recurvata
Perityle emoryi
Peucephyllum schottii
Phacelia affinis
Phacelia crenulata var. crenulata
Phacelia distans
Phacelia pedicellata
Phacelia pulchella var. gooddingii
Phacelia rotundifolia
Phacelia vallis-mortae
Physalis crassifolia
Plagiobothrys jonesii
Plantago ovata
Pleuraphis rigida
Pleurocoronis pluriseta
Poa annua
Porophyllum gracile
Psoralea fremontii var. fremontii
Pterostegia drymarioides
Rafinesquia neomexicana
Salvia columbariae
salvia mohavensis
Schismus sp.
Sisymbrium irio
Sonchus sp.
Sphaeralcea ambigua
Stephanomeria exigua
Stephanomeria pauciflora
Streptanthella longirostris
Stylocline micropoides

Echo Wash to Echo Bay

Tamarix ramosissima
Thysanocarpus curvipes
Tiquilia canescens
Tiquilia latior
Vulpia octoflora

PLANT LIST

Pinto Valley

Acacia greggii
Achnatherum speciosum
Allionia incarnata
Ambrosia dumosa
Ambrosia salsola
Amphipappus fremontii
Amsinckia tessellata
Anemone tuberosa
Anulocaulis leisolenus var. leisolenus
Arctomecon californica
Argemone corymbosum
Aristida purpurea
Asclepias subulata
Astragalus nuttallianus var. imperfectus
Astragalus preussii var. laxiflorus
Atrichoseris platyphylla
Atriplex confertifolia
Atriplex hymenelytra
Baccharis sergiloides
Brickellia atractyloides
Brickellia desertorum
Bromus berterianus
Bromus madritensis ssp. rubens
Calochortus flexuosus
Calycoseris wrightii
Camissonia boothii
Camissonia brevipes ssp. brevipes
Camissonia multijuga
Camissonia refracta
Camissonia walkeri ssp. tortilis
Caulanthus lasiophyllus
Chaenactis carphoclinia var. carphoclinia
Chaenactis fremontii
Chaenactis macrantha
Cheilanthes parryi
Chorizanthe brevicornu
Chorizanthe rigida
Cryptantha angustifolia
Cryptantha barbiger

Pinto Valley (Continued)

Cryptantha decipiens
Cryptantha nevadensis
Cryptantha pterocarya
Cryptantha racemosa
Cryptantha utahensis
Cuscuta californica
Cylindropuntia echinocarpa
Dalea mollissima
Dasyochloa pulchella
Delphinium parishii
Descurainia pinnata
Draba cuneifolia
Echinocactus polycephalus
Echinomastus johnsonii
Encelia farinosa
Enceliopsis argophylla
Ephedra fasciculata
Ephedra torreyana
Ephedra viridis
Eriogonum brachypodum
Eriogonum fasciculatum var. polifolium
Eriogonum inflatum
Eriogonum thomasii
Eriogonum trichopes
Eriophyllum lanatum
Eriophyllum wallacei
Erodium cicutarium
Erodium texanum
Eschscholzia glyptosperma
Eucnide urens
Eucrypta micrantha
Ferocactus cylindraceus var. lecontei
Galium stellatum var. eremicum
Geraea canescens
Gilia latifolia
Gilia scopulorum
Grayia spinosa
Gutierrezia microcephala
Ipomopsis polycladon
Isocoma acradenia var. bracteosa
Krameria erecta

Pinto Valley (Continued)

Krascheninnikovia lanata
Langloisia setosissima var. setosissima
Larrea tridentata
Lepidium fremontii
Lepidium lasiocarpum var. lasiocarpum
Lesquerella tenella
Linanthus demissus
Linanthus jonesii
Lotus salsuginosus var. salsuginosus
Lycium andersonii
Malacothrix coulteri
Malacothrix glabrata
Malcomia africana
Mentzelia tricuspis
Mimulus bigelovii var. cuspidatus
Mirabilis bigelovii
Mortonia utahensis
Muhlenbergia microsperma
Nemacladus glanduliferus
Nicotiana obtusifolia
Oenothera cavernae
Oenothera deltoidea
Oligomeris linifolia
Opuntia basilaris
Parietaria pensylvanica
Pectocarya heterocarpa
Perityle emoryi
Peucephyllum schottii
Phacelia crenulata
Phacelia cryptantha
Phacelia palmeri
Phacelia pedicellata
Phacelia pulchella var. gooddingii
Phacelia rotundifolia
Phacelia vallis-mortae
Physalis crassifolia
Plantago ovata
Pleuraphis rigida
Pleurocoronis pluriseta
Poa bigelovii
Porophyllum gracile

Pinto Valley (Continued)

Prosopis glandulosa var. torreyana
Psoralea fremontii var. fremontii
Pterostegia drymarioides
Rafinesquia neomexicana
Salazaria mexicana
Salsola sp.
Salvia columbariae
Salvia mohavensis
Sarcostemma hirtellum
Schismus sp.
Scopulophila rixfordii
Silene antirrhina
Sphaeralcea ambigua var. ambigua
Stanleya pinnata var. pinnata
Stephanomeria pauciflora
Stylocline micropoides
Suaeda moquinii
Tamarix ramosissima
Thysanocarpus curvipes
Tidestromia oblongifolia
Tiquilia canescens
Tiquilia latior
Vulpia octoflora
Xanthisma spinulosum var. gooddingii
Xylorhiza tortifolia var. tortifolia

APPENDIX III

BLACK MOUNTAINS, CLARK COUNTY, NEVADA
WESLEY E. NILES HERBARIUM ACCESSIONS

Accession No.	Taxon
57895	<i>Acacia greggii</i>
57283	<i>Acamptopappus sphaerocephalus</i>
57297	<i>Achnatherum speciosum</i>
57348	<i>Allionia incarnata</i>
57302	<i>Ambrosia dumosa</i>
57232	<i>Amsinckia tessellata</i> var. <i>tessellata</i>
57365	<i>Androstephium breviflorum</i>
57956	<i>Androstephium breviflorum</i>
57274	<i>Anemone tuberosa</i>
57337	<i>Antirrhinum filipes</i>
57951	<i>Antirrhinum filipes</i>
57261	<i>Argemone corymbosa</i>
57323	<i>Aristida adscensionis</i>
57259	<i>Aristida purpurea</i>
58882	<i>Asclepias subulata</i>
57943	<i>Astragalus acutirostris</i>
58106	<i>Astragalus nuttallianus</i> var. <i>imperfectus</i>
57367	<i>Astragalus pruessii</i>
57932	<i>Astragalus pruessii</i> var. <i>laxiflorus</i>
57935	<i>Atrichoseris platyphylla</i>
57234	<i>Atriplex hymenelytra</i>
58312	<i>Atriplex polycarpa</i>
58310	<i>Baccharis brachyphylla</i>
57329	<i>Bebbia juncea</i> var. <i>aspera</i>
57334	<i>Bouteloua trifida</i>
58849	<i>Brassica tournefortii</i>
57291	<i>Brickellia atractyloides</i>
58897	<i>Brickellia desertorum</i>
58095	<i>Bromus carinatus</i>
57256	<i>Bromus trinii</i>
57278	<i>Bromus trinii</i>
57930	<i>Calycoseris wrightii</i>
58851	<i>Calycoseris wrightii</i>
57335	<i>Camissonia boothii</i>
57236	<i>Camissonia brevipes</i> ssp. <i>brevipes</i>
57338	<i>Camissonia chamaenerioides</i>
58303	<i>Camissonia multijuga</i>

57305	<i>Camissonia refracta</i>
57265	<i>Camissonia walkeri</i> ssp. <i>tortilis</i>
57313	<i>Caulanthus lasiophyllus</i>
57298	<i>Ceratoides lanata</i>
57309	<i>Chaenactis carphoclinia</i>
58867	<i>Chaenactis carphoclinia</i> var. <i>carphoclinia</i>
57929	<i>Chaenactis fremontii</i>
58868	<i>Chaenactis fremontii</i>
58094	<i>Chaenactis macrantha</i>
57237	<i>Cheilanthes parryi</i>
57273	<i>Cheilanthes parryi</i>
58114	<i>Cheilanthes parryi</i>
57886	<i>Chilopsis linearis</i> var. <i>arcuata</i>
58883	<i>Chorizanthe rigida</i>
57353	<i>Chrysothamnus paniculatus</i>
58319	<i>Chrysothamnus paniculatus</i>
58901	<i>Chrysothamnus paniculatus</i>
57292	<i>Cryptantha angustifolia</i>
57358	<i>Cryptantha angustifolia</i>
57947	<i>Cryptantha angustifolia</i>
57246	<i>Cryptantha barbiger</i>
57289	<i>Cryptantha barbiger</i>
58865	<i>Cryptantha barbiger</i>
58889	<i>Cryptantha barbiger</i>
57266	<i>Cryptantha circumscissa</i>
57303	<i>Cryptantha confertiflora</i>
57314	<i>Cryptantha decipiens</i>
58860	<i>Cryptantha decipiens</i>
57316	<i>Cryptantha dumetorum</i>
58093	<i>Cryptantha gracilis</i>
58857	<i>Cryptantha holoptera</i>
58902	<i>Cryptantha inaequata</i>
57342	<i>Cryptantha maritima</i>
57954	<i>Cryptantha maritima</i>
57318	<i>Cryptantha nevadensis</i>
57252	<i>Cryptantha pterocarya</i>
58115	<i>Cryptantha racemosa</i>
58304	<i>Cryptantha racemosa</i>
58856	<i>Cryptantha racemosa</i>
57254	<i>Cryptantha utahensis</i>
58869	<i>Cryptantha utahensis</i>
57339	<i>Cryptantha virginensis</i>
57359	<i>Cuscuta californica</i>

57340	<i>Cynanchum utahense</i>
58879	<i>Dalea mollis</i>
57317	<i>Delphinium parishii</i>
57255	<i>Descurainia pinnata</i>
57287	<i>Descurainia pinnata</i>
57346	<i>Draba cuneifolia</i>
57330	<i>Dyssodia cooperi</i>
57250	<i>Encelia farinosa</i>
57357	<i>Ephedra fasciculata</i>
57891	<i>Ephedra fasciculata</i>
58015	<i>Ephedra fasciculata</i>
57276	<i>Ephedra torreyana</i>
58113	<i>Ephedra torreyana</i>
58894	<i>Erigeron divergens</i>
57352	<i>Eriogonum brachypodom</i>
58109	<i>Eriogonum brachypodium</i>
58101	<i>Eriogonum fasciculatum</i>
57301	<i>Eriogonum fasciculatum</i> var. <i>polifolium</i>
57296	<i>Eriogonum inflatum</i> var. <i>deflatum</i>
58309	<i>Eriogonum insigne</i>
57333	<i>Eriogonum maculatum</i>
58886	<i>Eriogonum maculatum</i>
57354	<i>Eriogonum palmerianum</i>
57356	<i>Eriogonum pusillum</i>
57937	<i>Eriogonum reniforme</i>
58877	<i>Eriogonum reniforme</i>
57350	<i>Eriogonum thomasi</i>
58853	<i>Eriogonum thomasi</i>
58887	<i>Eriogonum thomasi</i>
58112	<i>Eriogonum trichopes</i>
57233	<i>Erioneuron pulchellum</i>
57326	<i>Erioneuron pulchellum</i>
57306	<i>Eriophyllum lanosum</i>
57928	<i>Eriophyllum lanosum</i>
58111	<i>Eriophyllum lanosum</i>
57362	<i>Erodium texanum</i>
57892	<i>Erodium texanum</i>
57893	<i>Eschscholzia glyptosperma</i>
58104	<i>Eschscholzia glyptosperma</i>
57884	<i>Eschscholzia minutiflora</i>
57263	<i>Eucrypta chrysanthemifolia</i> var. <i>bipinnatifida</i>
57238	<i>Eucrypta micrantha</i>
57241	<i>Euphorbia albomarginata</i>

57991	<i>Filago californica</i>
57312	<i>Galium stellatum</i> var. <i>eremicum</i>
58903	<i>Galium stellatum</i> ssp. <i>eremicum</i>
57351	<i>Geraea canescens</i>
57360	<i>Gilia filiformis</i>
57949	<i>Gilia inconspicua</i> var. <i>inconspicua</i>
57324	<i>Gilia latifolia</i>
58854	<i>Gilia latifolia</i>
57308	<i>Gilia scopulorum</i>
58898	<i>Gutierrezia microcephala</i>
58307	<i>Gutierrezia sarothrae</i>
58899	<i>Gutierrezia sarothrae</i>
58893	<i>Hedeoma nanum</i>
57269	<i>Heliotropium curassavicum</i>
57264	<i>Hofmeisteria pluriseta</i>
57315	<i>Hofmeisteria pluriseta</i>
58315	<i>Isocoma acradenia</i> var. <i>bracteosa</i>
57282	<i>Krameria erecta</i>
57885	<i>Langloisia setosissima</i>
58105	<i>Langloisia setosissima</i>
57325	<i>Langloisia setosissima</i> ssp. <i>setosissima</i>
57295	<i>Lepidium fremontii</i>
57344	<i>Lepidium lasiocarpum</i> var. <i>lasiocarpum</i>
57281	<i>Lesquerella tenella</i>
57950	<i>Lesquerella tenella</i>
57934	<i>Linanthus demissus</i>
57942	<i>Linanthus jonesii</i>
58895	<i>Lorandersonia salicina</i>
58896	<i>Lorandersonia salicina</i>
58110	<i>Lotus salsuginosus</i> var. <i>salsuginosus</i>
57260	<i>Lotus strigosus</i>
57267	<i>Lotus tomentellus</i>
57940	<i>Lotus tomentellus</i>
57882	<i>Lupinus arizonicus</i>
57257	<i>Lupinus brevicaulis</i>
57251	<i>Lycium andersonii</i>
57361	<i>Machaeranthera pinnatifida</i> var. <i>gooddingii</i>
57933	<i>Malacothrix coulteri</i>
58016	<i>Malacothrix glabrata</i>
57275	<i>Malcolmia africana</i>
58861	<i>Malcolmia africana</i>
57896	<i>Mentzelia albicaulis</i>
57277	<i>Mentzelia involucrata</i>

57286	<i>Mentzelia obscura</i>
58855	<i>Mentzelia obscura</i>
57364	<i>Mentzelia pterosperma</i>
57363	<i>Mentzelia tricuspis</i>
57894	<i>Mentzelia tricuspis</i>
58884	<i>Mentzelia tricuspis</i>
57883	<i>Mimulus bigelovii</i> var. <i>cuspidatus</i>
57300	<i>Mirabilis bigelovii</i>
57945	<i>Mohavea breviflora</i>
58862	<i>Mohavea breviflora</i>
57887	<i>Monardella linoides</i>
58878	<i>Monoptilon bellidiforme</i>
57936	<i>Monoptilon bellioides</i>
57285	<i>Mortonia utahensis</i>
57888	<i>Nama demissum</i>
57320	<i>Nama pusillum</i>
57345	<i>Nemacladus glanduliferus</i>
57952	<i>Nemacladus glanduliferus</i>
57235	<i>Nicotiana trigonophylla</i>
57890	<i>Oenothera caespitosa</i>
57272	<i>Oenothera cavernae</i>
58108	<i>Oenothera cavernae</i>
57948	<i>Oligomeris linifolia</i>
58873	<i>Opuntia echinocarpa</i>
58880	<i>Orobanche cooperi</i>
57927	<i>Parietaria pensylvanica</i>
58102	<i>Parietaria pensylvanica</i>
58871	<i>Parietaria pensylvanica</i>
57341	<i>Pectocarya platycarpa</i>
57953	<i>Pectocarya platycarpa</i>
57240	<i>Pectocarya recurvata</i>
57311	<i>Penstemon palmeri</i>
57321	<i>Perityle emoryi</i>
57925	<i>Perityle emoryi</i>
58305	<i>Perityle emoryi</i>
58314	<i>Perityle emoryi</i>
57349	<i>Petalonyx nitidus</i>
58864	<i>Petalonyx parryi</i>
57327	<i>Peucephyllum schottii</i>
57946	<i>Peucephyllum schottii</i>
58100	<i>Phacelia crenulata</i> var. <i>ambigua</i>
57280	<i>Phacelia crenulata</i> var. <i>crenulata</i>
57881	<i>Phacelia crenulata</i> var. <i>crenulata</i>

57310	<i>Phacelia cryptantha</i>
58107	<i>Phacelia cryptantha</i>
57253	<i>Phacelia distans</i>
57941	<i>Phacelia distans</i>
58099	<i>Phacelia neglecta</i>
57270	<i>Phacelia palmeri</i>
57939	<i>Phacelia pedicellata</i>
58872	<i>Phacelia pedicellata</i>
57332	<i>Phacelia pulchella</i> var. <i>gooddingii</i>
57955	<i>Phacelia pulchella</i> var. <i>gooddingii</i>
58092	<i>Phacelia pulchella</i> var. <i>gooddingii</i>
58888	<i>Phacelia pulchella</i> var. <i>gooddingii</i>
58103	<i>Phacelia rotundifolia</i>
57304	<i>Phacelia vallis-mortae</i>
57244	<i>Phoradendron californicum</i>
57243	<i>Physalis crassifolia</i>
57284	<i>Plantago insularis</i>
57299	<i>Pleuraphis rigida</i>
58313	<i>Pluchea purpurascens</i>
58870	<i>Pluchea sericea</i>
58874	<i>Pluchea sericea</i>
57245	<i>Poa bigelovii</i>
57938	<i>Poa bigelovii</i>
58866	<i>Poa bigelovii</i>
57322	<i>Prenanthes exigu</i>
58098	<i>Prenanthes exigu</i>
57328	<i>Prosopis glandulosa</i> var. <i>torreyana</i>
58876	<i>Prosopis glandulosa</i> var. <i>torreyana</i>
57889	<i>Psathyrotes annua</i>
58308	<i>Psathyrotes pilifera</i>
57288	<i>Psoralea fremontii</i> var. <i>fremontii</i>
58096	<i>Psoralea fremontii</i> var. <i>fremontii</i>
57262	<i>Pterostegia drymarioides</i>
57343	<i>Pterostegia drymarioides</i>
57944	<i>Pterostegia drymarioides</i>
57248	<i>Rafinesquia neomexicana</i>
57279	<i>Salazaria mexicana</i>
58875	<i>Salix gooddingii</i>
57319	<i>Salsola paulsenii</i>
57258	<i>Salvia columbariae</i>
57331	<i>Salvia mohavensis</i>
57355	<i>Sarcostemma hirtellum</i>
58097	<i>Sarcostemma hirtellum</i>

58858	<i>Sarcostemma hirtellum</i>
58852	<i>Schismus arabicus</i>
57242	<i>Schismus barbatus</i>
58848	<i>Senecio mohavensis</i>
58863	<i>Senecio mohavensis</i>
58121	<i>Silene antirrhina</i>
58859	<i>Sonchus oleraceus</i>
57366	<i>Sphaeralcea ambigua</i> var. <i>ambigua</i>
57294	<i>Stanleya pinnata</i> var. <i>pinnata</i>
57307	<i>Streptanthella longirostris</i>
57368	<i>Stylocline micropoides</i>
57268	<i>Tamarix ramosissima</i>
58850	<i>Tamarix ramosissima</i>
57249	<i>Thamnosma montana</i>
57336	<i>Thymophylla pentachaeta</i> var. <i>belendium</i>
57239	<i>Thysanocarpus curvipes</i>
57931	<i>Thysanocarpus curvipes</i>
58311	<i>Tidestromia lanuginosa</i>
57880	<i>Tiquilia latior</i>
57347	<i>Trichoptilium incisum</i>
58881	<i>Trichoptilium incisum</i>
57271	<i>Tridens muticus</i>
57247	<i>Vulpia octoflora</i>
57290	<i>Vulpia octoflora</i>
57293	<i>Xylorhiza tortifolia</i> var. <i>tortifolia</i>
58885	<i>Xylorhiza tortifolia</i> var. <i>tortifolia</i>

APPENDIX IV

BLACK MOUNTAINS VASCULAR PLANTS LIFE FORMS

Annuals

Achyronychia cooperi
Amsinckia tessellata
Antirrhinum filipes [*Neogarrhinum filipes*]
Aristida adscensionis
Astragalus nuttallianus var. *imperfectus*
Astragalus acutirostris
Brassica tournefortii
Bromus berterianus [*Bromus trinii*]
Bromus madritensis ssp. *rubens*
Bromus tectorum
Calycoseris parryi
Camissonia boothii
Camissonia brevipes ssp. *brevipes*
Camissonia chamaenerioides
Camissonia claviformis
Camissonia multijuga
Camissonia refracta
Camissonia walkeri ssp. *tortilis*
Capsella bursa-pastoris
Caulanthus cooperi
Caulanthus lasiophyllus [*Guillenia lasiophylla*]
Chaenactis carphoclinia var. *carphoclinia*
Chaenactis fremontii
Chaenactis macrantha
Chamaesyce parishii
Chorizanthe brevicornu
Chorizanthe rigida
Conyza canadensis
Cryptantha angustifolia
Cryptantha barbigera
Cryptantha circumscissa
Cryptantha decipiens
Cryptantha dumetorum
Cryptantha gracilis
Cryptantha pectocarya
Cryptantha inaequata



LIFE FORMS (Continued)

Annuals

Cryptantha maritima
Cryptantha nevadensis
Cryptantha holoptera
Cryptantha pectocarya
Cryptantha utahensis
Cyperus odoratus
Cuscuta californica
Dalea mollis
Descurainia pinnata
Descurainia sophia
Draba cuneifolia
Eremalche rotundifolia
Erigeron divergens
Eriogonum brachypodum
Eriogonum deflexum
Eriogonum insigne
Eriogonum maculatum
Eriogonum nidularium
Eriogonum palmerianum
Eriogonum pusillum
Eriogonum reniforme
Eriogonum thomasii
Eriogonum trichopes
Eriophyllum lanosum
Eriophyllum wallacei
Erodium cicutarium
Erodium texanum
Eschscholzia glyptosperma
Eschscholzia minutiflora
Eucrypta chrysanthemifolia var. bipinnatifida
Eucrypta micrantha
Filago californica
Geraea canescens
Gilia filiformis
Gilia inconspicua var. inconspicua
Gilia latifolia
Gilia scopulorum
Gilia stellata

LIFE FORMS (Continued)

Annuals

Hordeum murinum
Ipomopsis polycladon
Langloisia setosissima var. *setosissima*
Lepidium lasiocarpum var. *lasiocarpum*
Lesquerella tenella
Linanthus demissus
Linanthus jonesii
Lotus salsuginosus var. *salsuginosus*
Lotus strigosus
Lotus tomentellus
Lupinus arizonicus
Lupinus brevicaulis
Lupinus sparsiflorus
Malacothrix coulteri
Malacothrix glabrata
Malcomia africana
Malva parviflora
Melilotus alba
Mentzelia albicaulis
Mentzelia involucrata
Mentzelia obscura
Mentzelia tricuspis
Mimulus bigelovii var. *cuspidatus*
Mohavea brevisflora
Monoptilon bellidiforme
Monoptilon bellioides
Muhlenbergia microsperma
Nama demissum
Nama pusillum
Nemacladus glanduliferus
Oenothera cavernae
Oenothera deltoides
Oligomeris linifolia
Orobanche cooperi
Oxytheca perfoliata
Palafoxia arida
Parietaria hespera
Parietaria pennsylvanica
Perityle emoryi

LIFE FORMS (Continued)

Annuals

Phacelia affinis
Phacelia crenulata var. ambigua
Phacelia crenulata var. crenulata
Phacelia cryptantha
Phacelia distans
Phacelia neglecta
Phacelia pedicellata
Phacelia pulchella var. gooddingii
Phacelia rotundifolia
Phacelia vallis-mortae
Plagiobothrys arizonicus
Plagiobothrys jonesii
Plantago ovata [Plantago insularis]
Poa bigelovii
Polypogon monspeliensis
Prenanthes exigua
Psathyrotes annua
Psathyrotes ramosissima
Pterostegia drymarioides
Rafinesquia neomexicana
Salsola paulsenii
Salsola tragus
Salvia columbariae
Schismus arabicus
Schismus barbatus
Senecio mohavensis
Silene antirrhina
Sisymbrium irio
Sonchus oleraceus
Stephanomeria exigua
Streptanthella longirostris
Stylocline micropoides
Thysanocarpus curvipes
Tidestromia lanuginosa
Trichoptilium incisum
Vulpia octoflora

LIFE FORMS (Continued)

Herbaceous perennials

Achnatherum hymenoides
Achnatherum parishii
Achnatherum speciosum
Adenophyllum cooperi
Allionia incarnata
Allium sp.
Androstephium breviflorum
Anemone tuberosa
Anulocaulis leisolenus var. leisolenus
Arctomecon californica
Argemone corymbosum
Aristida purpurea
Asclepias subulata
Astragalus preussii var. laxiflorus
Astragalus purshii
Bromus carinatus
Boechera perennans [Arabis perennans]
Bouteloua trifida
Calochortus flexuosus
Cheilanthes covillei
Cheilanthes parryi
Cirsium neomexicanum (also biennial)
Cryptantha confertiflora
Cryptantha racemosa
Cryptantha virginensis
Cynodon dactylon
Dalea mollissima
Tridens muticus
Datura wrightii
Dasyochloa pulchella [Erioneuron pulchellum]
Delphinium andersonii
Delphinium parishii
Enceliopsis argophylla
Eucnide urens (also subshrub)
Eriogonum inflatum
Hedeoma nanum
Heliotropium curassavicum
Heterostipa comata
Lepidium fremontii
Mammillaria tetrancistra

LIFE FORMS (Continued)

Herbaceous perennials

Mentzelia laevicaulis
Mentzelia oreophila
Mentzelia pterosperma
Monardella linoides
Monardella odoratissima
Muhlenbergia porteri
Nicotiana obtusifolia [Nicotiana trigonophylla]
Oenothera caespitosa
Opuntia bailaris
Penstemon palmeri
Physalis crassifolia
Pleuraphis rigida
Pleurocoronis pluriseta [Hofmeisteria pluriseta]
Pluchea odorata (also subshrub)
Porophyllum gracile (also subshrub)
Rumex sp.
Sphaeralcea ambigua var. ambigua
Stanleya pinnata var. pinnata
Stephanomeria pauciflora
Suaeda moquinii (also subshrub)
Thymophylla pentachaeta var. belenidium
Tidestromia oblongifolia
Xylorhiza tortifolia var. tortifolia
Tiquilia canescens
Tiquilia latior
Typha sp.
Xanthisma spinulosum var. gooddingii

Shrubs

Acacia greggii (also treelike)
Acamptopappus sphaerocephalus
Ambrosia dumosa
Ambrosia salsola [Hymenoclea salsola]
Amphipappus fremontii
Atriplex canescens
Atriplex confertifolia
Atriplex hymenelytra
Atriplex polycarpa

LIFE FORMS (Continued)

Shrubs

Brickellia longifolia
Baccharis brachyphylla
Baccharis sergiloides
Bebbia juncea var. *aspera*
Brickellia atractyloides
Brickellia californica
Brickellia desertorum
Brickellia microphylla
Chilopsis linearis var. *arcuata* (also treelike)
Cylindropuntia acanthocarpa (also treelike)
Cylindropuntia echinocarpa (also treelike)
Cylindropuntia ramosissima
Encelia farinosa
Ericameria paniculata [*Chrysothamnus paniculatus*]
Eriogonum fasciculatum var. *polifolium*
Eriogonum heermannii var. *sulcatum*
Galium stellatum var. *eremicum*
Grayia spinosa
Gutierrezia microcephala
Gutierrezia sarothrae
Krameria erecta
Larrea tridentata
Lorandersonia salicina
Lycium andersonii
Mortonia utahensis
Petalonyx nitidus
Petalonyx parryi
Peucephyllum schottii
Pluchea sericea
Prosopis glandulosa var. *torreyana* (also treelike)
Prunus fasciculata
Psoralea fremontii var. *fremontii*
Salazaria mexicana
Salvia mohavensis
Thamnosma montana
Tamarix ramosissima (also treelike)
Yucca schidigera (also treelike)

Trees

LIFE FORMS (Continued)

Acacia greggii (also shrub)
Chilopsis linearis var. *arcuata* (also shrub)
Populus fremontii
Prosopis glandulosa var. *torreyana* (also shrub)
Salix gooddingii
Tamarix ramosissima (also shrub)
Yucca schidigera (also shrub)

Vines

Cuscuta californica
Cynanchum utahense
Sarcostemma hirtellum

Grasses and grasslike plants

Achnatherum hymenoides
Achnatherum parishii
Achnatherum speciosum
Aristida adscensionis
Aristida purpurea
Bouteloua trifida
Bromus berterianus [*Bromus trinii*]
Bromus carinatus
Bromus madritensis ssp. *rubens*
Bromus tectorum
Cynodon dactylon
Cyperus odoratus
Dasyochloa pulchella [*Erioneuron pulchellum*]
Hordeum murinum
Muhlenbergia microsperma
Muhlenbergia porteri
Poa bigelovii
Polypogon monspeliensis
Schismus arabicus
Schismus barbatus
Tridens muticus
Vulpia octoflora

Maps and Figures

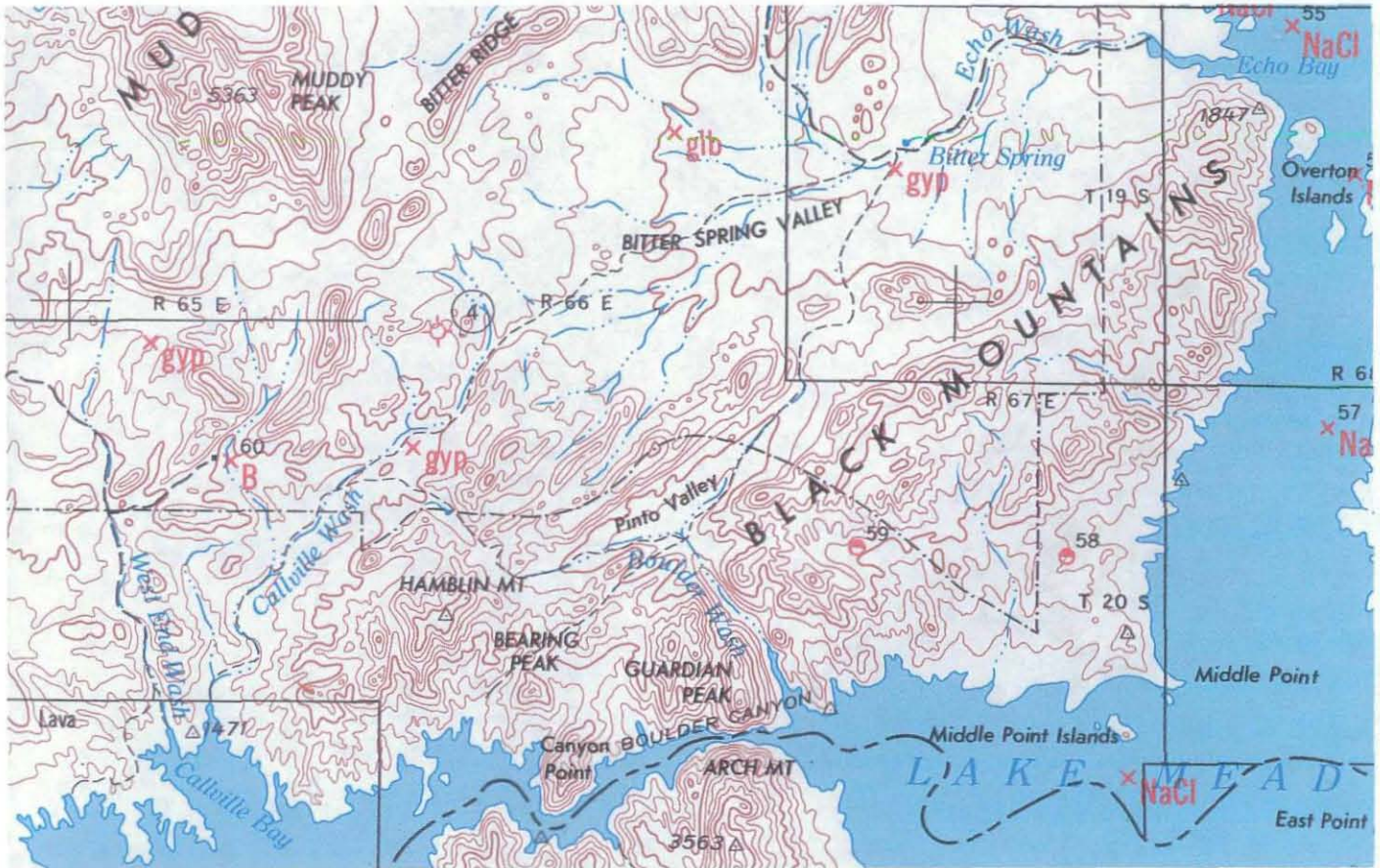


Figure 1. Map of the Black Mountains, Clark County, Nevada. (Longwell et al.,)

Geology

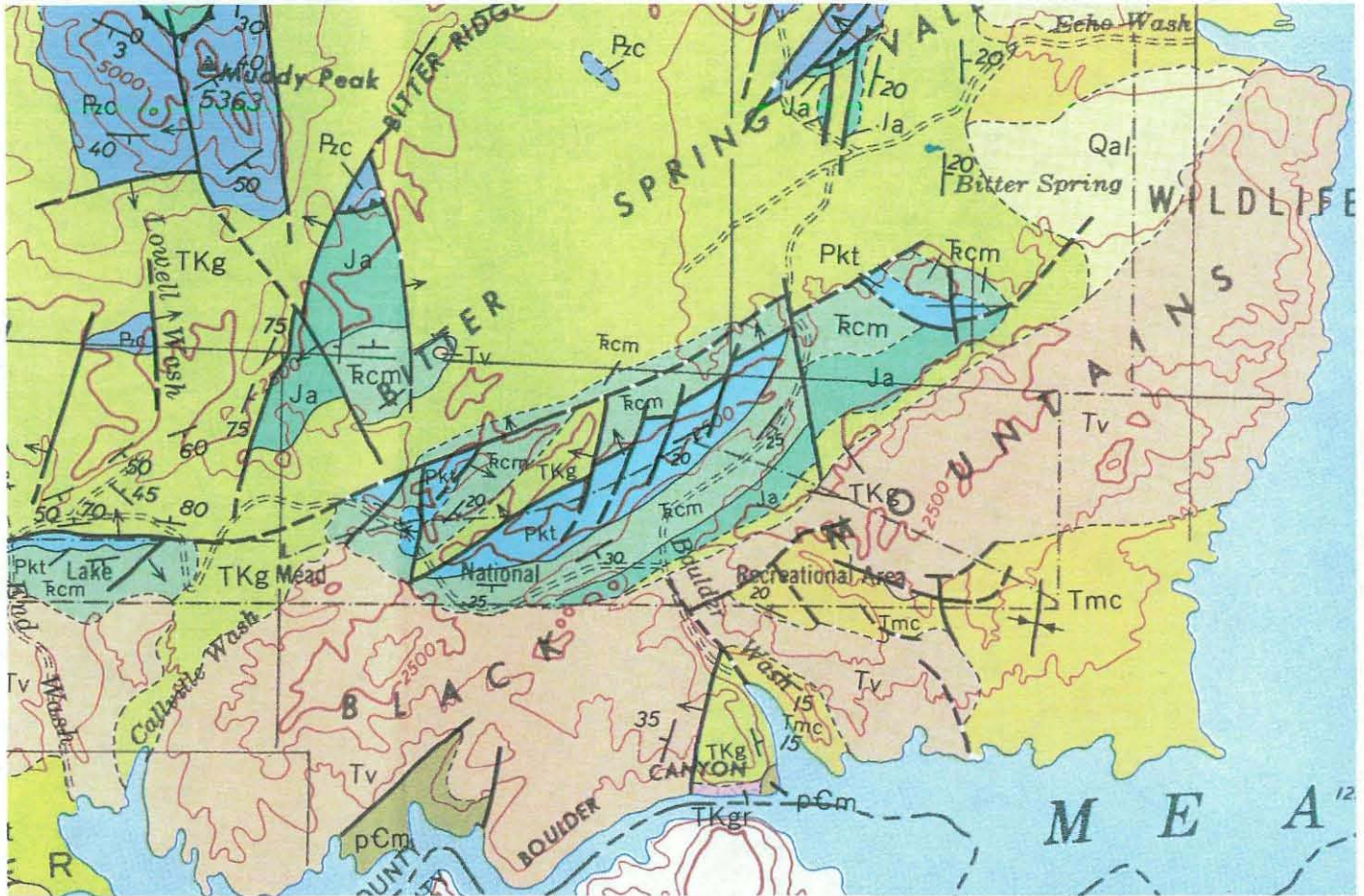


Figure 2. Geologic map of the Black, Clark County, Nevada. (Longwell et. al., 1965).

Key to Map abbreviations (youngest formation to oldest):

Qal	Quaternary Alluvium
Tmc	Tertiary Muddy Creek Formation
Tv	Tertiary undifferentiated volcanics
TKg	Tertiary Gale Hills Formation
Ja	Jurassic Aztec Sandstone.
Tcm	Triassic Chinle and Moenkopi Formations, undivided.
Pkt	Permian Kaibab, Toroweap, and Coconino Formations, and red beds, undivided.
pCm	Precambrian gneiss and schist.



Black Mountains, Clark County, Nevada



Figure 3. Sandstone Spring



Figure 4. Creosote bush-Bur sage Community on the Pinto Valley floor.

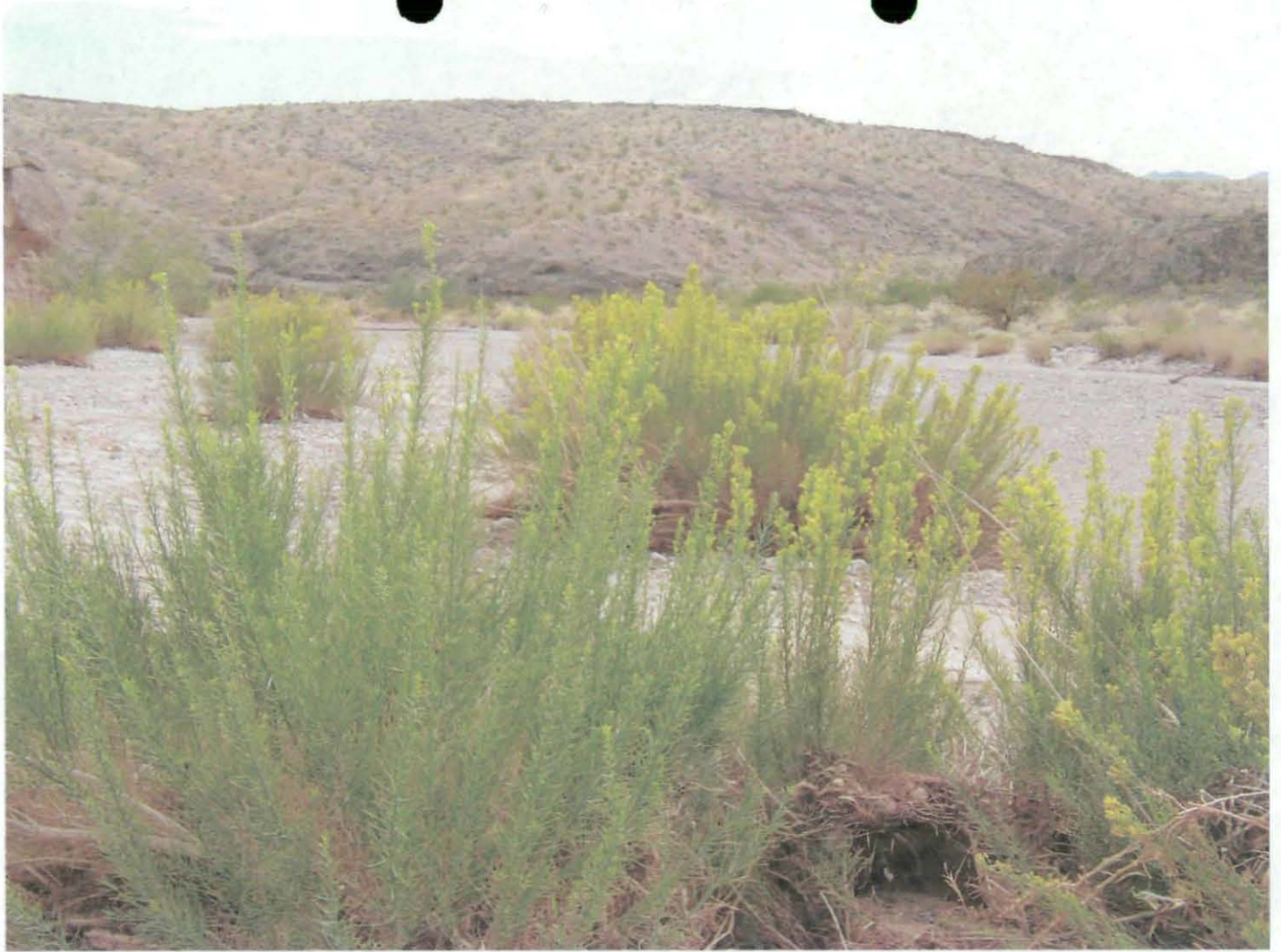


Figure 5. Desert Wash Community.



Figure 6. Lakeshore riparian community..



Figure 7. Gypsum soil.

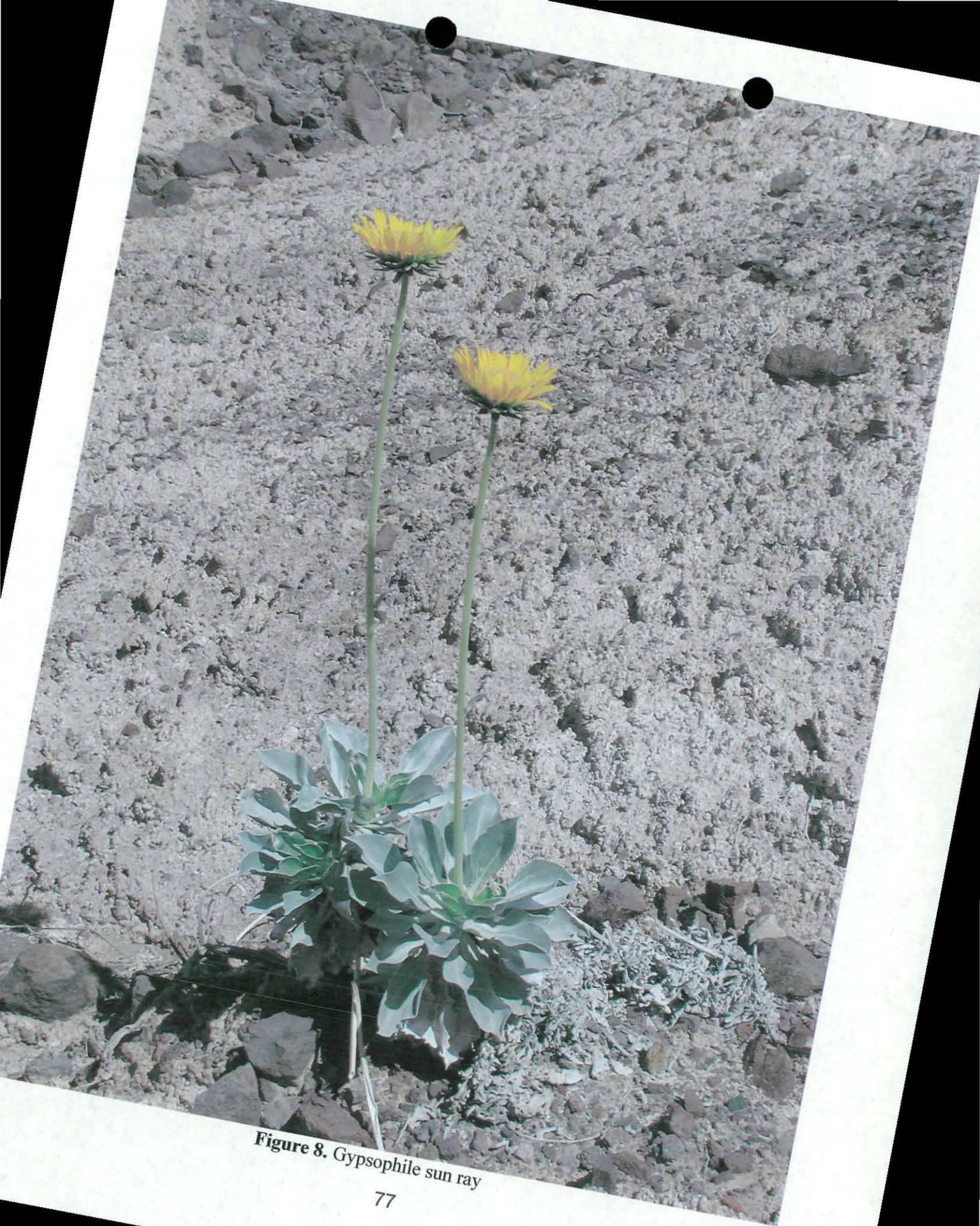


Figure 8. *Gypsophila* sun ray



Figure 9. Las Vegas bear poppy.



Figure 10. Ring stem.



Figure 11. Willow glow weed.



Figure 12. Willow glow weed.