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Flora and Vegetation
of the
Sierra Ancha Experimental
Forest, Arizona

by CHARLES P. PASE
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Fort Collins, Colorado
FOREST SERVICE

Raymond Price, Director
U. S. DEPARTMENT OF AGRICULTURE

Flora and Vegetation
of the
Sierra Ancha Experimental Forest,¹ Arizona

By

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and

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¹A portion of the Tonto National Forest, set aside for experimental purposes in 1932, under authority of the Secretary of the U. S. Department of Agriculture, and administered by the Rocky Mountain Forest and Range Experiment Station.

²Rocky Mountain Forest and Range Experiment Station, with central headquarters maintained in cooperation with Colorado State University at Fort Collins; Pase is located at Tempe in cooperation with Arizona State University.

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Flora and Vegetation of the Sierra Ancha Experimental Forest, Arizona

Charles P. Puse and R. Roy Johnson

The Sierra Ancha Experimental Forest, a field unit of the Rocky Mountain Forest and Range Experiment Station devoted primarily to watershed research, lies in Sierra Ancha, a mountainous area about midway between Globe and Young in Gila County, central Arizona. Although only 12,820 acres in size, its broad elevational range—from 3,550 to 7,724 feet—covers a variety of vegetation types.

This Paper summarizes the physical environment of the Forest, with a brief description of each of the major plant associations, and a catalog of species listing all known vascular plants collected since the Forest was established in 1932.

Physical Characteristics

Climate

Upper elevations in Sierra Ancha are characterized by cold moist winters, dry warm springs, and hot moist summers (fig. 1). The fall dry season so characteristic of much of the State is less pronounced here. Precipitation averages 33.4 inches per year, 11.0 inches (33 percent) of which fall from June through September. Annual precipitation has varied from 18.6 to 49.9 inches. Much of the winter precipitation falls as snow above 6,000 feet. Winter snowpack in the upper Workman Creek area, at 7,000 feet, often exceeds 4 feet.

In the intermediate elevation zone, between 4,800 and 6,000 feet, temperatures are much higher and relatively little winter precipitation occurs as snow, except in occasional years. Annual rainfall at the Sierra Ancha headquarters, at 5,100 feet elevation, averages 24.7 inches of which 7.5 inches (30 percent) falls from June through September. Annual rainfall has varied from 13.1 to 42.0 inches. A moderate secondary dry season usually begins as temperatures begin to drop, but is commonly of short duration (fig. 1).

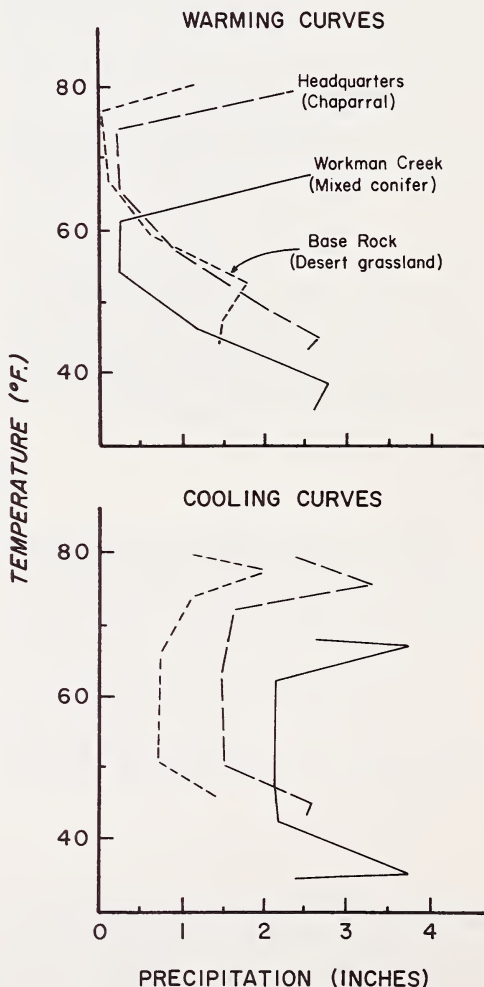


Figure 1.--Mean monthly temperatures plotted against median monthly precipitation at three climatic stations, Sierra Ancha Experimental Forest. End points of curves for Workman Creek are July and February; for other stations, August and January.

In the lower elevation zone at the south end of the Forest, low rainfall and high temperatures combine to make a hot, desertlike climate. Mean rainfall is 16.2 inches, but rainfall has varied from 10.2 to 22.6 inches. Rainfall distribution is not greatly different from that in the upper two zones, as 5.7 inches (35 percent) falls from June through September. A spring drought, more severe than in the higher elevation zones, usually extends from mid-April to mid-July. A less severe but still critical drought period occurs after the end of the summer rainy season, when temperatures are descending, yet still adequate for plant growth.

The striking differences in environments are apparent in the warming and cooling curves for the three elevation zones at Sierra Ancha based on median precipitation⁴ and mean temperatures (fig. 1). The Workman Creek station is in a small mountain park completely surrounded with ponderosa pine (*Pinus ponderosa*)⁵ and mixed conifer forest; Headquarters Station is well within the chaparral type, and on the edge of a strip of oak-woodland; the Base Rock Station is in the semidesert grassland, but only a quarter mile from elements of the southern desert shrub formation.

Geology

The Forest lies along the crest of the Sierra Ancha, a mountain range carved from sedimentary, metamorphic, and igneous rocks uplifted in a domelike structure. Several poorly to well defined faults cut the mountain mass.

Exposed formations within the Experimental Forest generally belong to the Apache Group of later Precambrian age. In descending order, these consist of Troy Sandstone and Quartzite, Mescal Limestone, Dripping Springs Quartzite,

⁴ Plant distribution is apt to be more responsive to median rather than mean precipitation, especially in arid or semiarid climates (Daubermire 1956). Where rainfall is low, a single large storm can greatly affect the mean rainfall value for many years, yet have little ecological effect on plant populations. Median values tend to be less distorted by these rare rainfall events, and presumably are more closely correlated with vegetation.

⁵ Authors of scientific names are given in the checklist.

Barnes Conglomerate, Pioneer Shale, and Scanlon Conglomerate. Vesicular basalt flows of Tertiary and/or Quaternary age (Darton 1925, Granger and Raup 1964) are present in some of the higher basins. Intruded within these formations at various horizons are sills of diabase, often deeply weathered where exposed. The Apache Group as a whole has been subjected to low-grade metamorphism, with the addition of silica which has increased the resistance of the rocks to mechanical and chemical weathering.

The Dripping Springs Quartzite, one of the most conspicuous geologic features, is dissected by numerous gorges at the extreme south end of the Forest. According to Shride, (1962) the thickness of the quartzite beds (including the basal member, Barnes Conglomerate) varies from 550 to 700 feet. Shallow weathering of this formation restricts moisture penetration to the shallow, fine-textured soil. As a consequence, normally deep-rooted shrubs and trees do poorly on this formation except where local topographic features permit deeper soil formation, as in pockets and at the toe of slopes. A large part of Parker and Pocket Creek watersheds lies in this formation, which helps explain the low retention storage capacity and unusually high water yields from these areas.

Soils

In the high-elevation zone at the north end of the Forest, surface soils are mostly of loam or clay-loam texture, with granular or crumb structure. Soil depth may vary from a few inches to more than 18 feet. Subsoils are mostly layered, and vary in texture from clay loams to clays. The area is primarily in conifer forest, and tree roots have been found to extend to a depth of at least 18 feet.

Soils in the intermediate elevation zone are mostly derived from deeply weathered medium- to coarse-grained diabase, locally mixed with talus from the steep Mescal Limestone and Dripping Springs Quartzites above. Horizons are ill defined, organic matter content is low, and the soils are almost structureless. Subsoils tend to be much lower in clay than soils derived from granites. Deep weathering permits shrub roots to penetrate to considerable depths. In a recent root distribution study, 13 grams of chaparral roots per cubic foot of soil were found at the 12-foot level, the maximum depth sampled. This was a substantially higher root

concentration than was found under conifer trees at the same depth, and suggests that chaparral shrubs probably send roots considerably deeper (U. S. D. A. Forest Service 1957). Root studies conducted in the chaparral of California also showed that dominant shrubs were rooted to a depth of 28 feet (Hellmers et al. 1955).

Soils developed on the lower elevation Dripping Springs Quartzite, Barnes Conglomerate, and Pioneer formations are shallow and fine textured, and probably fall within the reddish chestnut great soil group. The soil horizons are poorly defined. The entire profile contains a large amount of disintegrated quartzite rock, is noncalcareous and slightly acid, and contains a high percentage of silt and clay (Martin and Rich 1948).

Vegetation Types

Eight vegetation types are found on the Experimental Forest (fig. 2). From high elevation to low these are: mixed conifer, mountain park, ponderosa pine, chaparral, oak-woodland, desert grassland, and desert shrub. The riparian type is adjacent to the major streams, and cuts across all the other types. General descriptions of four of these have been published recently in connection with a wildlife habitat study (Reynolds and Johnson 1964). Vegetation types used here agree generally with Nichol (1952). Botanical nomenclature follows Hitchcock (1950) for grasses, Little (1953) for trees, and Kearney and Peebles (1960) for all others. Common names generally follow Kelsey and Dayton (1942). Because of intimate

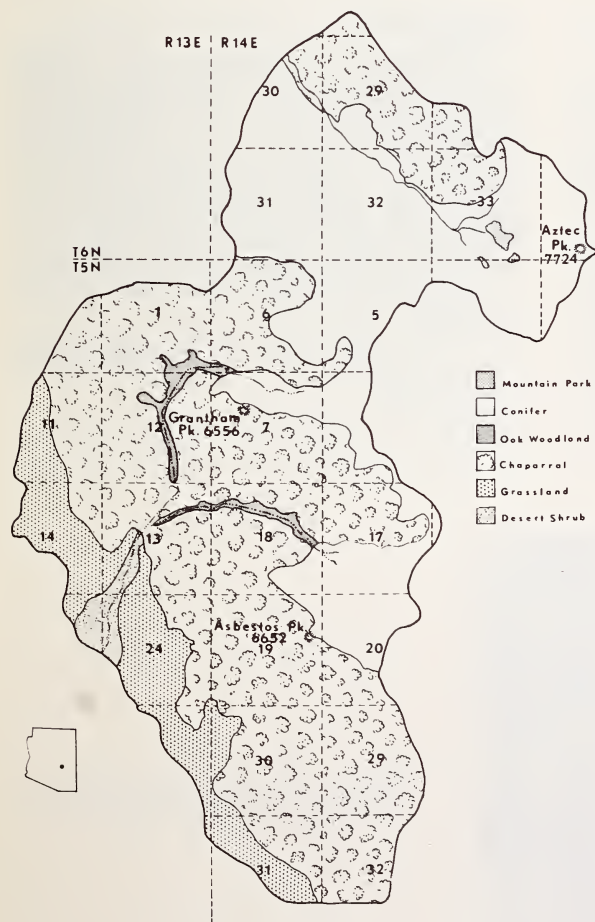


Figure 2.--Vegetation types on the Sierra Ancha Experimental Forest.

intermingling of types, the "conifer" type on the vegetation map (fig. 2) includes both mixed conifer and ponderosa pine. Acreage of the types is given below:

| Type: | Experimental Forest (acres) | Forest (percent) |
|-----------------------|--------------------------------|---------------------|
| Conifer ¹ | 3,776 | 29.5 |
| Mountain park | 30 | .2 |
| Oak-woodland | 131 | 1.0 |
| Chaparral | 7,302 | 57.0 |
| Desert grassland | 1,351 | 10.5 |
| Desert shrub | 162 | 1.3 |
| Riparian ² | 68 | .5 |
| Total | 12,820 | 100.0 |

¹Includes both pine-fir and ponderosa pine types.

²Based on estimated average width of 66 feet.

Mixed Conifer

Mixed conifer ranges from below 6,000 feet on cool, moist slopes to more than 7,500 feet in Workman Creek and Parker Creek drainages. The dominant trees are Douglas-fir (Pseudotsuga menziesii), white fir (Abies concolor), and ponderosa pine (fig. 3). Individual ponderosa pines usually attain greater size in the mixed conifer than in the pure ponderosa pine type. Understory trees are Gambel oak (Quercus gambelii) and New-Mexican locust (Robinia neomexicana). Quaking aspen (Populus tremuloides) commonly occurs at edges of clearings and in old burns. The main shrub scat-

tered along the forest floor is mountain snowberry (Symphoricarpos oreophilus).

The few herbaceous species which grow under the large trees are shade-tolerant species such as Canadian violet (Viola canadensis), several species of orchids including western rattlesnake-plantain (Goodyera oblongifolia), and nonphotosynthetic species such as coral-roots (Corallorhiza maculata, C. wisteriana and C. striata). During the summer rainy season fungi are common in decaying organic matter, such as old logs and duff, and mosses grow on rocks, soil, and logs. Species more common in small clearings and along roadsides include figwort (Scrophularia parviflora), red raspberry (Rubus strigosus), and strawberry (Fragaria ovalis).

Mountain Park

The major park is found on the Middle Fork of Workman Creek, in the mixed conifer vegetation type (fig. 4). Deep, fine soils and high rainfall contribute to a diverse flora. Clearings are bordered by dense stands of ponderosa pine, white fir, and Douglas-fir, interspersed with quaking aspen and Gambel oak. Clumps of Arizona walnut (Juglans major) are scattered within the park. Arroyo willow (Salix lasiolepis) forms dense colonies along washes. Thickets of Gambel oak, mountain snowberry, and roses (Rosa spp.) and the apple orchard (at the deserted Peterson Ranch) provide good wildlife cover.



Figure 3.--Mixed conifer stand at the head of Workman Creek. Dense shade restricts herbaceous understory.

Figure 4.--Small mountain park in the Middle Fork of Workman Creek.



Herbaceous plants are abundant. Grasses include Kentucky bluegrass (*Poa pratensis*), redtop (*Agrostis palustris*), and orchardgrass (*Dactylis glomerata*). Common bindweed (*Convolvulus arvensis*), skyrocket (*Gilia aggregata*), and several composites, including the common sunflower (*Helianthus annuus*) and ragleaf bahia (*Bahia dissecta*) grow throughout the clearings. Seeps and springs are surrounded by *Juncus* spp., *Cyperus* spp., *Carex* spp., and prairiemallow (*Sidalcea neomexicana*).

Ponderosa Pine

The ponderosa pine type ranges from approximately 5,500 feet on cool, moist slopes and in shaded canyons to 7,000 feet on drier

sites such as west-facing slopes or in shallow, rocky soils (fig. 5). Ponderosa pine is the dominant tree. On drier sites, New-Mexican locust, Emory oak (*Quercus emoryi*), and alligator juniper (*Juniperus deppeana*) are the main understory species. In cooler, moist areas, New-Mexican locust and Gambel oak occur as an understory. Herbaceous plants are few. Bracken (*Pteridium aquilinum*) is common locally following summer rains. Plants common along roadsides and in clearings include the colorful scarlet bugler (*Penstemon barbatus*), Fendler ceanothus (*Ceanothus fendleri*), and red and yellow pea (*Lotus wrightii*). Sparse grasses, usually most common in clearings, include mountain muhly (*Muhlenbergia montana*), bulb panicum (*Panicum bulbosum*), and Pringle needlegrass (*Stipa pringlei*).

Figure 5.--Ponderosa pine stand at Workman Creek.





Figure 6.--Dense oak-woodland community near Headquarters. Dominant tree is *Quercus arizonica*.

Oak-woodland

A small area of oak-woodland occurs in Parker and Pocket Creeks between 4,800 and 5,300 feet elevation. Treelike oaks dominate the overstory, while understory shrubs, where present, are mainly those common in the adjacent chaparral type. Arizona white oak (*Quercus arizonica*) and Emory oak are particularly abundant, while southwestern black cherry (*Prunus serotina* var. *rufula*) is common usually on the more mesic sites (fig. 6). California buckthorn (*Rhamnus californica*), rarely found in the adjacent chaparral, is fairly common on the cooler slopes. The attractive but

dangerous poison-ivy (*Rhus radicans*) is both widespread and abundant.

The herbaceous understory is rather sparse, except on the lower slopes adjacent to stream channels. Common plants include California brome (*Bromus carinatus*), fringed brome (*B. ciliatus*), blue wildrye (*Elymus glaucus*), deergrass (*Muhlenbergia rigens*), and purple geranium (*Geranium eremophilum*).

Chaparral

Chaparral reaches its best development on diabase-derived soils between 4,500 and 6,000 feet elevation (fig. 7). Where soils are thin,



Figure 7.--Dense mature stand of chaparral near western edge of Experimental Forest. *Quercus turbinella* is the dominant species.

overlying massive unfractured quartzite, chaparral stands become more open, with interspersed islands of grassland and forbs.

With few exceptions, characteristic chaparral shrubs are evergreen, broad sclerophylls. Most have deep, extensive root systems and the ability to resprout vigorously after fire. The few nonsprouting shrubs produce abundant seeds which germinate readily after fire (Pase 1965).

Shrub live oak (*Quercus turbinella*) is the most abundant shrub throughout the chaparral type on the Experimental Forest, often comprising 60 percent or more of the woody cover. Toward the upper elevations, common associated shrubs are true mountainmahogany (*Cercocarpus montanus*), Emory oak, Wright silktassel (*Garrya wrightii*), and Pringle manzanita (*Arctostaphylos pringlei*). Crown cover is usually high, and few understory forbs and grasses are present. At lower elevations where the type borders the desert grassland and desert shrub associations, common associated shrubs are skunkbush (*Rhus trilobata*), catclaw acacia (*Acacia greggii*), wait-a-bit (*Mimosa biuncifera*), Wright buckwheat (*Eriogonum wrightii*), and pointleaf manzanita (*Arctostaphylos pungens*). Shrubs are more scattered, and understory grasses and forbs, especially annuals, are fairly common. Scattered plants of pinyon (*Pinus edulis*), and one-seed and alligator junipers (*Juniperus monosperma* and *J. deppeana*) are sprinkled throughout the type, but are nowhere dominant.

Although the chaparral type is well adapted to fire, no large fires have occurred here for many years. Ring counts from occasional pine trees in the swales suggest an age of 78 years or more.

Desert Grassland

The grassland type lies mostly on the large area of Dripping Springs Quartzite near the south end of the Forest (fig. 8). Elevations range between 4,000 and 4,800 feet. Occasional plants of velvet mesquite (*Prosopis juliflora* var. *velutina*) are scattered throughout. The most abundant half-shrub is broom snakeweed (*Gutierrezia sarothrae*). Both pricklypears and chollas (*Opuntia* spp.) are common. *Mammillaria arizonica* is common but inconspicuous. Most perennial grasses are summer growing, and usually do not begin growth until the onset of the summer rains. Several species of annual grasses, and annual and perennial forbs, however, are abundant especially after late winter rains. Common perennial grasses include side-oats, hairy, and black gramas (*Bouteloua curtipendula*, *B. hirsuta*, and *B. eriopoda*), three-awns (*Aristida* spp.) and curly-mesquite (*Hilaria belangeri*) on upland sites. Where additional moisture is available, as in swales and rocky areas, coarser grasses such as cane bluestem (*Andropogon barbinodis*), green sprangletop (*Leptochloa dubia*), and Arizona cottontop (*Trichachne californica*) may be locally abundant.

Desert Shrub

The desert shrub area is largely confined to the breaks of the canyons and the steep sides of Parker Creek Canyon, mostly between 3,550 and 4,500 feet elevation (fig. 9).

Unlike the desert floor outside the Forest, perennial grasses are fairly common on the steep, rocky slopes in the protection of the



Figure 8.--Desert grassland on shallow, quartzite-derived soils near Base Rock.



Figure 9.--Desert shrub on rocky soils near the south end of the Experimental Forest.

canyon. Common species are generally those encountered in the desert grassland above. Yellow paloverde (Cercidium microphyllum) is a characteristic tree. Common shrubs include Fremont wolfberry (Lycium fremontii) and jojoba (Simmondsia chinensis). Saguaros (Cereus giganteus) occur in protected niches in the canyon walls, but are nowhere abundant. Pricklypears and chollas are common.

Riparian

One perennial stream (Workman Creek) and two intermittent streams (Parker and Pocket Creeks) originate in the Forest. The combined length of these channels is approximately 8.5 miles; they traverse all vegetative types on the Forest. Flow in Parker and Pocket Creeks is intermittent during most summers, but even when flow is interrupted scattered pools of

water remain in the channels, and some sub-surface water is available to plants along the streams (fig. 10).

In Workman Creek and in the upper half of Parker and Pocket Creeks, arborescent vegetation is dominated by Arizona alder (Alnus oblongifolia), bigtooth maple (Acer grandidentatum), and Arizona walnut. Shade-tolerant herbaceous plants form a lush understory. Common plants include fowl mannagrass (Glyceria striata), false-Solomonseal (Smilacina racemosa), and wanderer violet (Viola nephrophylla). Common lianas are canyon grape (Vitis arizonica) and thicket creeper (Parthenocissus inserta).

In the lower reaches of Parker and Pocket Creeks, growing conditions are more severe during most summers and few truly riparian herbaceous species from upper reaches thrive here. Arizona sycamore (Platanus wrightii) and Arizona walnut are dominant. Shrubs and



Figure 10.--Riparian vegetation along Parker Creek, within the chaparral type.

trees characteristic of the adjacent oak-woodland and chaparral zones encroach almost to the water's edge. Common herbaceous plants include spike bent (Agrostis exarata), water bent (A. semiverticillata), Rocky Mountain rust (Juncus saximontanus), and inland rush (J. interior var. neomexicana).

Plant Collections

Extensive plant collections have been made in the Sierra Ancha since the Experimental Forest was established. Most of these collections are deposited in the Forest Service Herbarium, Washington, D. C., and in herbaria at the Forest Hydrology Laboratory, Tempe, Arizona; Arizona State University at Tempe; and The University of Arizona at Tucson. Collectors who have added significantly to botanical exploration of the area in addition to the authors include Frank W. Gould, Elbert L. Little, Jr., Jerry M. Johnson, Barnard A. Hendricks, and Charles K. Cooperrider. Of these collections, only the ferns and fern allies have been reported (Little 1938). Liverworts of hepatics of the Sierra Anchas have also been reported by Little (1939), but are not included in the present paper. A preliminary checklist covering Sierra Ancha has been prepared by Johnson.⁶

Additions to the Known Arizona Flora

Two introduced species of grasses in the present checklist are not previously reported from the State. Collector's name and number follow in parentheses.

Agropyron intermedium introduced at Workman Creek. (C. P. Pase 1766).

Poa bulbosa introduced at Parker Creek. (C. P. Pase 1183).

Poa bulbosa was established in a trial planting about 1938, and has persisted, without spreading, to the present. Agropyron intermedium appears well established in clearcut or otherwise disturbed sites in the mixed conifer and ponderosa pine types on Workman Creek.

⁶Johnson, R. Roy. *The biota of Sierra Ancha, Gila County, Arizona. Master's Thesis, Univ. Ariz., Tucson. 114 pp. 1960.*

Distribution of Species

Distribution of species of the Sierra Ancha Experimental Forest was taken from floras by Kearney and Peebles (1960) and Tidestrom and Kittell (1941). The 726 species and 9 varieties reported fall into the following seven more-or-less natural geographic groups. Varieties are considered as separate taxa in this classification.

1. **Arizonan.**—Species of local range known only from Arizona. The following 13 endemic species and varieties comprise 1.8 percent of the flora:

Agave chrysantha
Agave toumeyana
Cimicifuga arizonica
Cupressus glabra
Echeveria collomae
Echeveria rusbyi
Echinocereus boyce-thompsoni var.
boyce-thompsoni
Echinocereus boyce-thompsoni var.
bonkeriae
Erigeron pringlei
Perityle ciliata
Phlox tenuifolia
Rumex orthoneurus
Sporobolus interruptus

Of these, Cimicifuga arizonica is particularly interesting, as it is known from only two other locations, both in central Arizona. Rumex orthoneurus, known otherwise only from two collections in the Chiricahua Mountains of southeastern Arizona, has been found on rich, moist soil in Workman Creek.

2. **Californian.**—Species confined primarily to California. The following 8 species or 1.1 percent, fall in this group:

Calyptridium monandrum
Harpagonella palmeri
Lupinus bicolor
Muhlenbergia rigens
Pholistoma auritum
Plectritis ciliosa
Quercus chrysolepis
Thelypodium longifolium

3. **Southwestern.**—Species extending from west Texas to Arizona, and south into northern Mexico, or occasionally slightly beyond into the drier parts of southern Colorado, Utah, Nevada, and southeastern California. These are generally plants

of the arid Southwest. Examples are Bouteloua eriopoda, B. aristoides, and Hilaria belangeri. The largest number of species, 292 or 39.7 percent, falls in this group.

4. **Western United States.**—Species ranging widely throughout the western half of the United States, including the Great Plains, Rocky Mountains, and the Great Basin of Utah and Nevada. Typical examples are snakeweed, Gambel oak, ponderosa pine, and white fir. This second largest group contains 220 species or 29.9 percent.

5. **North American.**—Species widely distributed throughout temperate North America. These plants are usually, but not always, of mesic habitats. Examples are Corydalis aurea, red raspberry, and roadside agrimony (Agrimonia striata). This is the third largest group, with 152 species or 20.7 percent.

6. **Tropical.**—Species that extend from South or Central America and Mexico northward into the warmer parts of Texas, New Mexico, and Arizona. Only 3, or 0.4 percent, fall into this group: Cyperus flavus, Boerhaavia erecta, and tanglehead (Heteropogon contortus).

7. **Introduced.**—Species introduced by man from other regions of the new or old world, that have become successfully established in the area. These are usually plants of disturbed areas, (road shoulders, and so forth) but may include others that have spread far from such areas. Examples include red brome (Bromus rubens), Kentucky bluegrass, and shepherds-purse (Capsella bursa-pastoris). Forty-seven species, or 6.4 percent, are in this group.

The flora of the Sierra Ancha Experimental Forest is distinctly southwestern and western; approximately 70 percent of all known species fall in these two groups. This is perhaps not surprising, as the chaparral, desert grassland, and southern desert shrub formations represent types that extend well into northern Mexico. Few species in these associations are found north of Arizona. In addition, a large number of Rocky Mountain species extend south into Sierra Ancha, especially in the mixed conifer and chaparral types.

Checklist

In the following plant list, the authors attempted to place each species in its appropriate vegetation type, characteristic site where found, and abundance class. Such data were often missing from collection sheets, and the authors were forced to rely on their familiarity with the species concerned. Often a plant was collected in one vegetation type, when it might in fact be more representative of an adjacent type; in such cases, the more representative location was used in the list. While much of this information must of necessity be subjective, it is thought to be sufficiently reliable to be of some assistance to future students of the local flora.

Acknowledgments

The authors gratefully acknowledge the previously mentioned early collectors, without whom this flora would not be possible. Drs. Charles T. Mason of the University of Arizona, and Frederick J. Hermann of the Forest Service Herbarium assisted in examination of difficult specimens. Mr. Hubert Earle of the Desert Botanical Garden, Phoenix, Arizona, assisted in identification of Cactaceae. Drs. Donald J. Pinkava and Duncan T. Patten of Arizona State University reviewed the manuscript and gave many helpful suggestions.

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| Bignoniaceae | 18 | Orchidaceae | 14 |
| Boraginaceae | 18 | Orobanchaceae | 18 |
| Buxaceae | 16 | Oxalidaceae | 16 |
| | | | |
| Cactaceae | 17 | Papaveraceae | 15 |
| Campanulaceae | 19 | Pinaceae | 13 |
| Capparidaceae | 15 | Plantaginaceae | 19 |
| Caprifoliaceae | 19 | Platanaceae | 15 |
| Caryophyllaceae | 15 | Polemoniaceae | 18 |
| Celastraceae | 17 | Polygalaceae | 16 |
| Chenopodiaceae | 15 | Polygonaceae | 15 |
| Commelinaceae | 14 | Polypodiaceae | 13 |
| Compositae | 19 | Portulacaceae | 15 |
| Convolvulaceae | 18 | Primulaceae | 17 |
| Cornaceae | 17 | | |
| Crassulaceae | 15 | Ranunculaceae | 15 |
| Cruciferae | 15 | Rhamnaceae | 17 |
| Cucurbitaceae | 19 | Rosaceae | 16 |
| Cyperaceae | 14 | Rubiaceae | 19 |
| | | Rutaceae | 16 |
| | | | |
| Equisetaceae | 13 | Salicaceae | 14 |
| Ericaceae | 17 | Santalaceae | 14 |
| Euphorbiaceae | 16 | Sapindaceae | 17 |
| | | Scrophulariaceae | 18 |
| | | Saxifragaceae | 15 |
| Fagaceae | 14 | Selaginellaceae | 13 |
| Fouquieriaceae | 17 | Solanaceae | 18 |
| | | Sterculiaceae | 17 |
| Gentianaceae | 18 | | |
| Geraniaceae | 16 | Tamaricaceae | 17 |
| Gramineae | 13 | Typhaceae | 13 |
| Guttiferae | 17 | | |
| | | | |
| Hydrophyllaceae | 18 | Ulmaceae | 14 |
| | | Umbelliferae | 17 |
| Iridaceae | 14 | Urticaceae | 14 |
| | | | |
| Juglandaceae | 14 | Valerianaceae | 19 |
| Juncaceae | 14 | Verbenaceae | 18 |
| | | Violaceae | 17 |
| Labiatae | 18 | Vitaceae | 17 |
| Leguminosae | 16 | | |
| Liliaceae | 14 | Zygophyllaceae | 16 |

SIERRA ANCHA PLANT CHECKLIST

Types:

- SDS - southern desert shrub
- G - desert grassland
- C - chaparral
- OW - oak woodland
- PP - ponderosa pine
- PF - pine-fir
- MP - mountain parks & meadows

Sites:

- u - dry uplands
- c - cool moist slopes
- s - swales & lower slopes
- f - flood plains
- r - riparian

Abundance:

- r - rare
- o - occasional
- f - frequent
- a - abundant
- va - very abundant

| | Type | Site | Abundance |
|--|------|------|-----------|
| SELAGINELLACEAE | | | |
| <i>Selaginella arizonica</i> Maxon | G | u | f |
| EQUISETACEAE | | | |
| <i>Equisetum arvense</i> L. | PP | r | f |
| <i>Equisetum hyemale</i> L. var. <i>affine</i> (Engelm.) A.A. Eaton | PP | r | f |
| <i>Equisetum laevigatum</i> A. Braun | PP | r | o |
| <i>Equisetum palustre</i> L. | PP | r | r |
| POLYPODIACEAE | | | |
| <i>Adiantum capillus-veneris</i> L. | OW | c | r |
| <i>Asplenium resiliens</i> Kunze | OW | c | o |
| <i>Bormeria hispida</i> (Matt.) Underw. | C | c | f |
| <i>Cheilanthes eatoni</i> Baker | - | - | - |
| <i>Cheilanthes feei</i> Moore | C | c | o |
| <i>Cheilanthes fendleri</i> Hook. | OW | c | f |
| <i>Cheilanthes linheimeri</i> Hook. | OW | u | o |
| <i>Cheilanthes parryi</i> (D.C. Eaton) Domin | C | c | o |
| <i>Cheilanthes wootoni</i> Maxon | G | c | o |
| <i>Cheilanthes wrightii</i> Hook. | - | - | - |
| <i>Cyrtomium auriculatum</i> (Underw.) Morton | P | s | o |
| <i>Cystopteris fragilis</i> (L.) Bernh. | PP | s | o |
| <i>Dryopteris arguta</i> (Kaulf.) Nutt. | OW | c | r |
| <i>Notholaena aurea</i> (Poir.) Desv. | G | u | r |
| <i>Notholaena standleyi</i> Maxon | - | - | - |
| <i>Notholaena sinuata</i> (Lag.) Kaulf. var. <i>sinuata</i> | - | - | - |
| <i>Notholaena sinuata</i> (Lag.) Kaulf. var. <i>integerrima</i> Hook. | - | - | - |
| <i>Pellaea atropurpurea</i> (L.) Link | OW | c | r |
| <i>Pellaea intermedia</i> Mett. | C | u | o |
| <i>Pellaea limitanea</i> (Maxon) Morton | G | c | o |
| <i>Pellaea longimucronata</i> Hook. | C | u | f |
| <i>Pellaea ternifolia</i> (Cav.) Link var. <i>wrightiana</i> (Hook.) A. F. Tryon | C | u | o |
| <i>Pityrogramma triangularis</i> (Kaulf.) Maxon | G | u | r |
| <i>Polystichum scopulinum</i> (D.C. Eaton) Maxon | C | c | r |
| <i>Pteridium aquilinum</i> var. <i>pubescens</i> Underw. | PP | c | f |
| <i>Woodwardia mexicana</i> Fée | PP | u | o |
| <i>Woodwardia fimbriata</i> J. E. Smith | OW | c | r |
| PINACEAE | | | |
| <i>Abies concolor</i> (Gord. & Glend.) Lindl. | PP | c | va |
| <i>Cupressus glabra</i> Sudw. | OW | c | r |
| <i>Juniperus monosperma</i> (Engelm.) Sarg. | C | u | o |
| <i>Juniperus deppeana</i> Steud. | OW | u | f |
| <i>Pinus edulis</i> Engelm. | C | u | o |
| <i>Pinus ponderosa</i> Laws. | PP | u | va |
| <i>Pseudotsuga menziesii</i> (Mirb.) Franco var. <i>glauca</i> (Beissn.) Franco | PP | u | va |
| TYPHACEAE | | | |
| <i>Typha domingensis</i> Pers. | C | r | o |

GRAMINEAE

| | Type | Site | Abundance |
|--|------|------|-----------|
| <i>Agropyron desertorum</i> (Fisch.) Schult. | PP | u | f |
| <i>Agropyron intermedium</i> (Host) Beauv. | PP | u | f |
| <i>Agropyron smithii</i> Rydb. | MP | s | o |
| <i>Agropyron trachycaulum</i> (Link) Malte | PP | c | o |
| <i>Agrostis exarata</i> Trin. | OW | r | o |
| <i>Agrostis palustris</i> Huds. | MP | s | f |
| <i>Agrostis semiverticillata</i> (Forsk.) C. Christ. | OW | r | o |
| <i>Andropogon barbinodis</i> Lag. | C | u | f |
| <i>Andropogon cirratus</i> Hack. | C | u | f |
| <i>Aristida adscensionis</i> L. | C | u | o |
| <i>Aristida arizonica</i> Vasey | C | u | f |
| <i>Aristida fendleriana</i> Steud. | C | u | f |
| <i>Aristida glabrata</i> (Vasey) Hitchc. | G | u | o |
| <i>Aristida glauca</i> (Nees) Walp. | G | u | o |
| <i>Aristida hamulosa</i> Henr. | G | u | o |
| <i>Aristida oligantha</i> Michx. | - | - | - |
| <i>Aristida orcuttiana</i> Vasey | C | u | o |
| <i>Aristida pansa</i> Woot. & Standl. | C | u | o |
| <i>Aristida parishii</i> Hitchc. | G | u | o |
| <i>Aristida purpurea</i> Nutt. | G | u | f |
| <i>Avena fatua</i> L. | G | u | o |
| <i>Bouteloua aristidoidea</i> (H.B.K.) Griseb. | C | u | f |
| <i>Bouteloua barbata</i> Lag. | G | u | f |
| <i>Bouteloua curtipendula</i> (Michx.) Torr. | C | u | va |
| <i>Bouteloua eriopoda</i> Torr. | G | u | o |
| <i>Bouteloua gracilis</i> (H.B.K.) Lag. | C | u | f |
| <i>Bouteloua hirsuta</i> Lag. | G | u | a |
| <i>Bouteloua rothrockii</i> Vasey | G | u | f |
| <i>Blepharoneuron tricholepis</i> (Torr.) Nash | PP | u | o |
| <i>Bromus anomalus</i> Rupr. | PP | s | o |
| <i>Bromus brevibracteatus</i> Buckl. | OW | s | o |
| <i>Bromus caryinatus</i> Hook. & Arn. | OW | c | r |
| <i>Bromus ciliatus</i> L. | OW | c | o |
| <i>Bromus frondosus</i> (Shear) Woot. & Standl. | OW | c | o |
| <i>Bromus japonicus</i> Thunb. | MP | u | o |
| <i>Bromus marginatus</i> Nees | PP | u | o |
| <i>Bromus rubens</i> L. | G | u | va |
| <i>Bromus tectorum</i> L. | MP | u | o |
| <i>Chloris verticillata</i> Nutt. | OW | s | o |
| <i>Chloris virgata</i> Swartz | OW | u | r |
| <i>Dactylis glomerata</i> L. | MP | s | f |
| <i>Digitaria sanguinalis</i> (L.) Scop. | OW | s | - |
| <i>Elymus canadensis</i> L. | PP | s | o |
| <i>Elymus glaucus</i> Buckl. | OW | c | o |
| <i>Erneapogon desvauxii</i> Beauv. | G | u | o |
| <i>Eragrostis cilianensis</i> (All.) Lutati | C | u | o |
| <i>Eragrostis diffusa</i> Buckl. | SDS | u | o |
| <i>Eragrostis intermedia</i> Hitchc. | C | u | f |
| <i>Eragrostis lutescens</i> Scribn. | PP | s | o |
| <i>Eragrostis mexicana</i> (Hornem.) Link | C | c | f |
| <i>Eriochloa gracilis</i> (Pourn.) Hitchc. | SDS | u | o |
| <i>Festuca octoflora</i> Walt. | G | u | f |
| <i>Festuca pacifica</i> Piper | C | u | f |
| <i>Glyceria grandis</i> Wats. | PP | r | o |
| <i>Glyceria striata</i> (Lam.) Hitchc. | PP | r | o |
| <i>Heteropogon contortus</i> (L.) Beauv. | G | u | f |
| <i>Hilaria belangeri</i> (Steud.) Nash | G | u | a |
| <i>Hordeum stebbinsii</i> Covas | G | u | o |
| <i>Koeleria cristata</i> (L.) Pers. | PP | u | f |
| <i>Leptoloma cognatum</i> (Schult.) Chase | C | u | o |
| <i>Leptochloa dubia</i> (H.B.K.) Nees | C | u | o |

| Type | Site | Abundance | Type | Site | Abundance |
|---|------|-----------|------|------|-----------|
| <i>Leptochloa filiformis</i> (Lam.) Beauv. | G | u | f | | |
| <i>Lycurus phleoides</i> H.B.K. | C | u | o | | |
| <i>Melica porteri</i> Scribn. | PF | s | o | | |
| <i>Muhlenbergia emersleyi</i> Vasey | C | c | f | | |
| <i>Muhlenbergia fragilis</i> Swallen | G | u | f | | |
| <i>Muhlenbergia longiligula</i> Hitchc. | C | u | f | | |
| <i>Muhlenbergia montana</i> (Nutt.) Hitchc. | PP | u | o | | |
| <i>Muhlenbergia monticola</i> Buckl. | C | u | r | | |
| <i>Muhlenbergia pauciflora</i> Buckl. | C | c | o | | |
| <i>Muhlenbergia porteri</i> Scribn. | G | u | o | | |
| <i>Muhlenbergia rigens</i> (Benth.) Hitchc. | OW | s | f | | |
| <i>Muhlenbergia simosa</i> Swallen | G | c | o | | |
| <i>Panicum arizonicum</i> Scribn. & Merr. | G | u | o | | |
| <i>Panicum bulbosum</i> H.B.K. var. minus | | | | | |
| Vasey | PP | s | o | | |
| <i>Panicum capillare</i> L. var. <i>occidentale</i> | | | | | |
| Rydb. | PP | s | o | | |
| <i>Panicum hirticaule</i> Presl | G | s | o | | |
| <i>Panicum huachucae</i> Ashe | OW | s | o | | |
| <i>Panicum obtusum</i> H.B.K. | G | s | o | | |
| <i>Phleum pratense</i> L. | MP | s | r | | |
| <i>Poa bigelovii</i> Vasey & Scribn. | G | u | f | | |
| <i>Poa bulbosa</i> L. | C | s | r | | |
| <i>Poa compressa</i> L. | PP | s | o | | |
| <i>Poa longiligula</i> Scribn. & Williams | C | c | o | | |
| <i>Poa pratensis</i> L. | MP | s | va | | |
| <i>Polygomon monspeliensis</i> (L.) Desf. | C | s | o | | |
| <i>Setaria macrostachya</i> H.B.K. | G | s | o | | |
| <i>Sitanion hystrix</i> (Nutt.) J. G. Smith | PP | u | a | | |
| <i>Sporobolus contractus</i> Hitchc. | C | u | o | | |
| <i>Sporobolus cryptandrus</i> (Torr.) Gray | C | u | f | | |
| <i>Sporobolus interruptus</i> Vasey | PP | u | r | | |
| <i>Stipa neomexicana</i> (Thurb.) Scribn. | C | u | o | | |
| <i>Stipa pringlei</i> Scribn. | PP | u | f | | |
| <i>Stipa spectiosa</i> Trin. & Rupr. | G | u | o | | |
| <i>Trichachne californica</i> (Benth.) Chase | C | u | f | | |
| <i>Tridens muticus</i> (Torr.) Nash | G | u | f | | |
| <i>Tridens pilosus</i> (Buckl.) Hitchc. | C | u | o | | |
| <i>Tridens pulchellus</i> (H.B.K.) Hitchc. | C | u | o | | |
| CYPERACEAE | | | | | |
| <i>Bulbostylis capillaris</i> (L.) | | | | | |
| C. B. Clarke | OW | s | - | | |
| <i>Bulbostylis funkii</i> (Steud.) | | | | | |
| C. B. Clarke | G | s | - | | |
| <i>Carex chihuahuensis</i> Mackenz. | PP | s | f | | |
| <i>Carex geophila</i> Mackenz. | C | u | f | | |
| <i>Carex occidentalis</i> Bailey | PF | u | f | | |
| <i>Carex prae-gracilis</i> W. Boott | OW | c | o | | |
| <i>Carex rossii</i> W. Boott | PF | u | f | | |
| <i>Carex subfusca</i> W. Boott | - | - | - | | |
| <i>Carex thurberi</i> Dewey | OW | s | o | | |
| <i>Cyperus aristatus</i> Rottb. | G | s | o | | |
| <i>Cyperus esculentus</i> L. | G | s | o | | |
| <i>Cyperus fendlerianus</i> Boeckl. | PF | s | f | | |
| <i>Cyperus flavus</i> (Vahl) Nees | G | s | - | | |
| <i>Cyperus parishii</i> Britt. | OW | s | - | | |
| <i>Cyperus pringlei</i> Britt. | OW | s | - | | |
| <i>Cyperus spectabilis</i> Link | - | - | - | | |
| <i>Cyperus uniflorus</i> Torr. & Hook. | - | - | - | | |
| <i>Scirpus microcarpus</i> Presl. | PF | r | o | | |
| COMMELINACEAE | | | | | |
| <i>Commelina dianthifolia</i> Delile | PF | s | o | | |
| <i>Tradescantia occidentalis</i> (Britt.) | | | | | |
| Smyth var. <i>scopolorum</i> (Rose) | | | | | |
| Anderson & Woodson | OW | c | f | | |
| <i>Tradescantia pinetorum</i> Greene | PF | c | f | | |
| JUNCACEAE | | | | | |
| <i>Juncus balticus</i> Willd. var. <i>montanus</i> | | | | | |
| Engelm. | PP | c | u | | |
| <i>Juncus interior</i> Wieg. var. | | | | | |
| <i>neomexicanus</i> (Wieg.) Hermann | OW | s | o | | |
| <i>Juncus saximontanus</i> A. Nels. var. | | | | | |
| <i>saximontanus</i> | PP | s | f | | |
| <i>Juncus saximontanus</i> A. Nels. forma | | | | | |
| <i>brunnescens</i> (Rydb.) Hermann | PP | c | f | | |
| <i>Juncus tenuis</i> Willd. var. <i>dudleyi</i> | | | | | |
| (Wieg.) Hermann | OW | r | o | | |
| LILIACEAE | | | | | |
| <i>Allium palmeri</i> Wats. | OW | c | o | | |
| <i>Anthericum torreyi</i> Baker | PP | u | o | | |
| <i>Calochortus amiguus</i> (Jones) Owenby | G | u | o | | |
| <i>Calochortus flexuosus</i> Wats. | G | u | f | | |
| <i>Calochortus gunnisoni</i> Wats. | C | u | o | | |
| <i>Dasyliodon wheeleri</i> Wats. | C | u | f | | |
| <i>Nolina microcarpa</i> Wats. | G | u | f | | |
| <i>Smilacina racemosa</i> (L.) Desf. | PF | c | o | | |
| <i>Yuca baccata</i> Torr. | C | u | a | | |
| <i>Yuca elata</i> Engelm. | G | u | f | | |
| AMARYLLIDACEAE | | | | | |
| <i>Agave chrysantha</i> Peebles | G | u | o | | |
| <i>Agave toumeyana</i> Trel. (A. <i>toumeyana</i> | | | | | |
| var. <i>bella</i> Breitung) | G | u | f | | |
| <i>Agave palmeri</i> Engelm. | G | u | o | | |
| <i>Agave parryi</i> Engelm. | C | u | o | | |
| IRIDACEAE | | | | | |
| <i>Iris missouriensis</i> Nutt. | MP | s | o | | |
| ORCHIDACEAE | | | | | |
| <i>Corallorhiza maculata</i> Raf. | PF | c | r | | |
| <i>Corallorhiza striata</i> Lindl. | PP | c | r | | |
| <i>Corallorhiza wisteriana</i> Conrad | PP | c | r | | |
| <i>Goodyera oblongifolia</i> Raf. | PF | c | r | | |
| <i>Habenaria sparsiflora</i> Wats. | PF | r | r | | |
| SALICACEAE | | | | | |
| <i>Populus angustifolia</i> James | OW | r | f | | |
| <i>Populus fremontii</i> Wats. | G | r | - | | |
| <i>Populus tremuloides</i> Michx. | PF | c | o | | |
| <i>Salix gooddingii</i> Ball | C | r | o | | |
| <i>Salix laevigata</i> Bebb | PVC | r | o | | |
| <i>Salix lasiolepis</i> Benth. | OW | r | o | | |
| <i>Salix scouleriana</i> Barratt | OW | s | o | | |
| JUGLANDACEAE | | | | | |
| <i>Juglans major</i> (Torr.) Heller | OW | s | f | | |
| BETULACEAE | | | | | |
| <i>Alnus oblongifolia</i> Torr. | OW | r | a | | |
| FAGACEAE | | | | | |
| <i>Quercus arizonica</i> Sarg. | OW | u | va | | |
| <i>Quercus chrysolepis</i> Liebm. | OW | u | o | | |
| <i>Quercus emoryi</i> Torr. | OW | u | va | | |
| <i>Quercus dumii</i> Kellogg | C | u | o | | |
| <i>Quercus gambelii</i> Nutt. | PP | u | va | | |
| <i>Quercus turbinella</i> Greene | C | u | va | | |
| ULMACEAE | | | | | |
| <i>Celtis reticulata</i> Torr. | C | s | o | | |
| MORACEAE | | | | | |
| <i>Morus microphylla</i> Buckl. | C | c | r | | |
| URTICACEAE | | | | | |
| <i>Parietaria floridana</i> Nutt. | SDS | c | o | | |
| <i>Urtica gracilenta</i> Greene | PP | c | o | | |
| <i>Urtica gracilis</i> Ait. | PP | u | o | | |
| LORANTHACEAE | | | | | |
| <i>Arceuthobium douglasii</i> Engelm. | PF | c | r | | |
| <i>Arceuthobium vaginatum</i> (H.B.K.) Eichler | PP | u | f | | |
| <i>Phoradendron californicum</i> Nutt. | C | u | f | | |
| <i>Phoradendron corvae</i> Trel. | C | u | - | | |
| <i>Phoradendron juniperinum</i> Engelm. | C | u | o | | |
| SANTALACEAE | | | | | |
| <i>Commandra pallida</i> DC. | C | c | f | | |

| | Type | Site | Abundance | | Type | Site | Abundance |
|--|------|------|-----------|---|------|------|-----------|
| ARISTOLOCHACEAE | | | | RANUNCULACEAE | | | |
| <i>Aristolochia watsoni</i> Woot. & Standl. | G | u | r | <i>Anemone tuberosa</i> Rydb. | C | u | o |
| POLYGONACEAE | | | | <i>Aquilegia caerulea</i> James | PF | r | r |
| <i>Eriogonum abertianum</i> Torr. | G | u | o | <i>Aquilegia chrysantha</i> Gray | PF | c | o |
| <i>Eriogonum alatum</i> Torr. | PF | u | o | <i>Cimicifuga arizonica</i> Wats. | PF | c | o |
| <i>Eriogonum cernuum</i> Nutt. | C | u | o | <i>Clematis ligusticifolia</i> Nutt. | OW | s | f |
| <i>Eriogonum fasciculatum</i> Benth. | SDS | u | f | <i>Delphinium amabile</i> Tidestrom | SDS | u | o |
| <i>Eriogonum jamesii</i> Benth. | OW | c | f | <i>Delphinium scopulorum</i> Greene | OW | u | o |
| <i>Eriogonum pharnaceoides</i> Torr. | PP | u | o | <i>Delphinium scopulorum</i> Gray | MP | u | o |
| <i>Eriogonum thurberi</i> Torr. | C | u | o | <i>Myosurus cupulatus</i> Wats. | C | u | o |
| <i>Eriogonum vimineum</i> Dougl. | C | u | f | <i>Ranunculus hydrocharitoides</i> Gray | PP | r | o |
| <i>Eriogonum wrightii</i> Torr. | C | u | va | <i>Ranunculus inaequalis</i> Greene | - | - | - |
| <i>Polygonum convolvulus</i> L. | PP | c | o | <i>Ranunculus macouarti</i> Britt. | PF | r | o |
| <i>Polygonum sawatchense</i> Small | OW | u | o | <i>Thalictrum fendleri</i> Engelm. | OW | c | f |
| <i>Pterostegia drymaroides</i> Fisch. & Meyer | SDS | c | r | BERBERIDACEAE | | | |
| <i>Rumex acetosella</i> L. | PP | s | o | <i>Berberis haematocarpa</i> Wooton | C | u | f |
| <i>Rumex crispus</i> L. | PP | s | o | <i>Berberis repens</i> Lindl. | PF | r | f |
| <i>Rumex hymenosepalus</i> Torr. | SDS | s | o | PAPAVERACEAE | | | |
| <i>Rumex orthoneurus</i> Rech. f. | PP | s | r | <i>Argemone platyceras</i> Link & Otto | G | u | o |
| CHENOPODIACEAE | | | | <i>Corydalis aurea</i> Willd. | OW | c | f |
| <i>Chenopodium fremontii</i> Wats. | C | u | a | <i>Eschscholzia mexicana</i> Greene | G | u | o |
| <i>Chenopodium graveolens</i> Willd. var. <i>neomezicarianum</i> (Aellen) Aellen | C | u | o | <i>Platystemon californicus</i> Benth. | SDS | s | o |
| <i>Salsola kali</i> L. | PP | u | o | CRUCIFERAE | | | |
| AMARANTHACEAE | | | | <i>Arabis glabra</i> (L.) Bernh. | PP | u | - |
| <i>Amaranthus graecizans</i> L. | C | c | - | <i>Arabis perennis</i> Wats. | C | u | a |
| <i>Amaranthus hybridus</i> L. | PP | u | r | <i>Athysanus pusillus</i> (Hook.) Greene | C | c | o |
| <i>Amaranthus powellii</i> Wats. | PP | u | - | <i>Brassica nigra</i> (L.) Koch | C | u | r |
| <i>Froelichia arizonica</i> Thorneber | G | u | o | <i>Capsella bursa-pastoris</i> (L.) Medic. | C | u | f |
| <i>Froelichia gracilis</i> (Hook.) Moq. | PP | u | - | <i>Descurainia obtusa</i> (Greene) | | | |
| NYCTAGINACEAE | | | | <i>O. E. Schulz</i> | C | u | o |
| <i>Boerhavia erecta</i> L. | G | u | f | <i>Descurainia pinnata</i> (Walt.) Britt. | C | u | o |
| <i>Boerhavia intermedia</i> Jones | G | u | f | <i>Descurainia sophia</i> (L.) Webb. | C | u | o |
| <i>Boerhavia spicata</i> Choisy | C | u | f | <i>Draba cuneifolia</i> Nutt. | C | s | f |
| <i>Boerhavia torreyana</i> (Wats.) Standl. | OW | u | o | <i>Draba reptans</i> (Lam.) Fern. | C | s | o |
| <i>Mirabilis bigelovii</i> Gray | SDS | u | o | <i>Erysimum capitatum</i> (Dougl.) Greene | PP | u | f |
| <i>Mirabilis longiflora</i> L. | PP | u | o | <i>Lepidium medium</i> Greene var. <i>pubescens</i> (Greene) Robinson | PP | u | o |
| <i>Mirabilis multiflora</i> (Torr.) Gray | C | u | f | <i>Lepidium lasiocarpum</i> Nutt. | SDS | u | f |
| <i>Mirabilis oxybaphoides</i> Gray | PF | u | o | <i>Lesquerella gordonii</i> (Gray) Wats. | SDS | u | f |
| <i>Oxybaphus oocineus</i> Torr. | C | u | o | <i>Rorippa nasturtium-aquaticum</i> (L.) Schinz & Thell. (<i>Nasturtium officinale</i> R. Br.) | PF | r | f |
| <i>Oxybaphus ocnatus</i> (Small) Weatherby | PP | c | o | <i>Sisymbrium linearifolium</i> (Gray) | | | |
| <i>Oxybaphus linearis</i> (Pursh) Robins | C | u | o | <i>Payson</i> | PP | u | o |
| <i>Oxybaphus pumilus</i> (Standl.) Standl. | C | u | o | <i>Sisymbrium irio</i> L. | C | u | r |
| AIZOACEAE | | | | <i>Thelypodium longifolium</i> (Benth.) Wats. | PP | c | r |
| <i>Mollugo cervina</i> (L.) Seringe | C | u | f | <i>Thelypodium wrightii</i> Gray | C | u | r |
| <i>Mollugo verticillata</i> L. | C | u | o | <i>Thlaspi fendleri</i> Gray | PP | c | o |
| PORTULACACEAE | | | | <i>Thysanocarpus amplexans</i> Greene | C | u | f |
| <i>Calandrinia ciliata</i> (Ruiz & Pavon) DC. | G | u | f | CAPPARIDACEAE | | | |
| <i>Calyptridium monandrum</i> Nutt. | G | u | r | <i>Cleome lutea</i> Hook. | C | s | r |
| <i>Claytonia rosea</i> Rydb. | OW | c | o | <i>Cleome serrulata</i> Pursh | C | u | o |
| <i>Lewisia brachyochlyx</i> Engelm. | PP | u | f | <i>Polanisia trachysperma</i> Torr. & Gray | G | s | o |
| <i>Montia perfoliata</i> (Donn) Howell | OW | s | a | CRASSULACEAE | | | |
| <i>Portulaca oconata</i> Small | G | u | o | <i>Echeveria collomae</i> (Rose) Kearney & Peebles | G | u | o |
| <i>Portulaca oleracea</i> L. | C | u | o | <i>Echeveria rusbyi</i> (Greene) Nels. & Macbr. | OW | u | r |
| <i>Portulaca suffrutescens</i> Engelm. | G | u | o | <i>Sedum griffithsii</i> Rose | OW | c | r |
| <i>Talinum parviflorum</i> Nutt. | G | c | o | SAXIFRAGACEAE | | | |
| CARYOPHYLLACEAE | | | | <i>Fendlera rupicola</i> Gray var. <i>wrightii</i> Gray | C | c | o |
| <i>Arenaria confusa</i> Rydb. | PP | u | o | <i>Heuchera rubescens</i> Torr. | PF | c | r |
| <i>Arenaria saxosa</i> Gray var. <i>cinerascens</i> Robins. | PF | s | o | <i>Heuchera versicolor</i> Greene | PF | c | f |
| <i>Cerastium texanum</i> Britt. | OW | s | o | <i>Phyladelphus microphyllus</i> Gray | C | c | r |
| <i>Silene laciniata</i> Cav. | PE | c | o | PLATANACEAE | | | |
| <i>Stellaria longifolia</i> Muhl. | - | - | - | <i>Platanus wrightii</i> Wats. | OW | r | a |
| <i>Stellaria media</i> (L.) Cyrillo | C | c | o | | | | |

| ROSACEAE | | | Type | Site | Abundance | Type | Site | Abundance | |
|--|-----|---|------|------|-----------|--|------|-----------|----|
| <i>Agrimonia gryposepala</i> Wallr. | MP | u | f | | | <i>Phaseolus angustissimus</i> Gray | PP | u | - |
| <i>Agrimonia striata</i> Michx. | PF | r | o | | | <i>Phaseolus ritensis</i> Jones | OW | c | o |
| <i>Amelanchier utahensis</i> Koehne (<i>A. mormonica</i> C. K. Schneid.) | PP | u | o | | | <i>Prosopis juliflora</i> (Swartz) DC. var. <i>velutina</i> (Woot.) Sarg. | G | u | f |
| <i>Cercocarpus betuloides</i> Nutt. | C | u | r | | | <i>Psoralea tenuiflora</i> Pursh | C | u | f |
| <i>Cercocarpus montanus</i> Raf. | C | u | va | | | <i>Rhynchosia texana</i> Torr. & Gray | C | - | - |
| <i>Cowania mexicana</i> D. Don | C | u | r | | | <i>Robinia neomeicana</i> Gray | PP | u | a |
| <i>Fallugia paradoxa</i> D. Don | C | u | r | | | <i>Thermopsis pinetorum</i> Greene | PP | u | o |
| <i>Fragaria bracteata</i> Heller | PP | c | o | | | <i>Trifolium albopurpureum</i> Torr. & Gray | G | u | f |
| <i>Fragaria ovalis</i> (Lehm.) Rydb. | PF | c | o | | | <i>Trifolium gracilentum</i> Torr. & Gray | G | u | f |
| <i>Holodiscus dimosus</i> (Nutt.) Torr. | PP | u | o | | | <i>Vicia americana</i> Muhl. var. <i>americana</i> (Nutt.) Wats. | PP | u | o |
| <i>Potentilla diversifolia</i> Lehm. | PP | u | f | | | <i>Vicia americana</i> Muhl. var. <i>truncata</i> (Nutt.) Brewer | PP | u | o |
| <i>Potentilla glandulosa</i> Lindl. | PP | u | o | | | <i>Vicia exigua</i> Nutt. | OW | c | f |
| <i>Potentilla subviscosa</i> Greene | PP | u | f | | | GERANIACEAE | | | |
| <i>Potentilla thurberi</i> Gray | PF | u | o | | | <i>Erodium cicutarium</i> (L.) L'Her. | G | u | va |
| <i>Potentilla viscidula</i> Rydb. | PP | u | o | | | <i>Erodium texanum</i> Gray | SDS | u | o |
| <i>Prunus emarginata</i> (Dougl.) D. Dietr. | PP | c | o | | | <i>Geranium carolinianum</i> L. | OW | s | o |
| <i>Prunus serotina</i> Ehrh. var. <i>rufula</i> (Woot. & Standl.) McVaugh | PP | s | o | | | <i>Geranium eremophilum</i> Woot. & Standl. | OW | c | f |
| <i>Prunus virginiana</i> L. | PP | c | o | | | <i>Geranium richardsonii</i> Fisch. & Trautv. | PP | c | o |
| <i>Rosa arizonica</i> Rydb. | PP | s | o | | | OXALIDACEAE | | | |
| <i>Rosa fendleri</i> Crépin | OW | s | o | | | <i>Oxalis albicans</i> H.B.K. | OW | c | o |
| <i>Rubus leucodermis</i> Dougl. | PF | c | o | | | <i>Oxalis grayi</i> (Rose) Knuth | - | - | - |
| <i>Rubus neomeicanus</i> Gray | PF | c | o | | | <i>Oxalis metcalfei</i> (Small) Knuth | PP | c | o |
| <i>Rubus procerus</i> P. J. Muell. | PP | s | o | | | <i>Oxalis pilosa</i> Nutt. | PP | s | o |
| <i>Rubus strigosus</i> Michx. | PP | s | o | | | <i>Oxalis stricta</i> L. | PP | - | - |
| <i>Sanguisorba annua</i> Nutt. | C | s | o | | | LINACEAE | | | |
| LEGUMINOSAE | | | | | | <i>Linum lewisii</i> Pursh | C | u | o |
| <i>Acacia angustissima</i> (Mill.) Kuntze var. <i>hirta</i> (Nutt.) Robins. | C | u | o | | | <i>Linum neomeicanum</i> Greene | PP | c | o |
| <i>Acacia constricta</i> Benth. | SDS | u | r | | | ZYGOHYLLACEAE | | | |
| <i>Acacia greggii</i> Gray | SDS | u | f | | | <i>Kallstroemia grandiflora</i> Torr. | C | u | o |
| <i>Amorpha fruticosa</i> L. var. <i>occidentalis</i> (Abrams) Kearney & Peebles | OW | s | o | | | <i>Kallstroemia parviflora</i> Norton | C | u | - |
| <i>Astragalus allochrous</i> Gray | - | - | - | | | <i>Tribulus terrestris</i> L. | C | u | r |
| <i>Astragalus farnesius</i> Sheldon | - | - | - | | | RUTACEAE | | | |
| <i>Astragalus nothoxyis</i> Gray | C | u | f | | | <i>Ptelea angustifolia</i> Benth. | PP | u | r |
| <i>Astragalus nuttallianus</i> DC. | C | u | o | | | POLYGALACEAE | | | |
| <i>Astragalus tephrodes</i> Gray | C | u | o | | | <i>Polygala obscura</i> Benth. | G | s | o |
| <i>Astragalus wootoni</i> Sheldon | C | u | o | | | EUPHORBIACEAE | | | |
| <i>Calliandra reticulata</i> Gray | PP | u | o | | | <i>Acalypha neomeicana</i> Muell.-Arg. | C | s | o |
| <i>Calliandra eriophylla</i> Benth. | C | u | o | | | <i>Croton lindheimerianus</i> Scheele | G | u | f |
| <i>Cassia bahinioides</i> Gray | G | u | - | | | <i>Euphorbia dentata</i> Michx. | C | - | - |
| <i>Cassia leptadenia</i> Greenm. | C | u | f | | | <i>Euphorbia hyssopifolia</i> L. | G | u | f |
| <i>Cercidium microphyllum</i> (Torr.) Rose & Johnston. | SDS | u | va | | | <i>Euphorbia inaevis</i> Engelm. var. <i>mollis</i> (Norton) L. C. Wheeler | C | u | f |
| <i>Cercis occidentalis</i> Torr. | OW | d | r | | | <i>Euphorbia lurida</i> Engelm. | PP | - | - |
| <i>Clitoria mariana</i> L. | - | - | - | | | <i>Euphorbia melanadenia</i> Torr. | C | u | f |
| <i>Cologania longifolia</i> Gray | G | u | - | | | <i>Euphorbia palmeri</i> Engelm. var. <i>palmeri</i> (Engelm.) L. C. Wheeler | PP | - | - |
| <i>Dalea albiflora</i> Gray | C | c | f | | | <i>Euphorbia palmeri</i> Engelm. var. <i>subpubens</i> (Engelm.) L. C. Wheeler | - | - | - |
| <i>Dalea filiformis</i> Gray | PP | u | o | | | <i>Euphorbia revoluta</i> Engelm. | C | u | o |
| <i>Dalea ordiae</i> Gray | PP | u | - | | | <i>Euphorbia serpyllifolia</i> Pers. | - | - | - |
| <i>Deemanthus coolleyi</i> (Eaton) Trel. | C | u | - | | | <i>Tragia nepetaefolia</i> Cav. | OW | u | o |
| <i>Desmodium arizonicum</i> Wats. | PP | u | - | | | <i>Tragia stylaris</i> Muell. Arg. | - | - | - |
| <i>Desmodium grahamsii</i> Gray | OW | u | o | | | BUXACEAE | | | |
| <i>Desmodium procumbens</i> (Mill.) A. S. Hitchc. | C | u | f | | | <i>Simmondsia chinensis</i> (Link) Schneid. | SDS | u | f |
| <i>Galactia wrightii</i> Gray | C | s | o | | | ANACARDIACEAE | | | |
| <i>Krameria parvifolia</i> Benth. var. <i>glandulosa</i> (Rose & Painter) Macbr. | C | u | o | | | <i>Rhus glabra</i> L. | OW | c | o |
| <i>Lathyrus arizonicus</i> Britt. | PP | u | o | | | <i>Rhus ovata</i> Wats. | C | u | o |
| <i>Lathyrus graminifolius</i> (Wats.) White | PP | u | o | | | <i>Rhus radicans</i> L. | OW | u | a |
| <i>Lathyrus laetivirens</i> Greene | MP | s | f | | | <i>Rhus trilobata</i> Nutt. var. <i>anisophylla</i> (Greene) Jepson | C | u | a |
| <i>Lathyrus pauciflorus</i> Fern. | OW | u | o | | | <i>Rhus trilobata</i> Nutt. var. <i>pilosissima</i> Engler | C | u | f |
| <i>Lotus humistratus</i> Greene | G | u | a | | | | | | |
| <i>Lotus saluuginosus</i> Greene | SDS | u | r | | | | | | |
| <i>Lotus rigidus</i> (Benth.) Greene | G | u | a | | | | | | |
| <i>Lotus wrightii</i> (Gray) Greene | C | u | f | | | | | | |
| <i>Lupinus argenteus</i> Pursh | - | - | - | | | | | | |
| <i>Lupinus arizonicus</i> Wats. | SDS | u | a | | | | | | |
| <i>Lupinus bicolor</i> Lindl. | G | u | a | | | | | | |
| <i>Lupinus concinnus</i> Agardh | C | u | f | | | | | | |
| <i>Lupinus palmeri</i> Wats. | C | u | f | | | | | | |
| <i>Medicago hispida</i> Gaertn. | SDS | u | f | | | | | | |
| <i>Medicago lupulina</i> L. | PP | u | o | | | | | | |
| <i>Melilotus albus</i> Desr. | MP | u | o | | | | | | |
| <i>Melilotus officinalis</i> (L.) Lam. | MP | u | o | | | | | | |
| <i>Mimosa biuncifera</i> Benth. | C | u | f | | | | | | |

| | Type | Site | Abundance | | Type | Site | Abundance |
|--|------|------|-----------|---|------|------|-----------|
| CELASTRACEAE | | | | <i>Echinocereus triglochidiatus</i> Engelm. var. <i>melanacanthus</i> (Engelm.) L. Benson | G | u | o |
| <i>Ceanothus holacantha</i> Torr. | SDS | u | f | <i>Echinocereus triglochidiatus</i> Engelm. var. <i>polyacanthus</i> (Engelm.) L. Benson | G | u | f |
| <i>Pachystima myrsinites</i> (Pursh) Raf. | PF | c | f | <i>Mammillaria arizonica</i> Engelm. | G | u | o |
| ACERACEAE | | | | <i>Mammillaria microcarpa</i> Engelm. | G | u | o |
| <i>Acer grandidentatum</i> Nutt. | PF | s | f | <i>Opuntia acanthoarpa</i> Engelm. & Bigel. | SDS | u | o |
| <i>Acer negundo</i> L. | OW | r | f | <i>Opuntia chlorotica</i> Engelm. & Bigel. | C | s | r |
| SAPINDACEAE | | | | <i>Opuntia engelmannii</i> Salm-Dyck | SDS | u | f |
| <i>Dodonaea viscosa</i> Jacq. | SDS | c | o | <i>Opuntia macrocentra</i> Engelm. | G | u | o |
| <i>Sapindus drummondii</i> Hook. & Arn. (<i>S.</i> <i>saponaria</i> L. var. <i>drummondii</i> (Hook. & Arn.) L. Benson) | G | u | r | <i>Opuntia phaeoacantha</i> Engelm. | SDS | u | f |
| | | | | <i>Opuntia plumbea</i> Rose | PP | u | o |
| | | | | <i>Opuntia spinosior</i> (Engelm. & Bigel.) Toumey | C | u | o |
| RHAMNACEAE | | | | LYTHRACEAE | | | |
| <i>Ceanothus fendleri</i> Gray | PP | u | f | <i>Lythrum californicum</i> Torr. & Gray | - | - | - |
| <i>Ceanothus greggii</i> Gray | C | u | a | ONAGRACEAE | | | |
| <i>Ceanothus integrissimus</i> Hook. & Arn. | PP | u | o | <i>Epilobium californicum</i> Hausskn. | PF | s | - |
| <i>Rhamnus californica</i> Esch. | OW | c | o | <i>Gaura gracilis</i> Woot. & Standl. | MP | u | o |
| <i>Rhamnus crocea</i> Nutt. | C | u | a | <i>Gaura parviflora</i> Dougl. | C | u | o |
| VITACEAE | | | | <i>Oenothera caespitosa</i> Nutt. | C | s | o |
| <i>Parthenocissus inserta</i> (Kerner) K. Fritsch | PF | s | o | <i>Oenothera clavata</i> Torr. & Frém. | SDS | u | f |
| <i>Vitis arizonica</i> Engelm. | PP | s | f | <i>Oenothera hookeri</i> Torr. & Gray | MP | s | r |
| | | | | <i>Oenothera laciniata</i> Hill | PP | s | - |
| | | | | <i>Zauschneria latifolia</i> (Hook.) Greene | PP | c | r |
| MALVACEAE | | | | ARALIACEAE | | | |
| <i>Abutilon parvulum</i> Gray | C | u | f | <i>Aralia racemosa</i> L. | PF | s | o |
| <i>Anoda cristata</i> (L.) Schlecht. | PP | - | - | UMBELLIFERAE | | | |
| <i>Hibiscus coulteri</i> Harv. | SDS | u | r | <i>Boulesia incana</i> Ruiz & Pavon | SDS | c | o |
| <i>Iliama grandiflora</i> (Rydb.) Wiggins | OW | s | r | <i>Caucalis microcarpa</i> Hook. & Arn. | C | c | f |
| <i>Malva neglecta</i> Wallr. | MP | c | o | <i>Daucus pusillus</i> Michx. | C | u | o |
| <i>Sida procumbens</i> Sw. | G | u | f | <i>Lomatium dissectum</i> (Nutt.) Mathias & Constance | G | c | o |
| <i>Sidaloea neomesiaca</i> Gray | MP | c | r | <i>Lomatium nevadense</i> (Wats.) Coult. & Rose | G | u | o |
| <i>Sphaeralcea ambigua</i> Gray | SDS | u | f | <i>Lomatium nevadense</i> (Wats.) Coult. & Rose var. <i>parishii</i> (Coult. & Rose) Jepson | C | c | f |
| <i>Sphaeralcea rusbyi</i> Gray var. <i>rusbyi</i> | - | - | - | <i>Osmorhiza chilensis</i> Hook. & Arn. | PF | - | - |
| <i>Sphaeralcea rusbyi</i> Gray var. <i>gilensis</i> Kearney | C | u | o | <i>Osmorhiza obtusa</i> (Coult. & Rose) Fern. | PF | - | - |
| STERCULIACEAE | | | | <i>Pteridaria parishii</i> (Coult. & Rose) Nels. & Macbr. | PP | c | o |
| <i>Ayenia pusilla</i> L. | G | u | o | <i>Pseudocymopterus montanus</i> (Gray) Coult. & Rose | PP | u | f |
| GUTTIFERAE | | | | CORNACEAE | | | |
| <i>Hypericum formosum</i> H.B.K. | PP | s | r | <i>Cornus stolonifera</i> Michx. | PF | r | o |
| TAMARICACEAE | | | | <i>Garrya flavescens</i> Wats. | C | u | o |
| <i>Tamarix pentandra</i> Pall. | SDS | r | o | <i>Garrya wrightii</i> Torr. | C | u | va |
| VIOLACEAE | | | | ERICACEAE | | | |
| <i>Hybanthus verticillata</i> (Ortega) Baill. | G | u | r | <i>Arctostaphylos pringlei</i> Parry | C | u | a |
| <i>Viola canadensis</i> L. | PP | s | f | <i>Arctostaphylos pungens</i> H.B.K. | C | u | a |
| <i>Viola nephrophylla</i> Greene | PF | s | o | <i>Chimaphila maculata</i> (L.) Pursh | PF | s | o |
| <i>Viola aurea</i> Kellogg subsp. <i>arizonensis</i> Baker & Clausen | OW | c | r | <i>Monotropa latissuama</i> (Rydb.) Hultén | PP | c | o |
| | | | | <i>Pterospora andromedea</i> Nutt. | PP | u | o |
| LOASACEAE | | | | PRIMULACEAE | | | |
| <i>Mentzelia albicaulis</i> Dougl. | C | u | f | <i>Androsace occidentalis</i> Pursh | PP | u | f |
| <i>Mentzelia pumila</i> (Nutt.) Torr. & Gray | C | u | o | FOUQUIERIACEAE | | | |
| CACTACEAE | | | | <i>Fouquieria splendens</i> Engelm. | SDS | u | a |
| <i>Cereus giganteus</i> Engelm. (<i>Carnegiea</i> <i>gigantea</i> (Engelm.) Britt. & Rose) | SDS | u | o | OLEACEAE | | | |
| <i>Echinocereus boyce-thompsoni</i> Orcutt. var. <i>boyce-thompsoni</i> | G | u | f | <i>Fraxinus velutina</i> Torr. var. <i>coriacea</i> (Wats.) Rehder | PP | s | o |
| <i>Echinocereus boyce-thompsoni</i> Orcutt. var. <i>bonkeriae</i> (Thorner & Bonker) Peebles | G | u | o | <i>Menodora scabra</i> Gray | G | u | a |
| <i>Echinocereus fendleri</i> (Engelm.) Rumpler | G | u | f | <i>Menodora scoparia</i> Engelm. | C | u | o |

| | Type | Site | Abundance | | Type | Site | Abundance |
|---|------|------|-----------|--|------|------|-----------|
| GENTIANACEAE | | | | | | | |
| <i>Centaurium calycosum</i> (Buckl.) Fern. | - | - | - | <i>Lamium amplexicaule</i> L. | OW | s | r |
| <i>Gentiana affinis</i> Griseb. | MP | s | r | <i>Marrubium vulgare</i> L. | PP | u | o |
| <i>Svertia radiata</i> (Kellogg) Kuntze | PP | u | f | <i>Moldavica parviflora</i> (Nutt.) Britt. | PP | u | o |
| APOCYNACEAE | | | | | | | |
| <i>Apocynum androsaemifolium</i> L. | OW | s | o | <i>Monarda austromontana</i> Epling | PP | s | o |
| | | | | <i>Monarda menthaefolia</i> Graham | PP | c | o |
| | | | | <i>Salvia columbariae</i> Benth. | SDS | u | f |
| | | | | <i>Scutellaria potosina</i> T.S. Brandeg. | C | u | f |
| | | | | <i>Stachys coccinea</i> Jacq. | OW | c | o |
| ASCLEPIDACEAE | | | | SOLANACEAE | | | |
| <i>Asclepias asperula</i> (Decne.) Woodson | C | u | f | <i>Datura meteloides</i> DC. | OW | u | r |
| <i>Asclepias engelmanniana</i> Woodson | PP | u | o | <i>Lycium fremontii</i> Gray | SDS | u | f |
| <i>Asclepias linaria</i> Cav. | G | u | r | <i>Margaranthus solanaceus</i> Schlecht. | C | u | o |
| <i>Asclepias nyctaginifolia</i> Gray | G | - | - | <i>Nicotiana attenuata</i> Torr. | OW | u | o |
| <i>Asclepias subverticellata</i> (Gray) Vail | C | s | r | <i>Nicotiana glauca</i> Graham | SDS | s | r |
| <i>Asclepias tuberosa</i> L. | PP | u | o | <i>Physalis crassifolia</i> Benth. | C | u | f |
| | | | | <i>Physalis fendleri</i> Gray | PP | u | o |
| | | | | <i>Physalis hederasfolia</i> Gray | PP | u | o |
| | | | | <i>Physalis versicolor</i> Rydb. | C | u | o |
| | | | | <i>Solanum douglasii</i> Dunal | OW | u | o |
| | | | | <i>Solanum fendleri</i> Gray | OW | c | o |
| | | | | <i>Solanum xanti</i> Gray | OW | u | o |
| CONVOLVULACEAE | | | | SCROPHULARIACEAE | | | |
| <i>Convolvulus arvensis</i> L. | MP | u | o | <i>Castilleja austromontana</i> Standl. & Blumer | PP | u | r |
| <i>Convolvulus inaeuus</i> Vahl | OW | s | r | <i>Castilleja confusa</i> Greene | PP | - | - |
| <i>Cuscuta indeoora</i> Choisy | G | u | o | <i>Castilleja integra</i> Gray | C | u | o |
| <i>Cuscuta umbellata</i> H.B.K. | C | u | o | <i>Castilleja linariaefolia</i> Benth. | C | u | o |
| <i>Evolvulus sericeus</i> Swartz | G | u | o | <i>Castilleja minor</i> Gray | C | c | o |
| <i>Ipomoea barbatisepala</i> Gray | C | u | f | <i>Cordylanthus wrightii</i> Gray | PP | u | - |
| <i>Ipomoea coccinea</i> L. | OW | u | f | <i>Linaria texana</i> Scheele | C | u | o |
| <i>Ipomoea costellata</i> Torr. | C | u | f | <i>Mauvandyia antirrhiniflora</i> Humb. & Bonpl. | C | u | f |
| <i>Ipomoea hirsutula</i> Jacq. f. | OW | u | f | <i>Mimulus guttatus</i> DC. | PP | r | o |
| <i>Ipomoea leptoloma</i> Torr. | - | - | - | <i>Mimulus nasutus</i> Greene | C | s | f |
| <i>Ipomoea plummerae</i> Gray | PP | u | o | <i>Mimulus rubellus</i> Gray | C | u | o |
| | | | | <i>Orthocarpus purpurascens</i> Benth. | SDS | u | f |
| | | | | <i>Pedicularis centranthera</i> Gray | PP | f | f |
| | | | | <i>Penstemon ambiguus</i> Torr. | C | u | f |
| | | | | <i>Penstemon barbatus</i> (Cav.) Roth | OW | u | f |
| | | | | <i>Penstemon bridgesii</i> Gray | PP | c | o |
| | | | | <i>Penstemon linarioides</i> Gray subsp. <i>sileri</i> (Gray) Keck | C | u | o |
| | | | | <i>Penstemon linarioides</i> Gray var. <i>viridis</i> Keck | OW | u | f |
| | | | | <i>Penstemon pseudospectabilis</i> Jones subsp. <i>connatifolius</i> (A. Nels.) Keck | C | u | - |
| | | | | <i>Penstemon thurberi</i> Torr. | C | u | f |
| | | | | <i>Schistophragma intermedia</i> (Gray) Pennell | C | u | - |
| | | | | <i>Scrophularia parviflora</i> Woot. & Standl. | PP | s | o |
| | | | | <i>Verbascum thapsus</i> L. | PP | u | o |
| | | | | <i>Veronica americana</i> (Raf.) Schwein. | MP | s | o |
| | | | | <i>Veronica anagallis-aquatica</i> L. | PP | r | o |
| | | | | <i>Veronica peregrina</i> L. | C | r | r |
| POLEMONIACEAE | | | | BIGNONIACEAE | | | |
| <i>Eriastrum diffusum</i> (Gray) Mason | C | u | f | <i>Chilopsis linearis</i> (Cav.) Sweet | SDS | s | o |
| <i>Eriastrum eremicum</i> (Jepson) Mason | G | u | o | | | | |
| <i>Gilia aggregata</i> (Pursh) Spreng. | MP | u | a | MARTYNIACEAE | | | |
| <i>Gilia giliioides</i> (Benth.) Greene | C | s | o | <i>Proboscidea parviflora</i> (Woot.) Woot. & Standl. | C | s | f |
| <i>Gilia multiflora</i> Nutt. | PP | u | o | | | | |
| <i>Gilia sinuata</i> Dougl. | C | u | f | OROBANCHACEAE | | | |
| <i>Gilia tenuiflora</i> Benth. | G | u | f | <i>Conopholis mexicana</i> Gray | OW | u | o |
| <i>Linanthus aureus</i> (Nutt.) Greene | C | u | f | <i>Orobanche fasciculata</i> Nutt. | C | u | o |
| <i>Linanthus bigelovii</i> (Gray) Greene | C | u | o | <i>Orobanche ludoviciana</i> Nutt. var. <i>cooperi</i> (Gray) G. Beck | OW | c | r |
| <i>Microsteris gracilis</i> (Hook.) Greene | G | u | o | | | | |
| <i>Phlox tenuifolia</i> E. Nels. | C | u | o | ACANTHACEAE | | | |
| | | | | <i>Anisacanthus thurberi</i> (Torr.) Gray | G | c | r |
| HYDROPHYLLACEAE | | | | | | | |
| <i>Eriodictyon angustifolium</i> Nutt. | C | u | o | | | | |
| <i>Hydrophyllum occidentale</i> (Wats.) Gray | PP | c | r | | | | |
| <i>Phacelia distans</i> Benth. | SDS | u | f | | | | |
| <i>Phacelia magellanica</i> (Lam.) Cov. | C | c | o | | | | |
| <i>Phacelia ramosissima</i> Dougl. | C | c | r | | | | |
| <i>Pholistoma auritum</i> (Lindl.) Lilja | SDS | s | o | | | | |
| BORAGINACEAE | | | | | | | |
| <i>Amsinckia intermedia</i> Fisch. & Meyer | SDS | u | a | | | | |
| <i>Amsinckia tessellata</i> Gray | SDS | u | a | | | | |
| <i>Cryptantha decipiens</i> (Jones) Heller | SDS | u | f | | | | |
| <i>Cryptantha fendleri</i> (Gray) Greene | C | u | a | | | | |
| <i>Harpagonella palmeri</i> Gray | SDS | u | a | | | | |
| <i>Heliotropium phyllostachyum</i> Torr. | G | s | o | | | | |
| <i>Lithospermum incisum</i> Lehm. | C | u | o | | | | |
| <i>Lithospermum multiflorum</i> Torr. | PP | u | o | | | | |
| <i>Pectocarya linearis</i> (Ruiz. & Pav.) DC. | SDS | u | f | | | | |
| <i>Pectocarya platycarpa</i> Munz & Johnst. | G | u | f | | | | |
| <i>Plagiobothrys arizonicus</i> (Gray) Greene | G | u | a | | | | |
| <i>Plagiobothrys tenellus</i> (Nutt.) Gray | G | u | f | | | | |
| VERBENACEAE | | | | | | | |
| <i>Aloysia wrightii</i> (Gray) Heller | C | c | o | | | | |
| <i>Verbena wrightii</i> Gray | C | u | o | | | | |
| LABIATAE | | | | | | | |
| <i>Agastache wrightii</i> (Greenm.) Woot. & Standl. | PP | u | o | | | | |
| <i>Hedeoma hyssopifolium</i> Gray | PP | u | f | | | | |
| <i>Hedeoma drummondii</i> Benth. | C | u | o | | | | |
| <i>Hedeoma oblongifolium</i> (Gray) Heller | C | u | o | | | | |

| Type | Site | Abundance | Type | Site | Abundance | |
|---|------|-----------|---|------|-----------|----|
| PLANTAGINACEAE | | | | | | |
| | | | <i>Chrysopsis foliosa</i> Nutt. | G | u | o |
| <i>Plantago lanceolata</i> L. | MP | u | <i>Cirsium arizonicum</i> (Gray) Petrak | PP | u | f |
| <i>Plantago purshii</i> Roem. & Schult. | SDS | u | <i>Cirsium neomexicanum</i> Gray | PP | u | o |
| <i>Plantago rhodosperma</i> Decne. | C | s | <i>Cirsium pulchellum</i> (Greene) Woot. & Standl. | MP | c | f |
| RUBIACEAE | | | | | | |
| <i>Galium aparine</i> L. | OW | c | <i>Cirsium wheeleri</i> (Gray) Petrak | MP | u | o |
| <i>Galium fendleri</i> Gray | C | c | <i>Conyza sophiaefolia</i> H.B.K. | PP | u | o |
| <i>Galium microphyllum</i> Gray | C | u | <i>Encelia frutescens</i> Gray var. <i>virginensis</i> (A. Nels.) Blake | SDS | u | o |
| <i>Galium rothrockii</i> Gray | C | - | <i>Erigeron canadensis</i> L. | PP | u | o |
| <i>Galium stellatum</i> Kellogg | SDS | u | <i>Erigeron concinmus</i> (Hook. & Arn.) Torr. & Gray | PP | u | f |
| <i>Galium wrightii</i> Gray | C | - | <i>Erigeron divergens</i> Torr. & Gray | C | u | f |
| <i>Houstonia wrightii</i> Gray | PP | u | <i>Erigeron flagellaris</i> Gray | PP | c | o |
| CAPRIFOLIACEAE | | | | | | |
| <i>Lonicera arizonica</i> Rehder | PF | u | <i>Erigeron macranthus</i> Nutt. | PP | c | o |
| <i>Lonicera interrupta</i> Benth. | OW | u | <i>Erigeron neomexicanus</i> Gray | PP | u | f |
| <i>Sambucus neomexicana</i> Wooton | PP | u | <i>Erigeron oreophilus</i> Greenm. | - | - | - |
| <i>Symphoricarpos oreophilus</i> Gray | PF | c | <i>Erigeron pringlei</i> Gray | G | c | o |
| <i>Symphoricarpos rotundifolius</i> Gray | PF | c | <i>Eupatorium herbaceum</i> (Gray) Greene | OW | c | o |
| <i>Symphoricarpos utahensis</i> Rydb. | PP | c | <i>Franseria confertiflora</i> (DC.) Rydb. | G | u | f |
| VALERIANACEAE | | | | | | |
| <i>Plectritis ciliosa</i> (Greene) Jeps. | G | s | <i>Gaillardia pinnatifida</i> Torr. | G | u | o |
| <i>Valeriana arizonica</i> Gray | PF | c | <i>Gnaphalium macounii</i> Greene | PP | u | o |
| <i>Valeriana edulis</i> Nutt. | MP | s | <i>Gnaphalium pringlei</i> Gray | PP | u | o |
| CURCUBITACEAE | | | | | | |
| <i>Apodanthera undulata</i> Gray | SDS | s | <i>Gnaphalium wrightii</i> Gray | C | u | o |
| <i>Cucurbita digitata</i> Gray | SDS | u | <i>Grindelia squarrosa</i> (Pursh) Dunal | MP | u | o |
| <i>Cucurbita foetidissima</i> H.B.K. | PP | u | <i>Gutierrezia sarothrae</i> (Pursh) Britt. & Rusby | G | u | va |
| <i>Marah gilensis</i> Greene | SDS | c | <i>Haplopappus acradentus</i> (Greene) Blake | G | u | o |
| CAMPANULACEAE | | | | | | |
| <i>Lobelia cardinalis</i> L. | OW | s | <i>Haplopappus cuscutus</i> Gray | C | u | o |
| <i>Triodanis perfoliata</i> (L.) Nieuwl. | OW | s | <i>Haplopappus gracilis</i> (Nutt.) Gray | C | u | o |
| COMPOSITAE | | | | | | |
| <i>Achillea lanulosa</i> Nutt. | MP | u | <i>Haplopappus heterophyllus</i> (Gray) Blake | G | u | o |
| <i>Ambrosia psilostachya</i> DC. | G | s | <i>Haplopappus lariciifolius</i> Gray | G | u | a |
| <i>Antennaria aprica</i> Greene | PP | u | <i>Helianthus amarus</i> L. | MP | u | f |
| <i>Aplopappus</i> see <i>Haplopappus</i> | | | <i>Heterotheca subaxillaris</i> (Lam.) Britt. & Rusby | C | u | r |
| <i>Artemisia dracunculoides</i> Pursh | C | u | <i>Hieracium fendleri</i> Schultz Bip. | PP | u | o |
| <i>Artemisia ludoviciana</i> Nutt. subsp. <i>sulcata</i> (Rydb.) Keck | C | u | <i>Hymenoclea monogyra</i> Torr. & Gray | G | s | o |
| <i>Artemisia pacifica</i> Nutt. | C | u | <i>Hymenothrix wrightii</i> Gray | C | u | f |
| <i>Aster aquifolius</i> (Greene) Blake | OW | u | <i>Hymenoxys bigelovii</i> (Gray) K. F. Parker | PP | u | o |
| <i>Aster bigelovii</i> Gray | C | u | <i>Kuhnia rosmariniifolia</i> Vent. | G | u | o |
| <i>Aster commutatus</i> (Torr. & Gray) Gray | PP | u | <i>Lactuca graminifolia</i> Michx. | OW | u | o |
| <i>Aster erillii</i> Ell. | PP | - | <i>Lactuca ludoviciana</i> (Nutt.) DC. | OW | u | o |
| <i>Baccharis glutinosa</i> Pers. | SDS | r | <i>Lactuca serriola</i> L. var. <i>serriola</i> | OW | u | o |
| <i>Baccharis pteronoides</i> DC. | G | u | <i>Lactuca serriola</i> L. forma <i>integrifolia</i> Bogenhard | OW | u | o |
| <i>Baccharis sarothroides</i> Gray | OW | s | <i>Malacothrix cleavelandi</i> Gray | C | u | f |
| <i>Baeria chrysostrama</i> Fisch. & Mey. | SDS | u | <i>Melampodium leucanthum</i> Torr. & Gray | C | u | f |
| <i>Bahia biternata</i> Gray | C | u | <i>Microseris linearifolia</i> (DC.) Schultz Bip. | C | u | f |
| <i>Bahia dissata</i> (Gray) Britt. | MP | u | <i>Pectis papposa</i> Harv. & Gray | C | u | f |
| <i>Baileya multiradiata</i> Harv. & Gray | G | u | <i>Perezia wrightii</i> Gray | SDS | u | o |
| <i>Bidens bigelovii</i> Gray | OW | u | <i>Perityle ciliata</i> (L.H. Dewey) Rydb. | OW | u | f |
| <i>Bidens leptocephala</i> Sherff | OW | c | <i>Rafinesquia neomexicana</i> Gray | SDS | u | f |
| <i>Brickellia betonicaeifolia</i> Gray | OW | c | <i>Rudbeckia laciniata</i> L. | PP | s | f |
| <i>Brickellia californica</i> (Torr. & Gray) Gray | OW | c | <i>Senecio macdougalii</i> Heller | PP | u | o |
| <i>Brickellia grandiflora</i> (Hook.) Nutt. | PP | u | <i>Senecio monoensis</i> Greene | C | u | f |
| <i>Brickellia rusbii</i> Gray | OW | c | <i>Senecio multicaпитatus</i> Greenm. | OW | u | o |
| <i>Carminata tenuiflora</i> DC. | OW | c | <i>Senecio neomexicanus</i> Gray | C | u | f |
| <i>Carpophoaete bigelovii</i> Gray | C | u | <i>Senecio wootonii</i> Greene | PP | u | o |
| | | | <i>Solidago missouriensis</i> Nutt. | OW | u | o |
| | | | <i>Solidago sparsiflora</i> Gray | OW | u | f |
| | | | <i>Solidago wrightii</i> Gray | OW | u | o |
| | | | <i>Sonchus asper</i> (L.) Hill | PP | u | o |
| | | | <i>Stephanomeria exigua</i> Nutt. | C | u | o |
| | | | <i>Stephanomeria tenuifolia</i> (Torr.) H. M. Hall | C | u | o |
| | | | <i>Tanacetum officinale</i> Weber | MP | s | f |
| | | | <i>Townsendia exscaipa</i> (Richards.) Porter | G | u | f |
| | | | <i>Trixis californica</i> Kellogg | SDS | u | o |
| | | | <i>Tragopogon pratensis</i> L. | PP | u | o |
| | | | <i>Viguiera annua</i> (Jones) Blake | PP | c | f |
| | | | <i>Wyethia arizonica</i> Gray | PP | u | o |

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1968. Flora and vegetation of the Sierra Ancha Experimental Forest, Arizona. U. S. D. A. Forest Service Research Paper RM-41, 20 pp., illus. Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado 80521.

Vegetation types on the 12,820-acre Forest range from desert shrub to mixed conifer. Distinct temperature-precipitation patterns at lower, middle, and high elevations parallel the changes in plant cover.

A checklist of 726 species and 9 varieties of vascular plants collected since 1933 is included. Examination of the ranges of these species indicates that approximately 70 percent are distinctly southwestern or western in origin. Only 13 species, or 1.8 percent, are endemic to Arizona. Two introduced species are new to the Arizona flora.

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