

CHECKLIST OF VASCULAR PLANTS OF ORGAN PIPE CACTUS NATIONAL MONUMENT, CABEZA PRIETA NATIONAL WILDLIFE REFUGE, AND TINAJAS ALTAS, ARIZONA

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ABSTRACT

The contiguous Organ Pipe Cactus National Monument, Cabeza Prieta National Wildlife Refuge, and the Tinajas Altas region within the Sonoran Desert in southwestern Arizona have a vascular plant flora of 736 taxa (species, subspecies, varieties, and hybrids) in 420 genera and 94 families. Elevation and ecological diversity decrease from east (Organ Pipe) to west (Tinajas Altas) while aridity increases from east to west, all correlating with decreasing botanical diversity. Organ Pipe Cactus National Monument, which includes an ecologically isolated Sky Island of dwarfed woodland rising above actual desert, has a flora of 657 taxa in 395 genera and 93 families, of which 11 percent (72 species) are not native. Cabeza Prieta National Wildlife Refuge has a documented flora of 426 taxa in 266 genera and 63 families, of which 8.8 percent (37 species) are not native. The Tinajas Altas region has a flora of 227 taxa in 164 genera and 47 families, of which 5.3 percent (12 species) are not native. Non-native species make up 10.7 percent (78 species) of the total flora of the three areas, but among these only 7 percent (52 species) are established in the flora area as reproducing populations. Six non-natives have become invasive species that pose serious threats to the native ecosystems: Sahara Mustard (*Brassica tournefortii*), Red Brome (*Bromus madritensis* subsp. *rubens*), Buffelgrass (*Cenchrus ciliaris*), Arabian and Mediterranean Grass (*Schismus arabicus* and *S. barbatus*), and Tamarisk (*Tamarix chinensis*).

Key words: Sonoran Desert, flora, Arizona, Organ Pipe Cactus National Monument, Cabeza Prieta National Wildlife Refuge, Tinajas Altas, non-native species, invasive species

INTRODUCTION

In this publication we provide a checklist of the vascular plants for the contiguous protected areas of Organ Pipe Cactus National Monument, Cabeza Prieta National Wildlife Refuge, and the Tinajas Altas region (the flora area) of southwestern Arizona (Fig. 1). Detailed background information on these regions,

including specific geographic information in a regional gazetteer and their biota, can be found in Broyles et al. (2007), Felger and Broyles (1997, 2007), and Felger et al. (2007a).

A specimen-based listing for the flora area and surrounding regions is provided by Felger et al. (1997, 2007b). However, in view of significant new findings, taxonomic revisions, and corrections we offer a current and concise checklist for the flora area—Organ Pipe to the Tinajas Altas region. This checklist is specimen-based with 736 taxa (species, subspecies, varieties, and hybrids) in 420 genera and 94 families (Table 1). Elevation and ecological diversity decreases from east (Organ Pipe) to west (Tinajas Altas) while aridity increases from east to west, all correlating with decreasing botanical diversity. This listing is preliminary to our larger work on the flora and vegetation of the flora area in preparation. Although there has been extensive documentation of plants from this region, diligent botanists should be able to discover some additional species.

The present flora area is part of five major, contiguous protected areas and a sixth de facto area that make up the heart of the Sonoran Desert, here called the “Six Dry Borders Areas”: 1) Organ Pipe Cactus National Monument, 2) Cabeza Prieta National Wildlife Refuge, and 3) Sonoran Desert National Monument in Arizona; 4) Reserva de la Biosfera El Pinacate y Gran Desierto de Altar in Sonora and 5) Reserva de la Biosfera Alto Golfo de California y Delta del Río Colorado in Sonora and Baja California; and the 6) Barry M. Goldwater Range. The Goldwater Range in Arizona is not a protected area per se but generally is managed as one by the U.S. Air Force and U.S. Marine Corps. Spanning 210 miles (338 km) from San Felipe, Baja California, to just southwest of Phoenix, Arizona, these six areas cover 7,515,221 acres (3,041,302 ha), or 11.7 percent of the Sonoran Desert, making them the largest zone of contiguous protected desert anywhere in the Americas. This bio-network supports a flora of at least 865 vascular plant taxa (species, subspecies, and varieties) including 91 non-native species in 448 genera and 107 families (Felger et al. 2007a and b, and new records including *Cuscuta* spp., *Mentzelia longiloba* var. *pinacatensis* J. J. Schenk & L. Hufford, *Psoralea fremontii*, and *Salvinia molesta* D. S. Mitchell in Salviniaceae). This flora includes more than one-third of the total flora of the entire Sonoran Desert, a region covering about 100,000 mi² (310,000 km²) in five states in Mexico and the United States (Shreve and Wiggins 1964).

Table 1 compares the flora of the three protected areas of Arizona, and the combined Six Dry Borders Areas. The three areas of the present floristic listing have a collective size of 1,270,699 acres (514,234 ha). The Six Dry Borders Areas, about six times larger than the included three areas of the present floristic listing, have a total flora of 860 species, an increase of only about 15 percent above that of the present flora listing.

ORGAN PIPE CACTUS NATIONAL MONUMENT

The Monument covers 330,689 acres (133,825 ha) and ranges from 980 to 4808 ft (299 to 1465 m) elevation. The majority of the Monument falls within Shreve’s (1951) Arizona Uplands subdivision of the Sonoran Desert. The higher

elevations of the Ajo Mountains, along the eastern margin of the Monument, support an ecologically isolated Sky Island rising above actual desert vegetation. At these higher elevations one finds a dwarfed woodland that includes Juniper (*Juniperus arizonica*), Scrub Oak (*Quercus turbinella*), and Rosewood (*Vauquelinia californica*). The southwestern corner of the Monument transitions into the Lower Colorado Valley subdivision of the Sonoran Desert (Felger 2000; Felger et al. 1992). Works on the vegetation of the Monument include those by Brown and Warren (1986), Lowe et al. (1992), Mulroy (1971), Steenbergh and Warren 1977, Warren and Anderson (1987), and Warren et al. (1981). The National Park Service is in the process of updating existing maps through its Inventory and Monitoring program.

The first checklist of the Monument plants was completed by McDougall (ca. 1940). That list and one prepared by Phillips (1967) were based on field experience and specimens. Subsequent checklists compiled by Adams (1971) and Jordan (1975) contained undocumented and questionable listings. Janice Bowers' (1980) flora was the first critical, specimen-based flora of the Monument and serves as the basis for all future botanical work in the Monument. The non-native flora was discussed by Felger (1990) and a detailed flora of Quitobaquito with ethnobotanical information was prepared by Felger et al. (1992). Additions to the flora were published by Pinkava et al. (1992) and Felger et al. (1997, 2007b) provided a comprehensive annotated flora.

The total present flora of the Monument includes 657 taxa (species, subspecies, varieties, and hybrids) in 395 genera and 93 families. Non-native species account for 11 percent of the flora (72 species), although many are not established as reproducing populations.

CABEZA PRIETA NATIONAL WILDLIFE REFUGE

The Refuge covers 860,010 acres (348,034 ha) and ranges from 680 to 3293 ft (207 to 1004 m) in elevation. The entire Refuge is within Shreve's (1951) Lower Colorado Valley subdivision of the Sonoran Desert. A preliminary, specimen-based flora of the Refuge by Simmons (1965, 1966) was based on first-hand observations and specimens. Phelps (1981) produced a checklist of the Refuge, Tunnicliff et al. (1986) compiled a list for the Barry M. Goldwater Military Range that included the Refuge, and Felger et al. (1997, 2007b) provided substantial additions for Goldwater Range. While the flora is well documented, many remote areas, especially the rugged mountains are expected to contain unrecorded range extensions, such as the discovery of Scallop-leaf Sage (*Salvia vaseyi*) new for Arizona by Cain et al. (2010).

Detailed vegetation studies were conducted by Malusa (2003). We list a documented flora of 426 taxa in 266 genera and 63 families. Non-native plants (37 species) make up 8.8 percent of the flora, although some are not established as reproducing populations.

TINAJAS ALTAS REGION

This is the most arid portion of the flora area and adjoins the western margin of the Cabeza Prieta National Wildlife Refuge. The core area is the 80,000 acres (32,375 hectares) of the Tinajas Altas region encompassing the Tinajas Altas

Mountains from near the Cipriano Pass to the Mexican border at Frontera Canyon and the south end of the Lechuguilla Valley drained northward by Coyote Wash and southward by La Jolla Wash. Elevation ranges from ca. 950 to 2764 ft (ca. 290 to 842 m). The region is within Shreve's (1951) Lower Colorado Valley subdivision of the Sonoran Desert.

Felger and Van Devender (2012) provided an abridged checklist of the flora in a work on the Tinajas Altas region by Broyles et al. (2012), and that information is included here with some revisions and new discoveries. Felger et al. (forthcoming) provide a comprehensive treatment of the modern and deep history flora of the Tinajas Altas region. Annotated checklists for the Goldwater Range included Tinajas Altas plants (Felger et al. 1997, 2007b). We document a flora of 227 taxa (including 2 hybrids) in 164 genera and 47 families. There are 12 non-native species in the flora, which is only 5.3 percent of the total flora. We include some plants from immediately adjacent localities that are expected to occur in the core area.

The boundaries for this area are those of the Tinajas Altas addition to Cabeza Prieta National Wildlife Refuge as proposed by U.S. Fish and Wildlife Service (1970a & b) and as incorporated within the Cabeza Prieta Refuge for a few months in 1975 by the Department of the Interior (Tunnick et al. 1986: 3.14). Those boundaries would have extended the northern refuge boundary westward to a point about one mile west of Cipriano Pass and then southward to the U.S.–Mexico border. That area encompassed land in townships 12, 13, and 14S in range 17W and townships 12 and 13S in range 18W, totaling approximately 80,000 acres (U.S. Fish & Wildlife Service 1970b) and included Raven Butte, the Tinajas Altas Mountains, and portions of the Lechuguilla Desert and Davis Plain, but the land was not congressionally included within the refuge. In turn, because of its special biological, historical, archaeological, geological, and scenic values, the Bureau of Land Management in coordination with the Department of Defense subsequently designated much of the former addition as an Area of Critical Environmental Concern (ACEC) of irregular configuration comprising about 60,500 acres (U.S. Departments of the Air Force, Navy, and Interior 2006), and later as a Special Natural Interest Area of comparable though not congruent boundaries (Range Management Department 2007).

NON-NATIVE SPECIES

Approximately 10.7 percent of the total flora, or 78 species, are not native to the region (see Felger 1990, 2000; Felger et al. 2007b; Van Devender et al. 2009; Wilson et al. 2002). Among the total non-native flora, only 7 percent (52 species) are established as reproducing populations and a number of these occur only in disturbed habitats. Twenty-seven species do not have reproducing populations in the flora area: these include “strays” such as Shepherd's Purse (*Capsella bursa-pastoris*), Safflower (*Carthamus tinctorius*), and Wheat (*Triticum aestivum*), as well as others that have persisted from cultivation, such as the Figs (*Ficus carica*) and Pomegranates (*Punica granatum*) at Quitobaquito (e.g., Felger et al. 1992), and/or plants extirpated from the flora area such as Watercress (*Nasturtium officinale*). Among the fully established non-natives, a few have become invasive species that

pose serious threats to the native ecosystems, e.g., Sahara mustard (*Brassica tournefortii*), Red Brome (*Bromus madritensis* subsp. *rubens*), Buffelgrass (*Cenchrus ciliaris*), Arabian Grass (*Schismus arabicus*), Mediterranean Grass (*Schismus barbatus*), and Tamarisk (*Tamarix chinensis*) (Felger 1990, 2000; Felger et al. 2007b; Van Devender et al. 2009).

THE CHECKLIST

Plants in this checklist are grouped as Pteridophytes (ferns and lycopods or “ferns and fern relatives”), Gymnosperms (cone-bearing plants), and Angiosperms: Magnoliidae (magnoliids), Eudicotyledoneae (eudicots), and Monocotyledoneae (monocots). Within these categories the plants are listed alphabetically by family, genus, species, infraspecific taxa (subspecies or varieties), and hybrids. The accepted scientific names are in bold.

Nomenclature in the checklist utilizes our best interpretation of current systematic knowledge. We generally follow or interpret the taxonomy of the Flora of North America, Vascular Plants of Arizona (Vascular Plants of Arizona Editorial Committee, 1992+), and the Jepson Flora Project (2012), and utilize Tropicos (2011) as reference for authors of scientific names and indications of “accepted name” when provided (e.g., Poaceae). References supporting taxonomic interpretations generally not included in those more general works or of special interest are cited in the checklist with the particular taxa.

Selected synonyms of scientific names are italicized within brackets [--]. Vernacular, or common, names follow the scientific names or synonyms and when known, or deemed worthwhile, are given in English, Spanish, and the Hia C-ed O’odham dialect, respectively. English language common names largely follow those provided by the Jepson Flora Project and USDA Plants Database (2011). The Spanish-language names are italicized. The O’odham names are from Felger et al. (2007b). These indigenous names are based largely on Gary Nabhan’s work in Felger et al. (1992, 2007b). Plant family designations follow the APG III system (Angiosperm Phylogeny Group; Stevens 2011).

A voucher specimen is cited for each of the three areas in which the taxon is present, with the exception of some reliable sight records or published references when a specimen was not available. Specimens cited are at the University of Arizona Herbarium (ARIZ), unless otherwise indicated by the standardized abbreviations for herbaria (Index Herbariorum 2009), or at the herbaria of Organ Pipe Cactus National Monument (identified as ORPI) or Cabeza Prieta National Wildlife Refuge (identified as CAB). All herbarium specimens cited have been seen by Felger, although some have been seen as images. The name of the collector and collection number is given. In cases where more than one collector is listed on a label, generally only the first collector’s name is given. If no collection number is provided on the herbarium label, then the specimen is identified by the date of collection, for example, *Harbison 6 Mar 1937*. Additional specimens are cited in Felger et al. (2007b) as well as the Southwest Environmental Information Network (SEINet 2011), and are found in the regional herbaria including ARIZ, ASU, DES, SD, and the herbaria at Organ Pipe Cactus National Monument (ORPI) and Cabeza

Prieta National Wildlife Refuge (CAB). Richard Felger's collections are identified as RSF, Susan Rutman's as SR, and Tom Van Devender's as TRV.

Area designations are: CP = Cabeza Prieta National Wildlife Refuge, OP = Organ Pipe Cactus National Wildlife Refuge, TA = Tinajas Altas region. Non-native plants established as reproducing populations in the flora area are indicated with an asterisk (*) and non-native species not established as reproducing populations are marked with two asterisks (**).

PTERIDOPHYTES – FERNS AND LYCOPHYTES

MARSILEACEAE – WATER-CLOVER FAMILY

Marsilea vestita Hooker & Greville subsp. **vestita**. Hairy Water-clover, Hooked Pepperwort

CP: RSF 01-571.

PTERIDACEAE – MAIDENHAIR FERN FAMILY

Argyroschisma limitanea (Maxon) Windham subsp. **limitanea** [*Notholaena limitanea* Maxon var. *limitanea*]. Southwestern False Cloak-fern

OP: Nichol 23 Feb 1939.

Astrolepis cochisensis (Goodding) D. M. Benham & Windham subsp. **cochisensis** [*Notholaena cochisensis* Goodding. *N. sinuata* var. *cochisensis* (Goodding) Weatherby. *Cheilanthes cochisensis* (Goodding) Mickel]. Scaly Cloak-fern, Jimmy-fern

CP: RSF 93-29. OP: Goodding 455-41. TA: TRV 10 Mar 1980.

Astrolepis sinuata (Lagasca ex Swartz) D. M. Benham & Windham subsp. **sinuata** [*Notholaena sinuata* (Lagasca ex Swartz) Kaulfuss. *Cheilanthes sinuata* (Lagasca ex Swartz) Domin.]. Wavy Star-scaled Cloak-fern

OP: RSF 90-568.

Bommeria hispida (Mettenius ex Kuhn) Underwood. Hairy Bommeria

OP: 17 Dec 1939, *Harbison* 26317 (SD).

Cheilanthes lindheimeri Hooker. Fairy Swords

OP: RSF 90-559.

Cheilanthes parryi (D. C. Eaton) Domin [*Notholaena parryi* D. C. Eaton]. Parry's Lip-fern

CP: Simmons 21 Nov 1964. OP: Wirt 5 Dec 1990. TA: Harrison 6575.

Cheilanthes villosa Davenport ex Maxon. Hairy Lip-fern

OP: RSF 05-267.

Cheilanthes wrightii Hooker. Wright's Lip-fern

OP: Bowers 1003.

Cheilanthes yavapensis T. Reeves ex Windham. Yavapai Lip-fern

OP: Darrow 3863.

Notholaena californica D.C. Eaton subsp. **californica** [*Cheilanthes deserti* Mickel]. California Cloak-fern

CP: Wiggins 26 Mar 1932. OP: RSF 88-135 (ORPI). TA: Reeves 5353 (ASU).

Notholaena standleyi Maxon [*Cheilanthes standleyi* (Maxon) Mickel]. Star Cloak-fern

CP: RSF 92-575. OP: Yatskievych 81-92.

Pellaea truncata Goodding. Spiny Cliff-brake

OP: Bowers 1701.

Pentagramma triangularis (Kaulfuss) Yatskievych, Windham & E. Wollenweber subsp. **maxonii** (Weatherby) Yatskievych, Windham & E. Wollenweber [*Pityrogramma triangularis* (Kaulfuss) Maxon var. *maxonii* Weatherby]. Goldback Fern

OP: Bowers 930.

SELAGINELLACEAE – SPIKE-MOSS FAMILY

Selaginella arizonica Maxon. Arizona Spike-moss; *flor de piedra*

CP: RSF 92-578. OP: Bezy 25 Oct 1964.

Selaginella eremophila Maxon. Desert Spike-moss

CP: RSF 92-585. **OP:** RSF 88-113. **TA:** Reichenbacher 28 Mar 1981.

GYMNOSPERMS – CONE-BEARING PLANTS

CUPRESSACEAE – CYPRESS FAMILY

Juniperus arizonica (R. P. Adams) R. P. Adams [*J. coahuilensis* (Martínez) Gaussen ex R. P.

Adams var. *arizonica* R. P. Adams. *J. erythrocarpa* Cory, in part: New Mexico, Arizona]. Arizona

Juniper. See Adams et al. (2006).

OP: RSF 90-508.

EPHEDRACEAE – JOINT-FIR FAMILY

Ephedra aspera Engelman ex S. Watson [*E. nevadensis* S. Watson var. *aspera* (Engelman ex S. Watson) L.D. Benson]. Boundary Ephedra; *canutillo*; *ku'ukpalk*

CP: Yeatts 3653. **OP:** Bowers 1266. **TA:** Hodgson 2100 (DES).

ANGIOSPERMS – FLOWERING PLANTS

MAGNOLIIDS – MAGNOLIIDEA (majority of basal dicots)

ARISTOLOCHIACEAE – BIRTHWORT FAMILY

Aristolochia watsonii Wooton & Standley [*A. brevipes* Benth var. *acuminata* S. Watson, not *A. acuminata* Lamaire, *A. porphyrophylla* H. Pfeifer]. Indian-root; *hierba del indio*, *zapatito*

CP: RSF 92-700. **OP:** RSF 86-275.

SAURURACEAE – LIZARD-TAIL FAMILY

Anemopsis californica (Nuttall) Hooker & Arnott. Yerba mansa; *hierba del manso*; va:vis

OP: Mearns 2786 (US).

EUDICOTS – EUDICOTYLEDONEAE (more advanced dicots)

ACANTHACEAE – ACANTHUS FAMILY

Anisacanthus thurberi (Torrey) A. Gray. Desert Honeysuckle

OP: Bowers 1240.

Carlowrightia arizonica A. Gray. Arizona Wrightwort; *lemilla*

CP: Lehto L23542 (ASU). **OP:** RSF 88-266.

Dicliptera resupinata (Vahl) de Jussieu. Fold-wing; *alfalfilla*

OP: Lockwood 163.

Justicia californica (Benth) D. N. Gibson [*Beloperone californica* Benth]. Desert

Hummingbird-bush; *chuparro*; *wipisimal*

CP: Benson 10787. **OP:** Peebles 10825. **TA:** Shreve 5940.

Justicia candicans (Nees) L. D. Benson [*Jacobinia ovata* A. Gray]. *Chuparro*

OP: Nichol 23 Feb 1939.

Justicia longii Hilsenbeck [*Siphonoglossa longiflora* (Torrey) A. Gray]. Longflower Tube-tongue

OP: Daniel 2590 (ASU).

Ruellia nudiflora (Engelmann & A. Gray) Urban [*R. nudiflora* var. *runyonii* (Tharp & F. A.

Barkley) B. L. Turner]. Violet Ruellia

OP: Lockwood 163.

ADOXACEAE – ADOXA FAMILY

****Sambucus cerulea** Rafinesque [*S. nigra* Linnaeus subsp. *cerulea* (Rafinesque) Bolli. *S. mexicana* C. Presl ex de Candolle. *S. cerulea* var. *mexicana* (C. Presl ex de Candolle) L. D. Benson. *S.*

neomexicana Wooton. *S. cerulea* var. *neomexicana* (Wooton) Rehder]. Blue Elderberry; *tápiro*. See Eriksson and Donoghue (1997).

OP: Tinkham Apr 1942.

AIZOACEAE – AIZOON FAMILY

***Mesembryanthemum crystallinum** Linnaeus. Crystal Iceplant; *hielitos*

OP: SR 11 May 1995.

***Mesembryanthemum nodiflorum** Linnaeus. Slender-leaf Iceplant; *hielitos*

CP: SR 11 May 1995. OP: SR 11 May 1995.

Trianthema portulacastrum Linnaeus. Horse-purslane; *verdolaga de cochi*; *kasvañ*

CP: Adobe Well (Simmons 1966). OP: RSF 88-430.

AMARANTHACEAE – AMARANTH FAMILY (includes Chenopodiaceae)

***Amaranthus albus** Linnaeus [*A. graecizans* of authors, not *A. graecizans* Linnaeus]. Tumbleweed
Amaranth

OP: Harbison 13 Dec 1939 (SD).

Amaranthus crassipes Schlechtendahl var. **crassipes**. Spreading Amaranth

CP: RSF 92-713. OP: Bowers 1531 (ORPI). TA: RSF 04-24.

Amaranthus fimbriatus (Torrey) Benth. Fringed Amaranth; *bledo*, *quelitillo*;
cuhukkia i:vakĩ

CP: RSF 92-663. OP: Bowers 1520. TA: RSF 04-25.

Amaranthus palmeri S. Watson. Careless Weed, Pigweed; *quelite de las aguas*; *cuhugia*

CP: RSF 92-665. OP: Bowers 1521.

Amaranthus ×tucsonensis Henrickson. Tucson Amaranth

OP: Harbison 26249.

Atriplex canescens (Pursh) Nuttall. Four-wing Saltbush; *chamizo cenizo*; 'onk 'i:vakĩ

CP: RSF 93-61. OP: SR 20031031-1 (ORPI).

Atriplex elegans (Moquin-Tandon) D. Dietrich [*A. elegans* subsp. *fasciculata* (S. Watson) H. M. Hall & Clements]. Wheelscale Orach; *chamizo cenizo*; 'onk 'i:vakĩ

CP: RSF 92-581. OP: Bowers 912.

Atriplex lentiformis (Torrey) S. Watson subsp. **lentiformis**. Quail Bush, Lens Scale, Big Saltbush;
chamizo grande

OP: Nichol 28 Apr 1939.

Atriplex linearis S. Watson [*A. canescens* (Pursh) Nuttall subsp. *linearis* (S. Watson) H. M. Hall & Clements]. Narrowleaf Saltbush. See Felger (2000) and Felger et al. (2007b).

CP: Las Playas, 31 Jan 1992, RSF, observation. OP: RSF 90-488.

Atriplex pacifica A. Nelson. Pacific Orach, South Coast Saltscale

CP: Eiber 7. OP: Bowers 1225.

Atriplex polycarpa (Torrey) S. Watson. Desert Saltbush, Allscale Saltbush; *chamizo cenizo*; 'onk 'i:vakĩ

CP: TRV 9 Mar 1980. OP: RSF 87-268. TA: RSF 02-04.

****Bassia hyssopifolia** (Pallas) Kuntze. Smother Weed

OP: SR 15 Apr 2005 (ORPI).

***Chenopodium murale** Linnaeus. Netleaf Goosefoot; *chual*, *choal*; 'onk 'i:vakĩ, kaupdam

CP: RSF 93-366. OP: Bowers 1015. TA: RSF 98-149.

Chenopodium watsonii A. Nelson. Watson's Goosefoot

OP: Bowers 1019 (ORPI).

Gomphrena sonora Torrey. Sonoran Globe Amaranth

OP: Wirt 13 Nov 1989 (ORPI).

Monolepis nuttalliana (Schultes) Greene. Poverty Weed; 'opoñ

CP: RSF 93-77. OP: Bowers 1160.

Nitrophila occidentalis (Moquin-Tandon) S. Watson. Alkali Weed

OP: Bowers 1333.

***Salsola tragus** Linnaeus [*S. australis* R. Brown. *S. iberica* (Sennen & Pau) Botschantzev ex Czerepanov. *S. kali* of authors, not *S. kali* Linnaeus. *S. kali* var. *tenuifolia* Tausch. *S. pestifer* Nelson]. Russian Thistle, Tumbleweed; *chamizo volador*; hejel 'e'esadam, vo:po'odam sa'i

CP: RSF 92-644. OP: Bowers 1720.

Suaeda nigra (Rafinesque) J. F. Macbride [*S. moquinii* (Torrey) Greene. *S. torreyana* S. Watson]. Bush Seepweed; *quelite salado*; s-cuk onk

CP: RSF 01-544. OP: TRV 30 Aug 1978.

Tidestromia lanuginosa (Nuttall) Standley subsp. **eliassoniana** Sánchez-del Pino & Flores Olvera [*T. eliassoniana* (Sánchez-del Pino & Flores Olvera) Sánchez-del Pino]. Woolly Honeysweet; *hierba ceniza*, *hierba lanuda*

CP: RSF 92-666. OP: RSF 88-408. TA: RSF 04-64.

ANACARDIACEAE – CASHEW FAMILY

Rhus aromatica Aiton var. **trilobata** (Nuttall) A. Gray [*R. trilobata* Nuttall]. Skunk Bush; *limita*
OP: Harbison 25670.

Rhus kearneyi F. A. Barkley subsp. **kearneyi** [*Schmaltzia kearneyi* (F. A. Barkley) F. A. Barkley]. Desert Sumac; *limita del desierto*

CP: Simmons 27 Sep 1964. TA: Harrison & Kearney 6573 (isotype).

APIACEAE (UMBELLIFERAE) – CARROT OR PARSLEY FAMILY

Bowlesia incana Ruiz & Pavón. Hoary Bowlesia

CP: Elias 10202. OP: Bowers 1132.

Daucus pusillus Michaux. Wild Carrot; *zanahoria silvestre*

CP: RSF 93-343. OP: Nichol 26 Mar 1939.

Eryngium nasturtiifolium de Jussieu ex F. Delaroche. *Hierba del sapo*

CP: Lehto L22460.

Lomatium nevadense (S. Watson) J. M. Coulter & Rose. Biscuit-root

OP: SR 2003-333 (ORPI).

Spermolepis echinata (Nuttall ex de Candolle) A. Heller. Bristly Scale-seed

CP: RSF 93-360. OP: McDougall 69.

Yabea microcarpa (Hooker & Arnott) Koso-Poljanski [*Caucalis microcarpa* Hooker & Arnott]. False Carrot

OP: Wirt 1 Apr 1990.

ARISTOLOCHIACEAE, see MAGNOLIIDS

APOCYNACEAE – DOGBANE FAMILY (includes Asclepiadaceae)

Asclepias albicans S. Watson. White-stem Milkweed; *jumate*, *candelilla*

CP: Engard 912 (ASU). TA: Shreve 5941.

Asclepias erosa Torrey. Giant Sand-milkweed, Desert Milkweed; *hierba del cuervo*

CP: RSF 92-622. TA: Simmons 21 May 1965.

Asclepias linaria Cavanilles. Narrow-leaf Milkweed

OP: Darrow 3856.

Asclepias nyctaginifolia A. Gray. Mojave Milkweed

OP: Wirt 10 Aug 1990.

Asclepias subulata Decaisne. Desert Reed-stem Milkweed, Rush Milkweed; *jumete*, *mata candelilla*

CP: Harlan 447. OP: Bowers 1538 (ORPI). TA: RSF 04-03.

Funastrum hartwegii (Vail) Schlechter [*F. cynanchoides* (Decaisne) Schlechter var. *hartwegii*

(Vail) Krings. *Sarcostemma cynanchoides* Decaisne subsp. *hartwegii* (Vail) R. W. Holm. *Funastrum heterophyllum* (Engelmann ex Torrey) Standley]. Climbing Milkweed; *güirote*

CP: Duncan 28 Mar 1970. (CAB). OP: Parker 7982. TA: TRV 9–10 Mar 1980.

Haplophyton cimicidum A. de Candolle [*H. cimicidum* var. *crooksii* L. D. Benson. *H. crooksii* (L. D. Benson) L. D. Benson]. Cockroach Plant; *hierba de la cucaracha*

OP: Supernaugh 432.

Matelea cordifolia (A. Gray) Woodson. Heart-leaf Milkweed Vine

OP: Supernaugh 440 (ORPI).

Matelea parvifolia (Torrey) Woodson. Spearleaf

CP: RSF 94-29. OP: Mulroy 2 May 1970.

Metastelma arizonicum A. Gray [*Cynanchum arizonicum* (A. Gray) Shinnery]

OP: Darrow 2436.

ASCLEPIADACEAE, see APOCYNACEAE

ASTERACEAE (COMPOSITAE) – ASTER OR DAISY FAMILY

Acamptopappus sphaerocephalus (Harvey & A. Gray) A. Gray var. **sphaerocephalus**. Goldenhead

OP: *Tinkham 18 Apr 1942.*

Acourtia nana (A. Gray) Reveal & R.M. King [*Perezia nana* A. Gray]. Desert Holly

OP: *SR 20061007-1.*

Acourtia wrightii (A. Gray) Reveal & R. M. King [*Perezia wrightii* A. Gray]. Brown-foot

CP: *RSF 93-306. OP: Bowers 1702.*

Adenophyllum porophylloides (A. Gray) Strother [*Dyssodia porophylloides* A. Gray]. Dogweed

CP: *RSF 92-735. OP: TRV 85-109.*

Ageratina paupercula (A. Gray) R. M. King & H. Robinson [*Eupatorium pauperculum* A. Gray]. Santa Rita Snakeroot

OP: *Darrow & Gould 4686.*

Ambrosia ambrosioides (Cavanilles) W. W. Payne [*Franseria ambrosioides* Cavanilles]. Canyon Ragweed; *chicura*; ñuñui jej

CP: *Vorhies 11 Apr 1924. OP: Mearns 2736 (US). TA: TRV 9-10 Mar 1980.*

Ambrosia confertiflora de Candolle. Slim-leaf Bur-sage; *estafiate*; mo'ostalk

CP: *RSF 92-538. OP: Bowers 915.*

Ambrosia cordifolia (A. Gray) W. W. Payne [*Franseria cordifolia* A. Gray]. Heart-leaf Bur-sage

OP: *Shreve 6198.*

Ambrosia deltoidea (Torrey) W. W. Payne [*Franseria deltoidea* Torrey]. Triangle-leaf Bur-sage; *chamizo forrajero*; tadsad, va:gita

CP: *RSF 92-680. OP: RSF 90-401. TA: TRV 26 Mar 1983.*

Ambrosia dumosa (A. Gray) W. W. Payne [*Franseria dumosa* A. Gray]. White Bur-sage; *chamizo*; tadsad

CP: *Shreve 5918. OP: Bowers 991. TA: RSF 04-07.*

Ambrosia dumosa × **A. ilicifolia** (putative hybrid)

TA: *RSF 98-136.*

Ambrosia ilicifolia (A. Gray) W. W. Payne [*Franseria ilicifolia* A. Gray]. Holly-leaf Bur-sage

CP: *Goodding 30 Nov 1938. TA: Vorhies 16 Apr 1924.*

Ambrosia monogyra (Torrey & A. Gray) Strother & B. G. Baldwin [*Hymenoclea monogyra* Torrey & A. Gray]. Slender Burrobrush; *jécota*; 'i:vadhod

CP: *RSF 87-261. OP: RSF 87-261.*

Ambrosia salsola (Torrey & A. Gray) Strother & B. G. Baldwin var. **pentalepis** (Rydberg) Strother & B. G. Baldwin [*Hymenoclea salsola* Torrey & A. Gray var. *pentalepis* (Rydberg) L. D. Benson].

White Burrobrush, Cheesebush; 'i:wadhod

CP: *RSF 93-166. OP: Mearns 2768 (US). TA: Webster 24245.*

Arida arizonica (R. C. Jackson & R. R. Johnson) D. R. Morgan & R. L. Hartman [*Machaeranthera arizonica* R. C. Jackson & R. R. Johnson. *M. arida* B. L. Turner & D. B. Horne. *M. coulteri* (A.

Gray) B. L. Turner & D. B. Horne var. *arida* (B. L. Turner & D. B. Horne) B. L. Turner. *M.*

ammophila Reveal. *Psilactis coulteri* A. Gray]. Arid Tansy-aster

CP: *RSF 93-435. OP: Jackson 3043-2 (isotype of M. arizonica).*

Arida carnosa (A. Gray) D. R. Morgan & R. L. Hartman [*Aster carnosus* (A. Gray) A. Gray ex Hemsley, not *A. carnosus* Gilbert. *A. intricatus* (A. Gray) S. F. Blake. *Leucosyris carnosa* (A. Gray)

Greene. *Machaeranthera carnosa* (A. Gray) G. L. Nesom var. *intricata* (A. Gray) G. L. Nesom].

Alkali Aster

OP: *Stimson 233.*

Artemisia dracuncululus Linnaeus [*A. dracunculoides* Pursh]. Tarragon; *estragon*

OP: *Goodding 484-45.*

Artemisia ludoviciana Nuttall subsp. **albula** (Wooton) D. D. Keck. Western Mugweed, White Sage, Silver Wormwood; *estafiate*

OP: *Harbison 26269.*

Baccharis brachyphylla A. Gray. Short-leaf Baccharis

CP: *RSF 92-533. OP: Warren 10 Nov 1983. TA: Goodding 1186.*

Baccharis salicifolia (Ruiz & Pavón) Persoon subsp. **salicifolia** [*B. glutinosa* Persoon]. Seep

Willow; *batamote*; susk

CP: *RSF 92-576. OP: Nichol 28 Apr 1939.*

- Baccharis sarothroides** A. Gray. Desert Broom; *escoba amarga*, *romerillo*; susk kuagig
CP: RSF 92-706. OP: Mearns 2775 (US). TA: RSF 04-26, 04-27.
- Bahiopsis parishii** (Greene) E. E. Schilling & Panero [*Viguiera parishii* Greene. *V. deltoidea* A. Gray var. *parishii* (Greene) Vasey & Rose]. Parish's Goldeneye; *ariosa*
CP: RSF 93-295. OP: Harbison 26168. TA: RSF 04-84.
- Baileya multiradiata** Harvey & A. Gray. Many-flowered Desert-marigold; gi:ko
CP: RSF 92-747. OP: Nichol 17 Apr 1939.
- Baileya pleniradiata** Harvey & A. Gray. Woolly Desert-marigold
CP: Benson 10782. OP: Bowers 1171. TA: RSF 05-48.
- Bebbia juncea** (Bentham) Greene var. **aspera** Greene. Sweetbush, Chuckwalla Delight; hauk 'u'us
CP: Simmons 2 Oct 1963. OP: Benson 9907. TA: TRV 5 Mar 1983.
- Brickellia atractyloides** A. Gray var. **atractyloides**. Spiny-leaf Brickellbush
CP: RSF 92-583. TA: Vorhies 16 Apr 1924.
- Brickellia californica** (Torrey & A. Gray) A. Gray. California Brickellbush
OP: Bowers 929 (ORPI).
- Brickellia coulteri** A. Gray var. **coulteri**. Triangle-leaf Brickellbush; *pachaba*
CP: RSF 93-271. OP: Harbison 26143.
- Brickellia frutescens** A. Gray. Shrubby Brickellbush
OP: Darrow 3841.
- Calycoseris wrightii** A. Gray. White Tack-stem
CP: RSF 93-340. OP: Parker 7926. TA: RSF 05-145.
- **Carthamus tinctorius** Linnaeus. Safflower; *cártamo*
OP: Bowers 1717 (ORPI).
- *Centaurea melitensis** Linnaeus. Malta Star Thistle
CP: RSF 92-716. OP: RSF 89-251.
- Chaenactis carphoclinia** A. Gray var. **carphoclinia**. Pebble Pincushion
CP: RSF 93-403. OP: RSF 03-352. TA: TRV 26 Mar 1983.
- Chaenactis stevioides** Hooker & Arnott. Desert Pincushion
CP: RSF 93-369. OP: Nichol 14 Mar 1939. TA: Lindquist 26 Mar 1983.
- Cirsium neomexicanum** A Gray. New Mexico Thistle; *cardo*; gewel
OP: Gould 31 Mar 1948.
- Diaperia verna** (Rafinesque) Morefield var. **verna** [*Evax multicaulis* de Candolle. *E. verna* Rafinesque var. *verna*]. Spring Pygmy Cudweed, Rabbit Tobacco
CP: Harlan 167. OP: SR 2003-391.
- Dieteria asteroides** Torrey var. **glandulosa** (B. L. Turner) D. R. Morgan & R. L. Hartman [*Machaeranthera asteroides* (Torrey) Greene var. *glandulosa* B. L. Turner]. Fall Tansy-aster
OP: Goodding 485-45.
- Eclipta prostrata** (Linnaeus) Linnaeus [*E. alba* (Linnaeus) Hasskarl. *E. erecta* Linnaeus]. False Daisy; *chile de agua*, *hierba del tajo*
OP: Niles 724.
- Encelia farinosa** A. Gray ex Torrey. Brittlebush; *incienso*, *hierba del bazo*, *rama blanca*; tohaves
CP: RSF 92-54. OP: McDougall 55. TA: Goodding 2204.
- Encelia farinosa** × **E. frutescens**
OP: Bowers 1131. TA: RSF 01-585.
- Encelia frutescens** (A. Gray) A. Gray. Button Encelia
CP: Lehto L23586 (ASU). OP: Bowers 1130. TA: RSF 04-65.
- Ericameria cuneata** (A. Gray) McClatchie var. **spathulata** (A. Gray) H. M. Hall [*Haplopappus cuneatus* A. Gray var. *spathulata* (A. Gray) S. F. Blake]. Wedgeleaf Goldenbush
OP: RSF 90-513.
- Ericameria laricifolia** (A. Gray) Shinnars [*Haplopappus laricifolius* A. Gray]. Turpentine Bush
OP: Bowers 969.
- *Erigeron canadensis** Linnaeus [*Conyza canadensis* (Linnaeus) Cronquist]. Horsecweed; *cola de caballo*
CP: RSF 92-568. OP: RSF 87-322.
- Erigeron lobatus** A. Nelson. Desert Fleabane
CP: RSF 93-325. OP: RSF 86-182. TA: RSF 98-118.

- Eriophyllum lanosum** (A. Gray) A. Gray [*Antheropeas lanosum* (A. Gray) Rydberg]. Woolly Daisy
CP: Whipple 3944. OP: Harlan 03-6.
- Gaillardia arizonica** A. Gray [*G. arizonica* var. *pringlei* (Rydberg) S. F. Blake]. Arizona Blanket-flower
CP: Malusa 18 Apr 2001. OP: McDougall 63.
- Gamochaeta stagnalis** (I. M. Johnston) Anderberg [*Gnaphalium stagnale* I. M. Johnston]. Desert Cudweed, Rosy Everlasting
OP: SR 20050318-9.
- Geraea canescens** Torrey & A. Gray. Desert Sunflower, Desert Gold
CP: Shreve 5927. OP: McDougall 8. TA: TRV 27 Mar 1983.
- Gutierrezia arizonica** (A. Gray) M. A. Lane [*Greenella arizonica* A. Gray]. Arizona Snakeweed
CP: RSF 93-367. OP: Bowers 1154.
- Gutierrezia sarothrae** (Pursh) Britton & Rusby. Broom Snakeweed, Ruby Matchweed; *hierba de la víbora*; *siw tadsagi*
CP: RSF 92-584. OP: Bowers 935.
- Gymnosperma glutinosum** (Sprengel) Lessing [*Selloa glutinosa* Sprengel]. Gumhead
CP: Benson 10802. OP: Bowers 988. TA: McLaughlin 1969.
- *Helianthus annuus** Linnaeus. Sunflower; *mirasol*
OP: SR 21 Jul 1998 (ORPI).
- Helianthus niveus** (Benth) Brandege subsp. **tephrodes** (A. Gray) Heiser. Dune Sunflower; *mirasol de las dunas*; *hi:wai*
CP: RSF 92-775.
- Hymenothrix wislizeni** A. Gray. Thimblehead
CP: RSF 92-536. OP: Harbison 26196.
- Hymenoxys odorata** de Candolle. Bitterweed
CP: RSF 93-382.
- Isocoma acradenia** (Greene) Greene var. **acradenia** [*Haplopappus acradenius* (Greene) S. F. Blake]. Alkali Goldenbush
CP: Tule Well (Simmons 1965, 1966). OP: Simmons 11 Oct 1963.
- Koanophyllon palmeri** (A. Gray) R. M. King & H. Robinson [*Eupatorium palmeri* A. Gray (a segregate of *E. solidaginifolium* A. Gray)]. Umbrella Thoroughwort
CP: Tule Well (Simmons 1965, 1966). OP: RSF 90-528.
- *Lactuca serriola** Linnaeus. Prickly Lettuce, Compass Plant
CP: RSF 93-375. OP: Bowers 1756. TA: RSF 10-162.
- Laennecia coulteri** (A. Gray) G. L. Nesom [*Conyza coulteri* A. Gray]. Coulter's Horsetweed
CP: Harlan 269 (CAB). OP: RSF 87-291. TA: RSF 02-14.
- Logfia arizonica** (A. Gray) Holub [*Filago arizonica* A. Gray]. Arizona Fluffweed
CP: RSF 92-561. OP: RSF 88-274. TA: RSF 98-114.
- Logfia depressa** (A. Gray) Holub [*Filago depressa* A. Gray]. Dwarf Fluffweed
CP: RSF 93-400. OP: Lehto 6-15440-b (ASU, mixed sheet with *Stylocline gnaphaloides*).
- Logfia filaginoides** (Hooker & Arnott) Morefield [*L. californica* (Nuttall) Holub. *Filago californica* Nuttall]. California Fluffweed
CP: RSF 92-573. OP: Bowers 1248. TA: RSF 98-144.
- Machaeranthra tagetina** Greene [*Aster tagetinus* (Greene) S. F. Blake]. Mesa Tansyaster
OP: RSF 05-219.
- Malacothrix fendleri** A. Gray. Fendler's Desert-dandelion
CP: Cuttler 17 Mar 1995 (CAB). OP: RSF 03-259.
- Malacothrix glabrata** (A. Gray ex D. C. Eaton) A. Gray [*M. californica* de Candolle var. *glabrata* A. Gray ex D. C. Eaton]. Desert Dandelion
CP: McLaughlin 2983. OP: SR 2003-399.
- Malacothrix sonora** W. S. Davis & P. H. Raven. Sonoran Desert Dandelion
CP: Harlan 220. OP: Niles 554.
- Monoptilon bellioides** (A. Gray) H. M. Hall. Mojave Desert Star
CP: SR & Tibbitts 18 Feb 2002. OP: Benson 10625. TA: Halse 31 Mar 1973.

- *Oncosiphon piluliferum** (Linnaeus f.) Källersjö [*Matricaria globifera* (Thunberg) Frez] ex Harvey]. Pineapple-weed, False Chamomile; *manzanilla*
OP: SR 15 Apr 2005. **CP:** Harlan 165.
- Packera quercetorum** (Greene) C. Jeffrey [*Senecio quercetorum* Greene]. Oak Creek Ragwort
OP: Bowers 1284.
- Palafoxia arida** B. L. Turner & M. I. Morris var. **arida**. Spanish Needles
CP: Benson 10787. **OP:** RSF 88-406. **TA:** TRV 27 Mar 1983.
- Parthenice mollis** A. Gray. Annual Monsterwort
OP: SR 20031025-13.
- Pectis cylindrica** (Fernald) Rydberg. Sonoran Chinchweed
CP: RSF 01-566.
- Pectis linifolia** Linnaeus var. **linifolia** [*P. linifolia* var. *marginalis* Fernald. *P. punctata* Jacquin]. *Romero macho*
OP: Wirt 13 Aug 1990.
- Pectis papposa** Harvey & A. Gray var. **papposa**. Desert Chinchweed; *manzanilla del coyote*; *ban manzani:ya*
CP: RSF 92-557. **OP:** Bowers 1535. **TA:** RSF 04-56.
- Perityle ajoensis** Todsén. Ajo Rock Daisy
OP: Todsén 2292 (isotypes ARIZ, ORPI).
- Perityle emoryi** Torrey. Desert Rock Daisy
CP: Whipple 3912. **OP:** McDougall 50. **TA:** RSF 04-57.
- Peucephyllum schottii** A. Gray. Pygmy-cedar; *romero del desierto*
CP: Hodgson 2752 (DES). **TA:** TRV 5 Mar 1983.
- Pleurocoronis laphamioides** (Rose) R. M. King & H. Robinson [*Hofmeisteria laphamioides* Rose]
OP: Gould 3019.
- Pleurocoronis pluriseta** (A. Gray) R.M. King & H. Robinson [*Hofmeisteria pluriseta* A. Gray]. Arrow-leaf; *canutillo*
CP: Benson 10804. **TA:** Goodding 2103.
- Pluchea odorata** (Linnaeus) Cassini var. **odorata** [*P. purpurascens* (Swartz) de Candolle]. Saltmarsh-fleabane, Alkali Camphor-weed; *jara*
OP: RSF 86-204.
- Pluchea sericea** (Nuttall) Coville [*Tessaria sericea* (Nuttall) Shinners]. Arrow-weed; *cachanilla*; *komagi 'u'us*, *'u'us kokomadk*
OP: Bowers 1315.
- Porophyllum gracile** Benth. Slender Poreleaf; *odora*, *hierba del venado*
CP: SR 2003-19. **OP:** RSF 88-118 (ORPI). **TA:** TRV 5 Mar 1983.
- Prenanthes exiguua** (A. Gray) Rydberg [*Lygodesmia exiguua* (A. Gray) A. Gray]. Brightwhite
CP: Bowers 2996. **OP:** Gould 2990. **TA:** RSF 98-132.
- Psathyrotes ramosissima** (Torrey) A. Gray. Desert Velvet, Turtleback
CP: Yeatts 3246 (CAB). **TA:** Halse 31 Mar 1973.
- Pseudognaphalium canescens** (de Candolle) Anderberg [*Gnaphalium canescens* de Candolle. *G. wrightii* A. Gray]. Wright's Cudweed
OP: Bowers 1927.
- Psilostrophe cooperi** (A. Gray) Greene. Paper-daisy, Paper-flower
CP: RSF 93-302. **OP:** McDougal 22 Mar 1941.
- Rafinesquia californica** Nuttall. California Chicory
CP: RSF 93-299. **OP:** McDougall 29.
- Rafinesquia neomexicana** A. Gray. Desert Chicory
CP: Harbison 26156. **OP:** Shreve 6206. **TA:** McLaughlin 1974.
- Senecio flaccidus** Lessing var. **monoensis** (Greene) B. L. Turner & T. M. Barkley [*S. monoensis* Greene]. Sandwash Groundsel, Threadleaf Ragwort
OP: Bowers 1600.
- Senecio lemmonii** A. Gray. Lemmon Groundsel
CP: Simmons 24 Jan 1965. **OP:** Kearney 10849.
- Senecio mohavensis** A. Gray. Mojave Groundsel, Mohave Ragwort
CP: RSF 93-91. **OP:** McDougall 76. **TA:** TRV 26 Mar 1983.

- ***Sonchus asper** (Linnaeus) Hill subsp. **asper**. Prickly Sow Thistle; *chinita*; ho'idkam, 'i:vaki
CP: RSF 93-98. OP: Nichol 4 May 1939. TA: RSF 02-10.
- ***Sonchus oleraceus** Linnaeus. Common Sow Thistle; *chinita*; hauvī, hehewo
OP: Bowers 1594. TA: Frontera Canyon, 18 Mar 1998, RSF, observation.
- Stephanomeria exigua** Nuttall subsp. **exigua**. Wire-lettuce
OP: SR 2003-457.
- Stephanomeria pauciflora** (Torrey) A. Nelson. Desert-straw, Desert Wire-lettuce
CP: Cain 15 Nov 2003. OP: RSF 86-293. TA: TRV 86-144.
- Stephanomeria schottii** (A. Gray) A. Gray. Schott's Wire-lettuce
CP: Reeves 6780.
- Stylocline gnaphaloides** Nuttall [*S. arizonica* Coville]. Everlasting Neststraw
OP: Lehto 6-15440-b (ASU, mixed sheet with *Logfia depressa*).
- Stylocline micropoides** A. Gray. Desert Neststraw
CP: Whipple 3926. OP: Niles 553. TA: RSF 98-143.
- Thymophylla concinna** (A. Gray) Strother [*Dyssodia concinna* (A. Gray) B. L. Robinson].
Dogweed; *manzanilla de coyote*; ban mansani:ya
CP: Niles 341. OP: RSF 88-119.
- Thymophylla pentachaeta** (de Candolle) Small var. **belenidium** (de Candolle) Strother [*Dyssodia pentachaeta* (de Candolle) B. L. Robinson var. *belenidium* (de Candolle) Strother]. Five-needle
Prickly-leaf
CP: RSF 92-636A. OP: Beal 10 Mar 1987 (ORPI).
- Townsendia annua** Beaman. Annual Townsend Daisy
OP: SR 2003-287.
- Trichoptilium incisum** (A. Gray) A. Gray. Yellow-head
CP: RSF 92-776. OP: SR 2003-316 (ORPI). TA: TRV 10 Mar 1986.
- Trixis californica** Kellogg var. **californica**. California Threefold
CP: Reichenbacher 470. OP: Lockwood 162. TA: Vorhies 16 Apr 1924.
- Uropappus lindleyi** (de Candolle) Nuttall [*Microseris linearifolia* (de Candolle) Schultz Bipontinus.
M. lindleyi (de Candolle) A. Gray]. Silverpuffs
CP: RSF 93-352. OP: McDougall 98.
- ****Verbesina encelioides** (Cavanilles) Benth & Hooker f. ex A. Gray subsp. **exauriculata** (B. L. Robinson & Greenman) J. R. Coleman. Golden Crownbeard
OP: Harbison 26271 (SD).
- Xanthisma gracile** (Nuttall) D. R. Morgan & R. L. Hartman [*Haplopappus gracilis* (Nuttall) A. Gray. *Machaeranthera gracilis* (Nuttall) Shinnars]. Slender Goldenweed
OP: Bowers 1698.
- Xanthisma spinulosum** (Pursh) D. R. Morgan & R. L. Hartman var. **gooddingii** (A. Nelson) D. R. Morgan & R. L. Hartman [*Haplopappus spinulosus* (Pursh) de Candolle subsp. *gooddingii* (A. Nelson) H. M. Hall. *Machaeranthera pinnatifida* (Hooker) Shinnars var. *gooddingii* (A. Nelson) B. L. Turner & Hartman]. Spiny Goldenweed
CP: Whipple 3932. OP: Cooper 554. TA: Kurtz 1169.
- Zinnia acerosa** (de Candolle) A. Gray. Desert Zinnia; *zinia del desierto*
OP: Bowers 1692.

BERBERIDACEAE – BARBERRY FAMILY

- Berberis haematocarpa** Wooton [*Mahonia haematocarpa* (Wooton) Fedde]. Red Barberry
OP: Niles 536.
- Berberis harrisoniana** Kearney & Peebles. Kofa Mountain Barberry
OP: Phillips 76-2.

BIGNONIACEAE – BIGNONIA FAMILY

- Chilopsis linearis** (Cavanilles) Sweet subsp. **arcuata** (Fosberg) Henrickson. Desert-willow; *mimbre*
CP: RSF 92-547. OP: SR 20061008-13.

BORAGINACEAE – BORAGE FAMILY (includes Hydrophyllaceae)

Amsinckia intermedia Fischer & C. A. Meyer. Devil's Lettuce, Fiddleneck; cetkom

CP: RSF 93-58. OP: RSF 88-305. TA: TRV 5 Mar 1983.

Amsinckia tessellata A. Gray var. **tessellata**. Desert Fiddleneck; cetkom

CP: RSF 93-181. OP: Cooper 727. TA: RSF 10-161.

Cryptantha angustifolia (Torrey) Greene. Narrow-leaf Cryptantha, Desert Cryptantha

CP: Shreve 6219. OP: Bowers 1593. TA: TRV 5 Mar 1983.

Cryptantha barbiger (A. Gray) Greene. Bearded Cryptantha

CP: Kearney 1088. OP: RSF 87-260. TA: RSF 98-137.

Cryptantha ganderi I. M. Johnston. Dune Cryptantha

CP: RSF 93-388.

Cryptantha holoptera (A. Gray) J. F. Macbride. Winged Cryptantha

CP: Benson 10791.

Cryptantha maritima (Greene) Greene [includes var. *maritima* and var. *pilosa* I. M. Johnston]. White-haired Cryptantha

CP: Benson 10758. OP: Gould 3005. TA: Kearney 10905.

Cryptantha micrantha (Torrey) I. M. Johnston subsp. **micrantha**. Dwarf Cryptantha

CP: Shreve 6217. TA: Butterwick 6265.

Cryptantha pterocarya (Torrey) Greene var. **cycloptera** (Greene) J. F. Macbride. Wing-nut Cryptantha

CP: Kearney 10893. OP: McDougall 19. TA: TRV 10 Mar 1980.

Cryptantha racemosa (S. Watson ex A. Gray) Greene. Bushy Cryptantha

TA: TRV 5 Mar 1983.

Eucrypta chrysanthemifolia (Benth) Greene var. **bipinnatifida** (Torrey) Constance. Spotted Hideseed

CP: Daniel 2656 (ASU). OP: Benson 10661.

Eucrypta micrantha (Torrey) A. Heller. Desert Hideseed; *peluda*

CP: SR 2003-40. OP: McDougall 43. TA: TRV 5 Mar 1983.

Harpagonella palmeri A. Gray. Palmer's Grappling-hook

OP: RSF 05-218.

Heliotropium curassavicum Linnaeus [*H. curassavicum* var. *oculatum* (A. Heller) I. M. Johnston ex Tidestrom]. Alkali Heliotrope; *hierba del sapo*; babad 'i:vaki, kakaicu 'i:vaki

CP: RSF 92-577. OP: McDougall 90.

Lappula redowskii (Hornemann) Greene var. **cupulata** (A. Gray) M. E. Jones [*L. occidentalis* (S. Watson) Greene]. Crowned Stickseed

CP: Kearney 11029. OP: Parker 7990.

Nama demissum A. Gray var. **demissum**. Purple Mat

CP: RSF 93-442. TA: RSF 98-112.

Nama hispidum A. Gray var. **spathulatum** (Torrey) C. L. Hitchcock [*N. coulteri* A. Gray]. Bristly Nama

CP: SR 18 Feb 2002. OP: Fay 744. TA: RSF 04-52.

Pectocarya heterocarpa (I. M. Johnston) I. M. Johnston. Mixed-nut Comb-bur

CP: Parker 7936. OP: Parker 7936. TA: TRV 5 Mar 1983.

Pectocarya platycarpa (Munz & I. M. Johnston) Munz & I. M. Johnston. Broad-winged Comb-bur

CP: Whipple 3949. OP: Benson 10664. TA: TRV 5 Mar 1983.

Pectocarya recurvata I. M. Johnston. Arched Comb-bur

CP: RSF 93-362. OP: Parker 7936A.

Phacelia affinis A. Gray. Limestone Phacelia

OP: Bowers 1069 (ORPI).

Phacelia coerulea Greene. Sky-blue Phacelia

CP: Lehto L 23535 (ASU). OP: Kearney 10824.

Phacelia crenulata Torrey ex S. Watson var. **ambigua** (M. E. Jones) J. F. Macbride [*P. ambigua* M. E. Jones. *P. minutiflora* J. W. Voss ex Munz]. Desert Heliotrope

CP: Reeves 6766 (ASU). OP: Bowers 1028. TA: TRV 5 Mar 1983.

Phacelia distans Benth. Caterpillar Phacelia, Fernleaf Phacelia

CP: McManus 661. OP: Kearney 10853.

Phacelia neglecta M. E. Jones. Alkali Phacelia

CP: *Lehto 123540* (ASU). OP: *TRV 85-8*. TA: *RSF 05-62*.

Phacelia pedicellata A. Gray. Pedicellate Phacelia

CP: *Irwin 93* (ASU). OP: *Niles 552*. TA: *RSF 98-145*.

Phacelia ramosissima Douglas ex Lehmann [*P. ramosissima* var. *latifolia* (Torrey) Cronquist].

Branching Phacelia

OP: *Harbison 26261*.

Phacelia rotundifolia Torrey ex S. Watson. Roundleaf Phacelia

OP: *Christy 1263* (ASU).

Pholistoma auritum (Lindley) Lilja ex Lindblom var. **arizonicum** (M. E. Jones) Constance. Blue Fiesta-flower

CP: *RSF 93-62*. OP: *Kearney 10817*.

Plagiobothrys arizonicus (A. Gray) Greene ex A. Gray. Arizona Popcorn-flower

OP: *RSF 03-271*.

Plagiobothrys jonesii A. Gray. Mojave Popcorn-flower

OP: *TRV 19 Feb 1984*.

Tiquilia canescens (A. de Candolle) A. T. Richardson var. **pulchella** (I. M. Johnston) A. T.

Richardson. Woody Crinklemat

CP: *TRV 9 Mar 1980*. OP: *SR 2003-211*.

Tiquilia palmeri (A. Gray) A.T. Richardson. Palmer's Crinklemat

CP: *RSF 93-410*. TA: *TRV 27 Mar 1983*.

BRASSICACEAE (CRUCIFERAE) – MUSTARD FAMILY

Boechera perennans (S. Watson) W. A. Weber [*Arabis perennans* S. Watson]. Perennial Rockcress

OP: *Nichol 14 Mar 1939*.

***Brassica nigra** (Linnaeus) W. D. J. Koch. Black Mustard; *mostaza negra*

OP: *SR 2003-449*.

***Brassica tournefortii** Gouan. Sahara Mustard; *mostaza*

CP: *RSF 93-418*. OP: *Bowers 1030*. TA: *RSF 04-33*.

***Capsella bursa-pastoris** (Linnaeus) Medikus. Shepherd's Purse; *hierba del pastor*

CP: *RSF 93-201*.

Caulanthus lasiophyllus (Hooker & Arnott) Payson [*Guillenia lasiophylla* (Hooker & Arnott)

Greene. *Thelypodium lasiophyllum* (Hooker & Arnott) Greene]. California Mustard

CP: *Reeves 6822* (ASU). OP: *RSF 88-133*. TA: *Reeves 5404* (ASU).

Descurainia pinnata (Walter) Britton subsp. **ochroleuca** (Wooton) Detling. Western Tansy

Mustard; *pamita*; *su'uvad*

CP: *RSF 93-277*. OP: *Nichol 14 Mar 1939*. TA: *RSF 05-152*.

Dimorphocarpa pinnatifida Rollins. Dune Spectacle-pod

CP: *RSF 92-27*. TA: *RSF 98-138*.

Dithyrea californica Harvey. California Spectacle-pod

CP: *RSF 92-28*. TA: *TRV 27 Mar 1983*.

Draba cuneifolia Nuttall ex Torrey & A. Gray [*D. cuneifolia* var. *integrifolia* S. Watson. *D.*

cuneifolia var. *sonorae* (Greene) Parish]. Wedgeleaf Draba

CP: *RSF 93-62*. OP: *Bowers 1006*. TA: *RSF 05-36*.

***Eruca vesicaria** (Linnaeus) Cavanilles subsp. **sativa** (Miller) Thellung [*E. sativa* Miller]. Garden-rocket, Salad-rocket, Arugala

OP: *Conner 16 Feb 2005*.

Erysimum capitatum (Douglas ex Hooker) Greene [perhaps *E. capitatum* var. *purshii* (Durand)

Rollins]. Western Wallflower

OP: *Tinkham 15 Apr 1942*.

Hesperidanthus linearifolius (A. Gray) Rydberg [*Schoenocrambe linearifolia* (A. Gray) Rollins.

Sisymbrium linearifolium (A. Gray) Payson. *Thelypodopsis linearifolia* (A. Gray) Al-Shehbaz].

Purple Rock-mustard

OP: *Bowers 1090*.

Lepidium densiflorum Schrader. Common Peppergrass, Common Pepper-weed

OP: *Bowers 1063*.

- Lepidium lasiocarpum** Nuttall subsp. **lasiocarpum**. Sand Pepper-weed; *lentejilla*
CP: RSF 93-426. **OP:** Shreve 6203. **TA:** TRV10 Mar 1980.
- Lepidium thurberi** Wooton. Arizona Pepper-weed
OP: McDougall 32.
- Lyrocarpa coulteri** Hooker & Harvey. Lyre-pod; ban censañig
CP: Goodding 1554. **OP:** Parker 7914. **TA:** Harrison 6563.
- **Matthiola longipetala** (Ventenat) de Candolle [*M. bicornis* (Sibthorp & Smith) de Candolle].
 Night-scented Stock
OP: SR 27 Apr 2005.
- **Nasturtium officinale** W. T. Aiton [*Rorippa nasturtium-aquaticum* (Linnaeus) Hayek].
 Watercress; *berro*
OP: Williams Spring (extirpated, Felger et al. 1992).
- Physaria tenella** (A. Nelson) O’Kane & Al-Shehbaz [*Lesquerella tenella* A. Nelson]. Desert
 Bladderpod
CP: RSF 92-60. **OP:** McDougall 15. **TA:** TRV 5 Mar 1983.
- Sibara angelorum** (S. Watson) Greene. Angled Rockcress
CP: Lehto L23523 (ASU).
- Sibara virginica** (Linnaeus) Rollins. Winged Rockcress
CP: Harlan 495.
- **Sisymbrium altissimum** Linnaeus. Tumble Mustard, Jim Hill Mustard
OP: SR 15 Mar 2005 (ORPI).
- *Sisymbrium irio** Linnaeus. London Rocket; *pamitón*; ban cinsañig
CP: RSF 92-64. **OP:** Kearney 10830.
- *Sisymbrium orientale** Linnaeus. Indian hedge-mustard
CP: RSF 05-158. **OP:** SR 20050315-1.
- Streptanthella longirostris** (S. Watson) Rydberg. Long-beak Twist-flower
CP: RSF 92-20. **OP:** Baker 7701 (ORPI).
- Streptanthus carinatus** C. Wright ex A. Gray subsp. **arizonicus** (S. Watson) Kruckenberg, Rodman,
 & Worthington [*S. arizonicus* var. *luteus* Kearney & Peebles]. Arizona Jewel Flower
OP: Nichol 26 Mar 1939.
- Thelypodium wrightii** A. Gray [*Stanleyella wrightii* (A. Gray) Rydberg]
OP: Hesselberg 16 Oct 1966.
- **Thlaspi arvense** Linnaeus. Fanweed, Roadside Pennycress
OP: Pinkava 9993 (ASU).
- Thysanocarpus curvipes** Hooker [*T. curvipes* var. *elegans* (Fischer & C. A. Meyer) B. L.
 Robinson]. Lacepod
CP: RSF 93-93. **OP:** Kearney 10816.

BURSERACEAE – TORCHWOOD FAMILY

- Bursera microphylla** A. Gray. Elephant Tree; *torote*; ‘usabkam
CP: Elias 10308. **OP:** Bowers 1095. **TA:** Vorhies 16 Apr 1924.

CACTACEAE – CACTUS FAMILY

- Carnegiea gigantea** (Engelmann) Britton & Rose [*Cereus giganteus* Engelmann]. Saguaro, Sahuaro;
saguaro; *ha:sañ*
CP: Rebman 2884 (DES). **OP:** RSF 90-70. **TA:** Tinajas Altas, 19 Mar 1998, RSF,
 observation.
- Cylindropuntia acanthocarpa** (Engelmann & J. M. Bigelow) F. M. Knuth [*Opuntia acanthocarpa*
 Engelmann & J. M. Bigelow]. Buckhorn Cholla; *choya*; *ciolim* (also *hanamí*, the general term for
 cholla)
- Cylindropuntia acanthocarpa** var. **coloradensis** (L. D. Benson) Pinkava [*Opuntia acanthocarpa*
 var. *coloradensis* L. D. Benson]
CP: Rebman 2883 (ASU). **OP:** Baker 7578 (ASU). **TA:** Reeves R5395 (ASU).

Cylindropuntia acanthocarpa var. **major** (Engelmann & J. M. Bigelow) Pinkava [*Opuntia echinocarpa* Engelmann var. *major* Engelmann. *O. acanthocarpa* var. *major* (Engelmann & J. M. Bigelow) L. D. Benson]

CP: 7 Harbison 17004 & 17005 (SD). OP: Steenbergh 5-2662-1 (neotype, RSA/POM).

Cylindropuntia acanthocarpa x **C. spinosior**

OP: Baker 8366 (ASU, SD).

Cylindropuntia arbuscula (Engelmann) F. M. Knuth [*Opuntia arbuscula* Engelmann]. Pencil Cholla; *siviri*, *tasajo*; vipinoi

OP: Baker 7573 (ASU).

Cylindropuntia bigelovii (Engelmann) F. M. Knuth [*Opuntia bigelovii* Engelmann]. Teddybear Cholla; *choya güera*; hadsadkam (also hanamĩ, the general term for cholla)

CP: Benson 10766. OP: Baker 7588 (ASU, ORPI). TA: Mearns 348 (US).

Cylindropuntia echinocarpa (Engelmann & J. M. Bigelow) F. M. Knuth [*Opuntia echinocarpa* Engelmann & J. M. Bigelow. *O. wigginsii* L. D. Benson]. Silver Cholla

CP: Rebman 2881 (SD). TA: SE of Tinajas Altas Mts, 3 Feb 1990, RSF, observation.

Cylindropuntia fulgida (Engelmann) F. M. Knuth [*Opuntia fulgida* Engelmann]. Chain-fruit Cholla; *choya*; hanamĩ

Cylindropuntia fulgida var. **fulgida** [*Opuntia fulgida* var. *fulgida*]

CP: Rebman 2888 (DES). OP: Harbison 26170.

Cylindropuntia fulgida var. **mamillata** (Schott ex Engelmann) Backeberg [*Opuntia fulgida* var. *mamillata* (Schott ex Engelmann) J. M. Coulter]

OP: Near Kuakatch, 10 Apr 2000, SR (photo).

Cylindropuntia leptocaulis (de Candolle) F.M. Knuth [*Opuntia leptocaulis* de Candolle]. Desert Christmas Cholla; *tasajillo*; 'ajĩ vipinoi, ce'ecem vipinoi

CP: Rebman 2886 (SD). OP: RSF 88-470.

Cylindropuntia ramosissima (Engelmann) F. M. Knuth [*Opuntia ramosissima* Engelmann]. Diamond cholla

CP: Harbison 15 Nov 1937 (SD). OP: Baker 7776 (ASU, ORPI). TA: Reeves 5394 (ASU).

Cylindropuntia spinosior (Engelmann) F. M. Knuth [*Opuntia spinosior* (Engelmann) Toumey]. Cane Cholla

CP: RSF 92-546. OP: Harbison 26188 (ARIZ, SD).

Cylindropuntia versicolor (Engelmann ex J. M. Coulter) F. M. Knuth [*Opuntia versicolor* Engelmann]. Staghorn Cholla; *siviri*

OP: Baker 7752 (ASU).

Echinocactus polycephalus Engelmann & J. M. Bigelow var. **polycephalus**. Many-headed Barrel Cactus, Cottontop Cactus, Cannonball Cactus; *biznaga*

CP: RSF 92-596. TA: Reeves 5426 (ASU).

Echinocereus engelmannii (Parry ex Engelmann) Lemaire. Strawberry Hedgehog Cactus; *pitayita*; 'isvigĩ

Echinocereus engelmannii var. **acicularis** L. D. Benson

OP: Peebles 14555.

Echinocereus engelmannii var. **chrysocentrus** (Engelmann & J. M. Bigelow) Rümpler

CP: Sheep Mt, 31 Jan 1992, RSF, observation. TA: Blackwell 709.

Echinocereus nicholii (L. D. Benson) B. D. Parfitt [*E. engelmannii* var. *nicholii* L. D. Benson]. Golden Hedgehog Cactus

CP: RSF 93-280. OP: Benson 9901.

Echinocereus santaritensis W. Blum & Rutow. Claret-cup Cactus

OP: Baker 14050 (ASU).

Echinomastus erectocentrus (J. M. Coulter) Britton & Rose var. **acunensis** (W. T. Marshall) Bravo [*E. acunensis* W. T. Marshall. *Neolloydia erectocentra* (J.M. Coulter) L. D. Benson var. *acunensis* (W. T. Marshall) L. D. Benson]. Acuña Cactus

OP: Supernough 2 Jan 1951 (lectotype, DES; isolectotype, ORPI).

Ferocactus cylindraceus (Engelmann) Orcutt [*F. acanthodes* (Lemaire) Britton & Rose. *F. acanthodes* var. *eastwoodiae* L. D. Benson. *F. acanthodes* var. *lecontei* (Engelmann) G. E. Lindsay]. Mountain Barrel Cactus, Desert Barrel Cactus; *biznaga*; *jiavul*

CP: Benson 10809. OP: RSF 88-456. TA: RSF 90-5.

Ferocactus emoryi (Engelmann) Orcutt [*F. covillei* Britton & Rose]. Emory's Barrel Cactus; *biznaga*; *jiavul*

CP: *Harbison 16849* (SD). OP: *Pinkava 14371* (ASU).

Ferocactus wislizeni (Engelmann) Britton & Rose. Compass Barrel Cactus, Fishhook Barrel Cactus; *biznaga*; *jiavul*

CP: *Harbison 16847* (SD). OP: *Benson 9895*.

Grusonia kunzei (Rose) Pinkava [*Opuntia kunzei* Rose. *O. stanlyi* Engelmann ex B. D. Jackson var. *kunzei* (Rose) L. D. Benson. *Corynopuntia kunzei* (Rose) M. P. Griffiths]. Desert Club-cholla, Devil Cholla

CP: *Hodgson 18704* (DES). OP: *Mearns 2735* (CAS). TA: *Harbison 16999 & 17000* (SD).

Grusonia parishii (Orcutt) Pinkava [*Opuntia parishii* Orcutt. *O. stanlyi* Engelmann ex B.D. Jackson var. *parishii* (Orcutt) L.D. Benson. *O. stanlyi* var. *peeblesiana* L.D. Benson. *Corynopuntia parishii* (Orcutt) F.M. Knuth]. Parish Club-cholla

OP: *RSF 88-110*.

Lophocereus schottii (Engelmann) Britton & Rose var. **schottii** [*Cereus schottii* Engelmann.

Pachycerus schottii (Engelmann) D. R. Hunt]. Senita; *sinita*; *ce:mĩ*

CP: *Harbison 17061* (SD). OP: *Blakley 323* (DES).

Mammillaria grahamii Engelmann subsp. **grahamii** [Among the many synonyms are: *M. microcarpa* Engelmann. *M. grahamii* var. *arizonica* Quehl. *M. grahamii* var. *oliviae* (Orcutt) L. D. Benson. *M. milleri* (Britton & Rose) Bödeker]. Arizona Fishhook Cactus; *cabeza de viejo*; *ban 'isvigi*, *ban cekida*

CP: E side Pinacate flow, 31 Jan 1992, *RSF*, observation. OP: *Benson 9945*. TA: *Reeves 5391* (ASU).

Mammillaria tetrancistra Engelmann. Corkseed Fishhook Cactus; *cabeza de viejo*

CP: *McManus 688*. OP: *Steenbergh 1-662-1* (ORPI). TA: *RSF 02-6*.

Mammillaria thornberi Orcutt [*M. fasciculata* of authors, not Engelmann]. Thornber Fishhook Cactus; *cabeza de viejo*; *ban mauppa*

OP: *Harbison 26183* (SD).

Opuntia basilaris Engelmann & J. M. Bigelow var. **basilaris**. Beavertail Cactus

CP: *RSF 92-621*. TA: Tinajas Altas Canyon, 28 Apr 2008, *RSF*, observation.

Opuntia chlorotica Engelmann & J. M. Bigelow. Pancake Prickly-pear; *nopal rastrero*

CP: *Harbison 16 Mar 1937* (SD). OP: *Nichol 28 Mar 1939* (ORPI).

Opuntia engelmannii Salm-Dyck ex Engelmann. Prickly-pear; *nopal*

Opuntia engelmannii var. **engelmannii** [*O. phaeacantha* Engelmann var. *discata* (Griffiths) L. D. Benson & Walkington]. Desert Prickly-pear; *naw*, *'i:bhai*

CP: Agua Dulce Pass, 12 Jun 1992, *RSF*, observation. OP: *RSF 90-430*.

Opuntia engelmannii var. **flavispina** (L. D. Benson) B. D. Parfitt & Pinkava [*O. phaeacantha* var. *flavispina* L. D. Benson]. Yellow-spine Prickly-pear; *nopal*

CP: *RSF 92-737*. OP: *Nichol 27 Apr 1939* (isotypes: ARIZ, ORPI).

****Opuntia engelmannii** var. **linguiformis** (Griffiths) B. D. Parfitt & Pinkava [*O. linguiformis* Griffiths]. Cow-tongue Prickly-pear

OP: 1 mi E of Lukeville, 3 Nov 2003, *SR*, observation.

Opuntia phaeacantha Engelmann. Brown-spine Prickly-pear; *nopal*

OP: *SR 2003-535* (ARIZ, ORPI).

****Opuntia santa-rita** (Griffiths & Hare) Rose. Purple Prickly-pear

OP: *Nichol 27 Apr 1939* (ORPI, extirpated).

Peniocereus greggii (Engelmann) Britton & Rose var. **transmontanus** (Engelmann) Backeberg [*Cereus greggii* Engelmann var. *transmontanus* Engelmann]. Desert Night-blooming Cereus; *reina de la noche*, *sarramatraca*; *ho'ok wa'o*

CP: *Rebman 2890* (ASU). OP: *RSF 90-574*. TA: *Mearns 2811* (CAS/DS, US).

Peniocereus striatus (Brandegee) Buxbaum [*Cereus striatus* Brandegee. *Neoevansia striata* (Brandegee) Sánchez-Mejorada. *Wilcoxia striata* (Brandegee) Britton & Rose. *Cereus diguetii* F. A. C. Weber. *Wilcoxia diguetii* (F. A. C. Weber) Diguet & Guillaumin]. *Sacamatraca*, *sarramatraca*; *'i:kulĩ*

OP: *Nichol 20 Apr 1939*.

Stenocereus thurberi (Engelmann) Buxbaum [*Cereus thurberi* Engelmann. *Lemaireocereus thurberi* (Engelmann) Britton & Rose]. Organ Pipe; *pitaya*, *pitaya dulce*; cucuvis

CP: Agua Dulce Mts, photo, 2 June 1963 (Simmons 1965). OP: *Hodgson 14* (ASU).

CAMPANULACEAE – BELLFLOWER FAMILY

Nemacladus orientalis (McVaugh) Morin [*N. glanduliferus* Jepson var. *orientalis* McVaugh]. Redtip Thread Plant

CP: RSF 93-329. OP: *Benson 10663*. TA: RSF 05-147.

Triodanis biflora (Ruiz & Pavón) Greene. Small Venus Looking-glass

OP: *Bowers 1285*.

CANNABACEAE – HEMP FAMILY (includes Ulmaceae, in part)

Celtis pallida Torrey subsp. **pallida** [*C. tala* Gillies ex Planchon var. *pallida* (Torrey) Planchon].

Desert Hackberry; *garambullo*; kuavuli

CP: RSF 94-25. OP: *Nichol 23 Feb 1939*.

Celtis reticulata Torrey. Netleaf Hackberry; *cúmero*

OP: *Goodding 303-41*.

CAPPARACEAE – CAPER FAMILY

Atamisquea emarginata Miers ex Hooker & Arnott [*Capparis atamisquea* Kuntze]. Palo hediondo

OP: *Harbison 26181*.

CAPRIFOLIACEAE, see ADOXACEAE

CARYOPHYLLACEAE – PINK FAMILY

Achyronychia cooperi Torrey & A. Gray. Sand-mat, Frost-mat

CP: *Eiber 23*. OP: *Parker 7984*. TA: TRV 26 Mar 1983.

Cerastium texanum Britton. Mouse-ear Chickweed

OP: RSF 05-270.

Drymaria viscosa S. Watson. Sticky Drymary

CP: *Hodgson 2080* (DES).

****Herniaria hirsuta** Linnaeus var. **cinerea** (de Candolle) Loret & Barrandon. Burstwort

OP: RSF 03-245.

Loeflingia squarrosa Nuttall [*L. squarrosa* subsp. *cactorum* Barneby & Twisselmann]. Spreading Pygmy-leaf

CP: SR 2003-375. OP: RSF 03-184. TA: RSF 92-608.

Silene antirrhina Linnaeus. Sleepy Catchfly

CP: RSF 93-363. OP: SR 2003-445 (ORPI).

CLEOMACEAE – CLEOME FAMILY

Polanisia dodecandra (Linnaeus) de Candolle subsp. **trachysperma** (Torrey & A. Gray) H. H. Iltis [*P. trachysperma* Torrey & A. Gray]. Western Clammyweed

OP: SR 23 Nov 1994 (ORPI).

Wislizenia refracta Engelmann subsp. **refracta**. Jackass-clover

CP: Corner Well (Simmons 1966). OP: *Peebles 14558*.

CONVOLVULACEAE – MORNING GLORY FAMILY

Cuscuta, see Costea (2007) and Costea and Stefanović (2010).

Cuscuta californica Hooker & Arnott var. **californica**. Chaparral Dodder, California Dodder; *fideo*; vepegĩ vasai

OP: *McDougall 97*.

Cuscuta legitima Costea & Stefanović [*C. umbellata* var. *reflexa* (J. M. Coulter) Yuncker]

CP: RSF 92-740.

Cuscuta salina Engelmann. Salt Dodder; *fideo*; vepegĩ vasai

OP: RSF 89-241.

Cuscuta tuberculata Brandegee. Desert Dodder; *fideo*; *vepegĩ vasai*

OP: *RSF 10532*.

Cuscuta umbellata Kunth var. **umbellata**. Dodder; *fideo*; *vepegĩ vasai*

CP: *RSF 92-687-B*. OP: *RSF 88-414*.

Evolvulus alsinoides (Linnaeus) Linnaeus [*E. alsinoides* var. *acapulcensis* (Willdenow) van Ooststroom. *E. alsinoides* var. *angustifolia* Torrey]. Mouse Ears; *oreja de ratón*

OP: *Nichol 26 Mar 1938*.

Ipomoea costellata Torrey. Crest-rib Morning-glory

OP: *SR 20031026-17 (ORPI)*.

Ipomoea cristulata Hallier f. [*I. coccinea* of authors, not Linnaeus. *Quamoclit gracilis* Hallier f.]. Scarlet Morning-glory

OP: *Wirt 13 Oct 1990*.

Ipomoea hederacea Jacquin. Ivy-leaf Morning-glory

CP: *RSF 92-746*. OP: *Wilson 189*.

Jacquemontia pringlei A. Gray

OP: *Goodding 227*.

CRASSULACEAE – STONECROP FAMILY

Crassula connata (Ruiz & Pavón) A. Berger [*C. connata* var. *eremica* (Jepson) M. Bywater & Wickens. *Tillaea erecta* Hooker & Arnott]. Pygmy Stonecrop

CP: *RSF 93-162*. OP: *RSF 03-356*. TA: *RSF 05-26*.

Dudleya arizonica Rose [*D. pulverulenta* (Nuttall) Britton & Rose subsp. *arizonica* (Rose) Moran. *Echeveria arizonica* (Rose) Kearney & Peebles]. Arizona Liveforever

CP: *Simmons 27 Oct 1962*. OP: *Bowers 1268 (ORPI)*. TA: *Kurtz 1170*.

Graptopetalum rusbyi (Greene) Rose

OP: *Darrow 3863*.

CROSSOSOMATACEAE – CROSSOSOMA FAMILY

Crossosoma bigelovii S. Watson. Ragged Rock-flower

CP: *RSF 93-86*. OP: *Parker 7961*. TA: *Webster 24254*.

CUCURBITACEAE – GOURD FAMILY

Brandegee bigelovii (S. Watson) Cogniaux. Desert Star-vine

CP: *Nichol 13 Nov 1937*. OP: *Benson 9932*. TA: *Goodding 2092*.

Cucurbita digitata A. Gray. Finger-leaf Gourd, Coyote Gourd; *calabacilla*, *chichi coyota*; 'adavĩ, 'ad

CP: *RSF 92-671*. OP: *Simmons 1 Oct 1963*. TA: *Goodding 2090*.

Cucurbita palmata S. Watson. Desert Coyote Gourd

TA: *RSF 01-584*.

Echinopepon wrightii (A. Gray) S. Watson. Wild Balsam-apple

OP: *Wirt 13 Oct 1990*.

Marah gilensis (Greene) Greene. Big Root

OP: *Harbison 26258*.

Tumamoca macdougalii Rose. Tumamoc Globe-berry

OP: *Baker 7638 (ASU)*.

EUPHORBIACEAE – SPURGE FAMILY

Acalypha californica Benth [A. *pringlei* S. Watson]. California Copperleaf; *hierba del cáncer*

CP: *RSF 92-649 & Turner*. OP: *Van Devender 84-450*. TA: *Goodding 5 Dec 1935*.

Chamaesyce, see **Euphorbia**

Croton sonora Torrey. Sonora Croton; *rama blanca*

CP: *RSF 92-566*. OP: *Bowers 944*.

Croton wigginsii L. C. Wheeler. Dune Croton

CP: *RSF 93-386*.

Ditaxis adenophora (A. Gray) Pax & K. Hoffmann [*Argythamnia adenophora* A. Gray]. Glandular Silverbush

OP: *Van Devender 85-107*.

Ditaxis brandegeei (Millsaugh) Rose & Standley var. **intonsa** I.M. Johnston [*Argythamnia brandegeei* Millspaugh var. *intonsa* (I. M. Johnston) J. W. Ingram]. Sonoran Silverbush

CP: Goodding 4358.

Ditaxis lanceolata (Benth) Pax & K. Hoffmann [*Argythamnia lanceolata* (Benth) Müller Argoviensis]. Narrowleaf Silverbush

CP: Whipple 3935. OP: RSF 88-458. TA: RSF 04-72.

Ditaxis neomexicana (Müller Argoviensis) A. Heller [*Argythamnia neomexicana* Müller Argoviensis]. New Mexico Silverbush

CP: RSF 92-661. OP: RSF 86-291. TA: RSF 04-10.

Ditaxis serrata (Torrey) A. Heller var. **serrata**. [*Argythamnia serrata* (Torrey) Müller Argoviensis]. Sand Silverbush. See Steinmann and Felger (1997).

CP: RSF 92-783. TA: Frontera Canyon, 18 Mar 1998, RSF, observation.

Euphorbia. For placement of *Chamaesyce* in *Euphorbia*, see Steinmann and Porter (2002).

Euphorbia abramsiana L. C. Wheeler [*Chamaesyce abramsiana* (L. C. Wheeler) Koutnik]. Desert Sandmat, Abrams' Spurge; *golondrina*

CP: RSF 01-577. OP: RSF 86-277. TA: RSF 04-44.

Euphorbia albomarginata Torrey & A. Gray [*Chamaesyce albomarginata* (Torrey & A. Gray) Small]. Rattlesnake Weed; *golondrina*

CP: RSF 92-562. OP: Bowers 893.

Euphorbia arizonica Engelm [*Chamaesyce arizonica* (Engelmann) Arthur]. Arizona Spurge; *golondrina*

OP: McLaughlin 1934.

Euphorbia capitellata Engelm [*Chamaesyce capitellata* (Engelmann) Millspaugh]

OP: McDougal 14 Apr 1941.

Euphorbia eriantha Benth. Beetle Spurge

CP: RSF 93-424. OP: Benson 9928. TA: RSF 04-12.

Euphorbia florida Engelm [*Chamaesyce florida* (Engelmann) Millspaugh]

CP: RSF 92-660 (CAB). OP: Baker 7884 (ASU).

Euphorbia heterophylla Linnaeus

OP: SR 20031026-40.

Euphorbia hyssopifolia Linnaeus [*Chamaesyce hyssopifolia* (Linnaeus) Small]. Hyssop Spurge

CP: Harlan 309. OP: Wirt 27 Jul 1990.

Euphorbia melanadenia Torrey [*Chamaesyce melanadenia* (Torrey) Millspaugh]. *Golondrina*

OP: Bezy 25 Oct 1964.

Euphorbia micromera Boissier ex Engelm [*Chamaesyce micromera* (Boissier ex Engelm) Wootton & Standley]. *Golondrina*

CP: Harlan 300. OP: RSF 86-294.

Euphorbia pediculifera Engelm var. **pediculifera** [*Chamaesyce pediculifera* (Engelmann) Rose & Standley var. *pediculifera*]. Louse Spurge; *golondrina*

CP: McLaughlin 1959. OP: Mearns 2746 (US).

Euphorbia platysperma Engelm ex S. Watson [*Chamaesyce platysperma* (Engelmann ex S. Watson) Shinnery]. Dune Spurge. Flat-seed Spurge

TA: Douglas 876 (ASU).

Euphorbia polycarpa Benth [*Chamaesyce polycarpa* (Benth) Millspaugh. *E. polycarpa* var. *hirtella* Boissier]. Desert Spurge; *golondrina*; *vi'ibam*

CP: Shreve 6214. OP: Parker 7934. TA: RSF 04-13.

***Euphorbia prostrata** Aiton [*Chamaesyce prostrata* (Aiton) Small]

OP: Wirt 20 Jul 1990 (ORPI).

Euphorbia setiloba Engelm ex Torrey [*Chamaesyce setiloba* (Engelmann ex Torrey) Millspaugh ex Parish]. Fringed Spurge; *golondrina*

Tropicos and others recognize *Chamaesyce setiloba* Norton, Contributions from the United States National Herbarium 25: 345 (1925). However, Kelly Allred (personal communication 23 December 2011) provided the following opinion: Parish (1925, Cat. Pl. Salton Sink 6, 1913, reprint of Carnegie Institution Washington Publication 193, 1914) reported, "*Chamaesyce setiloba* Millsp. ined. *Euphorbia setiloba* Engelm. In sandy or loose soil in which it is often partly buried. Mounds at

the old beach line east of Holtville (8087). Sand wash in the desert southwest of Brawley (8301).” The confusing part of this is the “ined.” after Millspaugh, leading one to believe that Parish did not intend to effect the combination. It would seem to mean, rather, that the combination had not hitherto been published (Millspaugh proposed it, but it was ined.) and that Parish was deliberately bringing together the genus and the basionym as suggested by Millspaugh. Hence Millspaugh ex Parish is the correct citation, being sufficient to make the combination effectively published.

CP: RSF 92-535. **OP:** Lehto L18317 (ASU). **TA:** RSF 04-14.

Euphorbia spathulata Lamarck. Warty Spurge

CP: RSF 01-569.

Euphorbia trachysperma Engelm. [Chamaesyce trachysperma (Engelmann) Millspaugh]

CP: RSF 01-568.

Jatropha cardiophylla (Torrey) Müller Argoviensis. Limberbush; *sangrengado*

OP: Bowers 1393.

Jatropha cinerea (Ortega) Müller Argoviensis. Ashy Limberbush; *sangrengado*; komagī va:s

OP: Bowers 1392.

Jatropha cuneata Wiggins & Rollins. Desert Limberbush; *sangrengado*; va:s

CP: Peebles 10862. **OP:** Parker 7965. **TA:** Harrison 6567.

Sebastiania bilocularis S. Watson [*Sapium biloculare* (S. Watson) Pax]. Arizona Jumping Bean; *hierba de la flecha*; 'ina hita

CP: RSF 94-31. **OP:** Mearns 2753 (US).

Stillingia linearifolia S. Watson

CP: SR 18 Feb 2002. **OP:** Baker 8787A (ORPI).

Tragia nepetifolia Cavanilles. Noseburn; *ortiga*

OP: Van Devender 84-453.

FABACEAE (LEGUMINOSAE) – LEGUME FAMILY

Acacia, see **Acaciella**, **Senegalia**, and **Vachellia**

Acaciella angustissima (Miller) Britton & Rose [*Acacia angustissima* (Miller) Kuntze]. White-ball *Acacia*

OP: Parker 7741.

Acmispon, see Brouillet (2008) and Jepson Flora Project (2012).

Acmispon brachycarpus (Benth.) D. D. Sokoloff [*Lotus humistratus* Greene]. Hill Locust

OP: McDougall 14.

Acmispon maritimus (Nuttall) D. D. Sokoloff var. **brevivexillus** (Ottley) Brouillet [*Lotus salsuginosus* Greene var. *brevivexillus* Ottley. *L. humilis* Greene]. Bird-foot Trefoil

CP: Peebles 10863. **OP:** Bowers 1105.

Acmispon rigidus (Benth.) Brouillet [*Lotus rigidus* (Benth.) Greene]. Desert Rock-pea

CP: Shreve 6228. **OP:** Van Devender 76-1. **TA:** Harrison 3610.

Acmispon strigosus (Nuttall) Brouillet [*Lotus strigosus* (Nuttall) Greene var. *tomentellus* (Greene) Isely. *L. tomentellus* Greene]. Hairy Lotus

CP: Shreve 5923. **OP:** Parker 7939. **TA:** TRV 9 Mar 1980.

Astragalus didymocarpus Hooker & Arnott var. **dispermus** (A. Gray) Jepson. Dwarf White Milkvetch

OP: RSF 03-260.

Astragalus insularis Kellogg var. **harwoodii** Munz & McBurney. Sand Locoweed

CP: Eiber 33.

Astragalus lentiginosus Douglas ex Hooker. Freckled Milkvetch

Astragalus lentiginosus var. **australis** Barneby

OP: Walden 19 Apr 1964 (ASU).

Astragalus lentiginosus var. **yuccanus** M. E. Jones

OP: Tinkham 18 Apr 1942.

Astragalus nuttallianus de Candolle var. **imperfectus** (Rydberg) Barneby. Small-flowered Milkvetch

CP: RSF 93-270. **OP:** Nichol 24 Feb 1939.

Calliandra eriophylla Benth. var. **erriophylla**. Fairy Duster; *huajillo*

CP: RSF 93-48. **OP:** Bowers 1048.

- Coursetia glandulosa** A. Gray [*C. microphylla* A. Gray]. *Sámota*
OP: *Parker 7919.*
- Dalea mollis** Benth. Silky Dalea
CP: *Goodding 1701.* **OP:** *Harbison 26218.* **TA:** *RSF 05-67.*
- Dalea pogonathera** A. Gray var. **pogonathera**. Bearded Prairie-clover
OP: *Parker 7922.*
- Dalea pringlei** A. Gray var. **pringlei**. Pringle's Prairie-clover
OP: *Nichol 16 May 1937.*
- Desmodium procumbens** (Miller) Hitchcock [*D. procumbens* var. *exiguum* (A. Gray) B. G. Schubert. *D. procumbens* var. *transversum* (B. L. Robinson & Greenman) B. G. Schubert. *D. wigginsii* B. G. Schubert]. Western Tickfoil
OP: *SR 20060916-2.*
- Galactia wrightii** A. Gray. Wright's Milkpea
OP: *Bowers 1543.*
- Hoffmannseggia glauca** (Ortega) Eifort [*Caesalpinia glauca* (Ortega) Kuntze]. Hog Potato; *camote de ratón*; 'i:kovi
CP: *RSF 01-556.*
- Lupinus arizonicus** (S. Watson) S. Watson [*L. arizonicus* subsp. *sonorensis* J. A. Christian & D. B. Dunn]. Arizona Lupine; *lupino*; tas ha:hag
CP: *Peebles 10891.* **OP:** *RSF 88-284.* **TA:** *TRV 25 Mar 1983.*
- Lupinus concinnus** J. Agardh. Elegant Lupine
CP: *RSF 93-349.* **OP:** *Bowers 1601.*
- Lupinus sparsiflorus** Benth. [*L. sparsiflorus* subsp. *mohavensis* Dziekanowski & D. B. Dunn. *L. sparsiflorus* var. *mohavensis* (Dziekanowski & D. B. Dunn) Welsh]. Coulter's Lupine
CP: *RSF 93-327.* **OP:** *Bowers 1096.*
- Marina parryi** (Torrey & A. Gray) Barneby [*Dalea parryi* Torrey & A. Gray]. Parry Dalea, Parry's False Prairie-clover
CP: *Elias 10219.* **OP:** *Bowers 986.*
- **Medicago polymorpha** Linnaeus [*M. hispida* Gaertner]. Burclover
OP: *RSF 88-142B (ORPI).*
- *Melilotus indicus** (Linnaeus) Allioni. Yellow Sourclover; *trébol agrio*
OP: *Bowers 1607.*
- Mimosa distachya** Cavanilles var. **laxiflora** (Benth.) Barneby [*M. laxiflora* Benth.]. Arizona Mimosa; *garabatillo*
OP: *Bowers 1517.*
- Nissolia schottii** (Torrey) A. Gray. Schott's Yellowhood
OP: *Bowers 939.*
- Olneya tesota** A. Gray. Ironwood; *palo fierro*; ho'idkam
CP: Little Tule Well, 12 Jun 1992, *RSF*, observation. **OP:** *Cooper 577.* **TA:** *RSF 08-171.*
- Parkinsonia**, see Felger et al. (2001), Haston et al. (2005), Hawkins (1996), and Hawkins et al. (1999).
- **Parkinsonia aculeata** Linnaeus. Mexican Palo Verde; *bagote*, *retama*, *guacapora*
OP: *SR 2003-524.*
- Parkinsonia florida** (Benth. ex A. Gray) S. Watson [*Cercidium floridum* Benth. ex A. Gray]. Blue Palo Verde; *palo verde*; ko'okomadk, kalisp
CP: *RSF 93-415.* **OP:** *Nichol 26 Apr 1939.* **TA:** *Van Devender 86-11.*
- Parkinsonia microphylla** Torrey [*Cercidium microphyllum* (Torrey) Rose & I. M. Johnston]. Foothill Palo Verde; *palo verde*; kek cehedagi
CP: Agua Dulce Mts, 12 Jun 1992, *RSF*, observations. **OP:** *RSF 90-404.* **TA:** *RSF 08-177.*
- Phaseolus acutifolius** A. Gray var. **acutifolius**. Tepary; *tépari del monte*; bavĩ
OP: *Wirt 13 Oct 1990.*
- Phaseolus filiformis** A. Gray [*P. wrightii* A. Gray]. Desert Bean; ban bavĩ, cepuliñ bavĩ
CP: *RSF 92-780.* **OP:** *Peebles 14554A.*
- Prosopis glandulosa** Torrey var. **torreyana** (L. D. Benson) M. C. Johnston [*P. juliflora* (Swartz) de Candolle var. *torreyana* L. D. Benson]. Western Honey Mesquite; *mezquite*; kui
CP: *Harlan 213 (CAB).* **TA:** *Harrison 6581.*

Prosopis pubescens Benth. Screw Bean; *tornillo*; kujel

OP: *RSF* 86-327.

Prosopis velutina Wooton [*P. juliflora* (Swartz) de Candolle var. *velutina* (Wooton) Sargent]. Velvet Mesquite; *mezquite*; kui

CP: *Lehto* 22487 (ASU). **OP:** *RSF* 87-270.

Psorothamnus emoryi (A. Gray) Rydberg var. **emoryi** [*Dalea emoryi* A. Gray]. Emory's Smokebush

CP: *RSF* 92-757.

Psorothamnus fremontii (Torrey ex A. Gray) Barneby [*Dalea fremontii* Torrey ex A. Gray]. Fremont's Dalea

TA: *Sundt* 2 Apr 2011.

Psorothamnus spinosus (A. Gray) Barneby [*Dalea spinosa* A. Gray]. Smoke Tree; *palo cenizo*

CP: *SR* 17 Feb 2002. **OP:** *Nichol* 3 Mar 1939.

Rhynchosia texana Torrey & A. Gray [*R. senna* Gillies ex Hooker var. *texana* (Torrey & A. Gray) M. C. Johnston. *R. senna* var. *angustifolia* (A. Gray) Grear]. Texas Snout-bean. See Turner (2011).

OP: *Baker* 7552 (ORPI).

Senegalia greggii (A. Gray) Britton & Rose [*Acacia greggii* A. Gray; *A. greggii* var. *arizonica* Isely]. Catclaw; *uña de gato*, *gatuño*; 'u:pad. See Seigler et al. (2006)

CP: *RSF* 92-537 (CAB). **OP:** *Cooper* 564. **TA:** *RSF* 04-21.

Senna covesii (A. Gray) H. S. Irwin & Barneby [*Cassia covesii* A. Gray]. Desert Senna; *hojasén*, *daisillo*; ko'ovĩ ta:tamĩ

CP: *RSF* 92-764. **OP:** *Bowers* 885.

Tephrosia vicioides Schlechtendal [*T. tenella* A. Gray]. Red Hoary-pea

OP: *SR* 5 Sep 1999.

Trifolium wormskoldii Lehmann [*T. wormskoldii* var. *arizonicum* (Greene) Barneby. *T. lacerum* Greene. *T. willdenovii* Sprengel]. Cow Clover

OP: *Bowers* 1205 (ORPI).

Vachellia constricta (Benth.) Seigler & Ebinger [*Acacia constricta* Bentham]. White-thorn Acacia; *mezquitillo*; gidag. See Seigler and Ebinger (2005).

CP: *RSF* 94-23. **OP:** *Bowers* 928.

Vicia ludoviciana Nuttall ex Torrey & A. Gray subsp. **ludoviciana** [*V. exigua* Nuttall]. Deerpea Vetch

OP: *Cooper* 578.

FAGACEAE – BEECH FAMILY

Quercus turbinella Greene [*Q. ajoensis* C. H. Muller. *Q. turbinella* subsp. *ajoensis* (C. H. Muller) Felger & C. H. Lowe]. Scrub Oak; *encinillo*

OP: *Muller* 9519 & *Tucker* (isotypes of *Q. ajoensis*, ARIZ, ORPI).

FOUQUIERIACEAE – OCOTILLO FAMILY

Fouquieria splendens Engelman subsp. **splendens**. Ocotillo; *ocotillo*; melhog

CP: Agua Dulce Mt, 12 Jun 1992, *RSF*, observations. **OP:** *RSF* 88-132. **TA:** *RSF* 04-15.

GENTIANACEAE – GENTIAN FAMILY

Eustoma exaltatum (Linnaeus) Salisbury ex G. Don subsp. **exaltatum**. Catchfly Gentian

OP: *Mearns* 7 Feb 1894 (US).

Zeltnera arizonica (A. Gray) G. Mansion [*Centaurium arizonicum* (A. Gray) A. Heller. *C. calycosum* (Buckley) Fernald var. *arizonicum* (A. Gray) Tidestrom]. Arizona Centaury

OP: *RSF* 86-212.

GERANIACEAE – GERANIUM FAMILY

***Erodium cicutarium** (Linnaeus) L'Héritier ex Aiton. Filaree, Heron's Bill, Redstem Stork's Bill; *alfilerillo*; hoho'ibad

CP: *Whipple* 3917. **OP:** *RSF* 88-279. **TA:** *RSF* 05-143.

Erodium texanum A. Gray. Texas Filaree, Desert Stork's Bill

CP: *RSF* 93-398. **OP:** *RSF* 03-335. **TA:** *RSF* 05-34.

Geranium carolinianum Linnaeus. Crane's Bill

OP: *Bowers 1711.*

GROSSULARIACEAE – GOOSEBERRY FAMILY

Ribes quercetorum Greene. Oak Gooseberry

OP: *SR 20061022-5.*

KRAMERIACEAE – RATANY FAMILY

Krameria bicolor S. Watson, 1886 [*K. grayi* Rose & Painter, 1906]. White Rhatany; *cósahui*

CP: *Johnson 26 Mar 1960.* OP: *Bowers 1386.* TA: *RSF 04-16.*

Krameria erecta Willdenow ex Schultes [*K. parvifolia* Benth]. Little-leaf Rhatany, Range Rhatany; *cósahui*

CP: *RSF 92-766.* OP: *Crooks 31 Mar 1937.* TA: *RSF 08-191.*

LAMIACEAE (LABIATAE) – MINT FAMILY

Hedeoma nana (Torrey) Briquet subsp. **macrocalyx** W. S. Stewart. False Pennyroyal; *orégano*

CP: *RSF 94-11.* OP: *Kearney 10852.*

Hyptis albida Kunth [*H. emoryi* Torrey]. Desert Lavender; *salvia*. See Felger et al. (2007) and Fishbein and Harlan (1998).

CP: *93-440.* OP: *McDougall 61.* TA: *Kurtz 1161.*

Monardella arizonica Epling. Arizona Monardella

OP: *Baker 7640 (ORPI).*

Salvia columbariae Benth. Desert Chia; *chía*; da:pk

CP: *Simmons (1966).* OP: *RSF 88-281.*

Salvia pinguifolia (Fernald) Wooton & Standley. Rock Sage

OP: *Darrow 3850.*

Salvia vaseyi (Porter) Parish [*Audibertia vaseyi* Porter]. Scallop-leaf Sage

CP: *Cain & Jansen 15 Nov 2003.*

Scutellaria mexicana (Torrey) A.J. Paton [*Salazaria mexicana* Torrey]. Bladder-Sage. See Patton (1990).

CP: *RSF 92-51.* OP: *Wilson 9 Apr 1993 (ORPI).* TA: *Gentry 3524.*

Teucrium cubense Jacquin subsp. **depressum** (Small) E. M. McClintock & Epling. Dwarf Germander

CP: *RSF 93-99.* OP: *Wirt 12 Apr 1989.*

Teucrium glandulosum Kellogg. Desert Germander

CP: *Simmons 26 Oct 1962.* OP: *SR Mar 31 2005.* TA: *RSF 02-14.*

LINACEAE – FLAX FAMILY

Linum lewisii Pursh [*L. perenne* L. var. *lewisii* (Pursh) Eaton & Wright]. Prairie Flax

OP: *McDougall 9 Apr 1941.*

LOASACEAE – STICKLEAF FAMILY

Eucnide rupestris (Baillon) H. J. Thompson & W. R. Ernst [*Sympetaleia rupestris* (Baillon) A. Gray ex S. Watson]. Rock-nettle, Velcro Plant

CP: *Monson 1.* OP: *Wirt 5 Dec 1990.*

Mentzelia affinis Greene. Triangle-seed Blazing Star; *pegapega*

CP: *McLaughlin 2976.* OP: *RSF 88-287.*

Mentzelia albicaulis (Douglas ex Hooker) Douglas ex Torrey & A. Gray (this species complex includes **M. desertorum** (Davidson) H. J. Thompson & J. E. Roberts). White-stem Blazing Star

CP: *McLaughlin 2986.* TA: *TRV 6 Mar 1983.*

Mentzelia involucrata S. Watson [*M. involucrata* var. *megalantha* I. M. Johnston]. Silver Blazing Star; *pegapega*

CP: *Kearney & Peebles 11012.* OP: *Parker 7970.*

Mentzelia isolata Gentry

OP: *Wirt 13 Aug 1990.*

Mentzelia longiloba J. Darlington var. **yavapaiensis** J. J. Schenk & L. Hufford. Blazing Star; *pegapega*. See Schenk and Hufford (2010).

CP: Yatskievych 79-242. **OP:** Harbison 26217. **TA:** Frontera Canyon, 18 Mar 1998, *RSF*, observation.

Mentzelia puberula J. Darlington. Argus Blazing Star

CP: Cain 15 Nov 2003. **TA:** Reichenbacher 480.

Petalonyx linearis Greene. Narrowleaf Sandpaper Plant

OP: Bowers 1259. **TA:** Goodding 5335.

Petalonyx thurberi A. Gray subsp. **thurberi**. Thurber Sandpaper Plant; hadsadkam

CP: Simmons 19 May 1963 (CAB). **OP:** Bowers 1723.

LYTHRACEAE – LOOSESTRIFE FAMILY (includes Punicaceae)

****Punica granatum** Linnaeus. Pomegranate; *granada*; galna:yu

OP: TRV 31 Aug 1978.

MALPIGHIACEAE – MALPIGHIA FAMILY

Cottisia gracilis (A. Gray) W. R. Anderson & C. Davis [*Janusia gracilis* A. Gray]. *Fermina*. See Anderson and Davis (2007).

CP: RSF 93-287. **OP:** RSF 88-125.

MALVACEAE – MALLOW FAMILY (includes Sterculiaceae)

Abutilon abutiloides (Jacquin) Garke ex Britton & P. Wilson. *Pintapán*

OP: Bowers 990.

Abutilon incanum (Link) Sweet [*A. pringlei* Hochreutiner]. Pelotazo

CP: RSF 92-728. **OP:** Parker 7906.

Abutilon malacum S. Watson. Yellow Indian Mallow

CP: RSF 93-8. **OP:** Wirt 11 Nov 1988.

Abutilon palmeri A. Gray. Palmer's Indian Mallow

CP: Lehto L23521 (ASU). **OP:** Benson 9923.

Anoda abutiloides A. Gray. Indian Anoda

OP: SR 8 Nov 1995 (ORPI).

Anoda pentaschista A. Gray. Field Anoda

OP: SR 24 Sep 2006.

Ayenia filiformis S. Watson [*A. pusilla* of various authors, not *A. pusilla* Linnaeus]. Dwarf Ayenia

CP: RSF 92-736. **OP:** Bowers 1020.

Ayenia microphylla A. Gray. Shrub Ayenia

OP: Fouts 441.

Eremalche exilis (A. Gray) Greene. White Mallow

CP: Reeves 6787 (ASU). **OP:** McDougall 70.

Herissantia crispa (Linnaeus) Brizicky. Bladder Mallow

CP: RSF 92-770. **OP:** Parker 7949.

Hermannia pauciflora S. Watson. Dwarf Burstwort

OP: Fallon 30 Mar 2011.

Hibiscus biseptus S. Watson. Arizona Rose-mallow

OP: Baker 7557 (ASU, mixed collection with *H. coulteri*).

Hibiscus coulteri Harvey ex A. Gray. Desert Rose-mallow

CP: RSF 93-286. **OP:** Harbison 26248.

Hibiscus denudatus Bentham var. **denudatus**. Rock Hibiscus

CP: Shreve 5924. **OP:** McDougall 59. **TA:** Reeves R5431 (ASU).

Horsfordia alata (S. Watson) A. Gray. Pink Velvet-mallow

CP: Shreve 5932. **OP:** Bowers 1526. **TA:** Kurtz 1158.

Horsfordia newberryi (S. Watson) A. Gray. Orange Velvet-mallow

CP: RSF 92-571. **OP:** Darrow 2411. **TA:** Borrego Canyon, 16 Jun 1992, *RSF*, observation.

***Malva parviflora** Linnaeus. Cheeseweed; *malva*, *quesitos*; tas ha:hag, ha:hag cu'igkam

OP: Bowers 1563.

- Malvastrum bicuspidatum** (S. Watson) Rose subsp. **bicuspidatum**. Shrubby False Mallow
OP: *RSF 90-553*.
- Malvella leprosa** (Ortega) Krapovickas [*Sida leprosa* (Ortega) K. Schumann]. Alkali Mallow
CP: *RSF 01-563*.
- Malvella sagittifolia** (A. Gray) Fryxell [*Sida lepidota* A. Gray var. *sagittifolia* A. Gray]. Arrow-leaf Alkali Mallow
CP: *Simmons 4 Oct 1964*.
- Rhynchosida physocalyx** (A. Gray) Fryxell [*Sida physocalyx* A. Gray]
OP: *Warren 10 Nov 1983*.
- Sida abutifolia** Miller [*Sida filicaulis* Torrey & A. Gray. *S. procumbens* Swartz]
OP: *RSF 03-423*.
- Sphaeralcea ambigua** A. Gray subsp. **ambigua**. Desert Globemallow; *mal de ojo*
CP: *Shreve 6223*. **OP:** *Bowers 1145*. **TA:** *RSF 04-78*.
- Sphaeralcea coulteri** (S. Watson) A. Gray [*S. orcuttii* Rose]. Annual Globemallow; *mal de ojo*; *hadam tat*, *ñiatum*. See Felger (2000) and Felger et al (2007b).
CP: *Kearney 10900*. **OP:** *Parker 7943*. **TA:** *RSF 05-141*.
- Sphaeralcea emoryi** Torrey ex A. Gray. Emory Globemallow; *mal de ojo*
CP: *RSF 92-15*. **OP:** *Benson 9921*. **TA:** *RSF 10-167*.
- Sphaeralcea laxa** Wooton & Standley. Caliche Globemallow
OP: *Goodding 297-41*.

MARTYNIACEAE – DEVIL’S CLAW FAMILY

- Proboscidea altheifolia** (Benth) Decaisne. Desert Devil’s Claw, Desert Unicorn-plant; *cuernitos*, *uña de gato*; *ban 'ihugga*
CP: *RSF 92-767*. **OP:** *Gould 3217*. **TA:** *RSF 04-18*.
- Proboscidea parviflora** (Wooton) Wooton & Standley subsp. **parviflora**. Devil’s Claw; *cuernitos*, *uña de gato*; *'ihug*
OP: *Wirt 13 Aug 1990*.

MOLLUGINACEAE — CARPET-WEED FAMILY

- ***Glinus lotoides** Linnaeus
CP: *RSF 92-565*.
- ***Mollugo cerviana** (Linnaeus) Seringe. Thread-stem Carpet-weed, Indian Chickweed
CP: *RSF 92-715*. **OP:** *RSF 88-419*. **TA:** *RSF 04-50*.

MONTIACEAE — MINER’S LETTUCE FAMILY

- Calandrinia ciliata** (Ruiz & Pavón) de Candolle [*C. ciliata* var. *menziesii* (Hooker) J. F. Macbride]. Fringed Redmaids
OP: *RSF 03-264*.
- Cistanthe monandra** (Nuttall) Hershkovitz [*Calyptridium monandrum* Nuttall]. Sand-cress
OP: *Nichol 14 Mar 1939*.
- Claytonia perfoliata** Donn ex Willdenow subsp. **mexicana** (Rydberg) John M. Miller & K. L. Chambers [*Montia perfoliata* (Donn ex Willdenow) Howell. *M. mexicana* (Rydberg) Standley & Steyermark]. Miner’s Lettuce
OP: *Nichol 14 Mar 1939*.
- Phemeranthus aurantiacus** (Engelmann) Kiger [*Talinum aurantiacum* Engelmann]. Orange Flame-flower
OP: *Bowers 1798*.

MORACEAE – MULBERRY FAMILY

- ****Ficus carica** Linnaeus. Fig; *higuera*; *su:na*
OP: *RSF 88-452* (extirpated).
- Morus microphylla** Buckley. Littleleaf Mulberry; *mora cimarrona*; *gohi*
OP: *Bowers 1291*.

NYCTAGINACEAE – FOUR-O’CLOCK FAMILY

Abronia villosa S. Watson var. **villosa**. Sand-verbena; *verbana de la arena*

CP: Benson 10783. TA: TRV 27 Mar 1983.

Acleisanthes longiflora A. Gray. Angel Trumpets

CP: RSF 92-564.

Allionia incarnata Linnaeus [*A. incarnata* var. *nudata* (Standley) Munz. *A. incarnata* var. *villosa* (Standley) Munz]. Windmills, Trailing Four-o’clock

CP: RSF 92-678. OP: Nichol 14 Mar 1939. TA: RSF 04-23.

***Boerhavia coccinea** Miller [*B. caribaea* Jacquin]. Scarlet Spiderling

CP: RSF 92-637. OP: TRV 85-114. TA: RSF 92-609.

Boerhavia coulteri (Hooker f.) S. Watson var. **palmeri** (S. Watson) Spellenberg [*B. spicata* Choisy var. *palmeri* S. Watson]. Spiderling; *juantilipín*

CP: RSF 92-676. OP: Wirt 25 Jul 1990. TA: RSF 04-29.

Boerhavia erecta Linnaeus. Spiderling; *juantilipín*; makkumí ha-jeved

CP: RSF 92-692. OP: Gould 3214. TA: RSF 04-28.

Boerhavia megaptera Standley. Large-winged Spiderling

OP: Bowers 954.

Boerhavia pterocarpa S. Watson. Wing-fruit Spiderling

OP: Bowers 1533 (ORPI).

Boerhavia triquetra S. Watson [*B. intermedia* M. E. Jones. *B. triquetra* var. *intermedia* (M. E. Jones) Spellenberg. *B. maculata* Standley]. Spiderling; *juanamipili*, *juantilipín*. See Spellenberg (2007).

CP: RSF 01-572. OP: Warren 11 Aug 1975.

Boerhavia wrightii A. Gray. Large-bract Spiderling; *juantilipín*

CP: RSF 92-677. OP: Bowers 1530. TA: RSF 04-08.

Commicarpus scandens (Linnaeus) Standley. Climbing Wart-club

CP: E margin of Cabeza Prieta, 23 Feb 2003, SR, observation. OP: RSF 91-136.

Mirabilis laevis (Bentham) Curran var. **villosa** (Kellogg) Spellenberg [*M. bigelovii* A. Gray]. Desert Four O’clock

CP: Shreve 5931. OP: Benson 10678. TA: Goodding 1517.

Mirabilis multiflora (Torrey) A. Gray var. **multiflora**. Colorado Four O’clock

OP: SR 20031026-43.

Mirabilis tenuiloba S. Watson. Long-lobed Four O’clock

TA: RSF 92-613.

OLEACEAE – OLIVE FAMILY

Forestiera phillyreoides (Bentham) Torrey [*F. shrevei* Standley]. Desert Olive

OP: Shreve 6201 (isotype of *F. shrevei*).

Fraxinus velutina Torrey. Velvet Ash; *fresno*

OP: Benson 10686 (native? extirpated?).

Menodora scabra A. Gray [*M. scoparia* Engelman ex A. Gray]. Twinberry

CP: Harlan 392. OP: Darrow 2429.

ONAGRACEAE – EVENING-PRIMROSE FAMILY

For revisions in Onagraceae see Wagner et al. (2007).

Chylismia arenaria A. Nelson [*Camissonia arenaria* (A. Nelson) P. H. Raven]. Fortuna Suncup

CP: TRV 9 Mar 1980. TA: Harrison 3608.

Chylismia claviformis (Torrey & Frémont) A. Heller subsp. **peebleisii** (Munz) W. L. Wagner & Hoch [*Camissonia claviformis* (Torrey & Frémont) P. H. Raven subsp. *peebleisii* (Munz) P. H. Raven]. Browneyes

CP: Furlow 14 Mar 1979. OP: Bowers 1104. TA: TRV 5 Mar 1983.

Chylismia claviformis subsp. **rubescens** (P. H. Raven) W. L. Wagner & Hoch [*Camissonia claviformis* subsp. *rubescens* (P. H. Raven) P. H. Raven]. Browneyes

CP: Shreve 6211. OP: Bowers 1138.

Epilobium canum (Greene) P. H. Raven subsp. **latifolium** (Hooker) P. H. Raven [*Zauschneria californica* C. Presl subsp. *latifolia* (Hooker) D. D. Keck]. California Fuchsia, Hummingbird Trumpet

OP: *Nichol 14 Mar 1939.*

Eremothera boothii (Douglas) W. L. Wagner & Hoch subsp. **condensata** (Munz) W. L. Wagner & Hoch [*Camissonia boothii* (Douglas) P. H. Raven subsp. *condensata* (Munz) P. H. Raven]. Woody Bottle-washer

CP: *Niles 356. OP: Bowers 1097.*

Eremothera chamaenerioides (A. Gray) W. L. Wagner & Hoch [*Camissonia chamaenerioides* (A. Gray) P.H. Raven]. Willow-herb Evening-primrose

CP: *RSF 93-121. OP: Bowers 1106. TA: TRV 5 Mar 1983.*

Eulobus californicus Nuttall ex Torrey & A. Gray [*Camissonia californica* (Nuttall ex Torrey & A. Gray) P.H. Raven. *Oenothera leptocarpa* Greene]. California Suncup

CP: *RSF 93-417. OP: McDougall 45. TA: TRV 5 Mar 1983.*

Oenothera arizonica (Munz) W. L. Wagner [*O. deltoides* Torrey & Frémont var. *arizonica* Munz. *O. californica* (S. Watson) S. Watson subsp. *arizonica* (Munz) W.M. Klein. *O. avita* (W. M. Klein) W. M. Klein subsp. *arizonica* (Munz) W. M. Klein]. Arizona Evening-primrose

CP: *Shreve 6222. OP: Kearney 10856.*

Oenothera curtiflora W. L. Wagner & Hoch [*Gaura parviflora* Douglas ex Lehmann]. Lizard-tail, Velvet-leaf *Gaura*

CP: *Benson 10748. OP: RSF 86-174A.*

Oenothera deltoides Torrey & Frémont subsp. **deltoides**. Dune Evening-primrose, Devil's Lantern

CP: *RSF 92-37.*

Oenothera primiveris A. Gray. Yellow Desert Evening-primrose

CP: *Shreve 6222. OP: Nichol 24 Feb 1939. TA: RSF 04-54.*

OROBANCHACEAE – BROOMRAPE FAMILY

Castilleja exserta (A. Heller) T. I. Chuang & Heckard subsp. **exserta** [*Orthocarpus exsertus* A. Heller. *O. purpurascens* Benth]. Purple Owl's-clover

CP: *Cutler 17 Mar 1995 (CAB). OP: Benson 10656.*

Castilleja lanata A. Gray. Indian Paintbrush

OP: *Nichol 4 May 1939.*

Orobanche cooperi (A. Gray) A. Heller. Desert Broomrape; mo'otadk

CP: *SR 18 Feb 2002. OP: RSF 88-300. TA: TRV 6 Mar 1983.*

Orobanche fasciculata Nuttall. Yellow Broomrape

OP: *SR 2003-497 (ORPI).*

OXALIDACEAE – OXALIS FAMILY

Oxalis albicans Kunth. Wood sorrel

OP: *Darrow 3854.*

PAPAVERACEAE – POPPY FAMILY

Argemone gracilentia Greene. Prickly Poppy, Cowboy's Fried Eggs; *cardo*

CP: *RSF 92-11. OP: Cooper 611.*

***Argemone ochroleuca** Sweet subsp. **ochroleuca**. Mexican Prickly Poppy; *cardo*

OP: *Johnson 25 Apr 1992 (ASU).*

Eschscholzia californica Chamisso subsp. **mexicana** (Greene) C. Clark. Mexican Gold-poppy; *amapolita del campo*; ho:hi 'e'es

OP: *Niles 556.*

Eschscholzia minutiflora S. Watson. Little Gold-poppy

CP: *SR 2003-381. OP: RSF 88-290. TA: TRV 5 Mar 1983.*

PHRYMACEAE – MONKEY-FLOWER FAMILY

Mimulus guttatus Fischer ex de Candolle. Seep Monkey-flower

OP: *Bowers 1206.*

Mimulus rubellus A. Gray. Little Monkey-flower
OP: *Shreve 6202.*

PHYTOLACCACEAE – POKEWEED FAMILY

Rivina humilis Linnaeus. Rouge Plant, Pigeon Berry
OP: *Goodding 294-41.*

PLANTAGINACEAE – PLANTAIN FAMILY (includes Scrophulariaceae, in part)

Antirrhinum. Vargus et al. (2004) recognize *Neogaerrhinum* and *Sairocarpus*; also see Oyama and Baum (2004). We are retaining *Antirrhinum* for these genera following the Jepson Flora Project (2012).

Antirrhinum filipes A. Gray [*Asarina filipes* (A. Gray) Pennell. *Neogaerrhinum filipes* (A. Gray) Rothmaler]. Yellow Twining Snapdragon

CP: *SR 2003-27. OP:* *McDougall 84.*

Antirrhinum nuttallianum Benth. subsp. **subsessile** (A. Gray) D. M. Thompson [*Sairocarpus pusillus* (Brandege) D. A. Sutton]. Lesser Snapdragon

OP: *Thompson 264.*

Antirrhinum watsonii Vasey & Rose [*A. kingii* S. Watson var. *watsonii* (Vasey & Rose) Munz. *Sairocarpus watsonii* (Vasey & Rose) D. A. Sutton]. Watson's Snapdragon

OP: *Baker 7707 (ASU, ORPI).*

Keckiella antirrhinoides (Benth.) Straw subsp. **microphylla** (A. Gray) Straw [*Penstemon microphyllus* A. Gray]. Bush Penstemon

OP: *Bowers 1281.*

Maurandya antirrhiniflora Humboldt & Bonpland ex Willdenow [*Asarina antirrhiniflora* (Humboldt & Bonpland ex Willdenow) Pennell. *Maurandella antirrhiniflora* (Humboldt & Bonpland ex Willdenow) Rothmaler]. Blue Snapdragon-vine, Blue Twining Snapdragon

CP: *RSF 92-544. OP:* *Bowers 933.*

Nuttallanthus texanus (Scheele) D.A. Sutton [*Linaria texana* Scheele. *L. canadensis* (Linnaeus) Dumont de Courset var. *texana* (Scheele) Pennell]. Blue Toadflax, Texas Toadflax

OP: *TRV 10 Mar 1978.*

Penstemon parryi (A. Gray) A. Gray. Desert Penstemon; *jaritos*, *varita de San José*; hevel 'e'es

CP: Childs Mt, rare, Mar 2004, *Curtis McCasland*, observation. **OP:** *Gould 3006. TA:* Tinajas Altas, rare, 10 Jan 2002, *RSF*, observation.

Penstemon pseudospectabilis M. E. Jones subsp. **pseudospectabilis**. Mojave Beard-tongue

CP: *RSF 93-160. OP:* *Lockwood 161. TA:* *Hodgson 2723 (DES).*

Plantago ovata Forsskål var. **fastigiata** (E. Morris) S. C. Meyers & Liston [*P. insularis* Eastwood. Not *P. insularis* Nyman ex Briquet. *P. fastigiata* E. Morris. *P. insularis* var. *fastigiata* (E. Morris) Jepson]. Woolly Plantain, Indian Wheat; *pastora*; *mumsa*

CP: *RSF 93-320. OP:* *Parker 7908. TA:* *RSF 05-123.*

Plantago patagonica Jacquin [*P. purshii* Roemer & Schultes]. *Pastora*

CP: *RSF 92-560. OP:* *SR 2003-454.*

Pseudorontium cyathiferum (Benth.) Rothmaler [*Antirrhinum cyathiferum* Benth]. Desert Snapdragon. See Oyama and Baum (2004) and Vargus et al. (2004).

CP: *Benson 10792. OP:* *Baker 7715 (ASU). TA:* Frontera Canyon, 18 Mar 1998, *RSF*, observation.

Stemodia durantifolia (Linnaeus) Swartz. Purple Stemodia

CP: *Dakan 27 Feb 1972 (ORPI). Van Devender 87-5.*

Veronica peregrina Linnaeus subsp. **xalapensis** (Kunth) Pennell. Purslane Speedwell, Necklace-weed

CP: *RSF 92-563. OP:* *Gould 2987.*

PLUMBAGINACEAE – LEADWORT FAMILY

Plumbago zeylanica Linnaeus [*P. scandens* Linnaeus]. Doctor-bush; *estrenina*

OP: *Parker 7744.*

POLEMONIACEAE – PHLOX FAMILY

Aliciella latifolia (S. Watson) J. M. Porter subsp. **latifolia** [*Gilia latifolia* S. Watson]. Broad-leaf Gilia

CP: *Benson 10795*. TA: *Halse 31 Mar 1973*.

Eriastrum diffusum (A. Gray) H. Mason. Woolly-star

CP: *Kearney 10870*. OP: *RSF 88-293*. TA: *TRV 6 Mar 1983*.

Eriastrum eremicum (Jepson) H. Mason subsp. **yageri** (M. E. Jones) H. Mason. Desert Woolly-star

OP: *Tinkham Apr 1942*.

Gilia flavocincta A. Nelson subsp. **australis** (A. D. & V. E. Grant) A. G. Day & V. E. Grant [*G. ophthalmoides* Brand subsp. *australis* (A. Nelson) A. D. & V. E. Grant]. Lesser Yellowthroat Gilia

OP: *McDougall 44*.

Gilia stellata A. Heller. Star Gilia

CP: *Monson 20 Mar 1958*. OP: *Kearney 10811*. TA: *McLaughlin 1972*.

Ipomopsis multiflora (Nuttall) V.E. Grant [*Gilia multiflora* Nuttall]. Many-flowered Gilia

OP: *Baker 7641 (ASU)*.

Langloisia setosissima (Torrey & A. Gray) Greene subsp. **setosissima**. Bristly Langloisia

CP: *SR 2003-34*. OP: *Bowers 1119*. TA: *RSF 98-102*.

Leptosiphon aureus (Nuttall) J. M. Porter & L. A. Johnson subsp. **aureus** [*Linanthus aureus* (Nuttall) Greene var. *aureus*]. Golden Desert-trumpets

OP: *McDougall 39*.

Linanthus bigelovii (A. Gray) Greene. Bigelow's Desert-trumpet

CP: *RSF 92-39*.

Linanthus cf. **bigelovii** (large-flowered form with short simple leaves)

CP: *RSF 93-427*.

Linanthus cf. **bigelovii** × **L. jonesii** (possible hybrid)

CP: *Bowers 1228*. OP: *Whipple 3925*.

Linanthus demissus (A. Gray) Greene. Desert Snow

OP: *McDougall 68*.

Linanthus jonesii (A. Gray) Greene. Jones' Desert-trumpet

CP: *Benson 10762A (RSA)*. OP: *Gould 2994*. TA: *TR 26 Mar 1983*.

Linanthus cf. **jonesii** (large-flowered form, perhaps an unnamed taxon)

CP: *Mason 3601*.

Loeseliastrum schottii (Torrey) Timbrook [*Langloisia schottii* (Torrey) Greene]. Schott's Calico

TA: *TRV 27 Mar 1983*.

Phlox tenuifolia E.E. Nelson. Mountain Phlox

OP: *Bowers 932*.

POLYGALACEAE – MILKWORT FAMILY

Polygala macradenia A. Gray. Gland-leaf Milkwort

OP: *Darrow 3857*.

POLYGONACEAE – BUCKWHEAT FAMILY

Chorizanthe brevicornu Torrey subsp. **brevicornu**. Brittle Spineflower, Short-horn Spineflower

CP: *Niles 344*. OP: *Benson 10675*. TA: *TRV 5 Mar 1983*.

Chorizanthe corrugata (Torrey) Torrey & A. Gray. Wrinkled Spineflower

CP: *RSF 93-394*. OP: *SR 6 Apr 1998 (ORPI)*.

Chorizanthe rigida (Torrey) Torrey & A. Gray. Devil's Spineflower; *tapacola*

CP: *RSF 92-1*. OP: *Parker 7923*. TA: *RSF 05-33*.

Eriogonum abertianum Torrey. Abert's Wild Buckwheat

OP: *Kearney 10833*.

Eriogonum deflexum Torrey var. **deflexum** [*E. deflexum* var. *turbinatum* (Small) Reveal]. Skeleton Weed

CP: *SR 22 Mar 2003*. OP: *Parker 7979*.

Eriogonum fasciculatum Benthham var. **polifolium** (Benthham) Torrey & A. Gray. Flat-top Buckwheat

CP: *RSF 92-52*. OP: *Parker 8009*. TA: *Shreve 5942*.

- Eriogonum inflatum** Torrey & Frémont. Desert Trumpet, Bladder Stem
 CP: *RSF* 93-339. OP: *RSF* 88-460. TA: *Reeves* 5441 (ASU).
- Eriogonum maculatum** A. Heller. Spotted Wild Buckwheat
 OP: *Walden* 18 Apr 1964 (ASU).
- Eriogonum thomasi** Torrey. Thomas' Wild Buckwheat
 CP: *Shreve* 6213. OP: *Parker* 7968. TA: *TRV* 5 Mar 1983.
- Eriogonum thurberi** Torrey. Thurber's Wild Buckwheat
 CP: *RSF* 93-438. OP: *Lehto* 15443-f. TA: *RSF* 05-93.
- Eriogonum trichopes** Torrey. Little Desert Trumpet
 CP: *RSF* 92-776. OP: *Bowers* 1253. TA: *RSF* 05-28.
- Eriogonum wrightii** Torrey ex Benth. var. **nodosum** (Small) Reveal [*E. wrightii* var. *pringlei* (J. M. Coulter & Fisher) Reveal]. Bastard-sage
 CP: *McLaughlin* 1965. OP: *RSF* 90-562. TA: *Goodding* 1449.
- Nemacaulis denudata** Nuttall var. **gracilis** Goodman & L. D. Benson. Woolly Heads
 CP: *Eiber* 27. TA: *TRV* 27 Mar 1983.
- ***Polygonum argyrocoleon** Steudel ex Kunze. Silver-sheath Knotweed
 CP: *RSF* 92-562 (CAB). OP: *RSF* 05-161.
- Pterostegia drymarioides** Fischer & C. A. Meyer. Woodland Threadstem
 OP: *Kearney* 10815.
- Rumex hymenosepalus** Torrey. Sand Dock, Wild-rhubarb; *cañaigre*; wakondam
 OP: *McDougall* 82.

PORTULACACEAE – PURSLANE FAMILY (in part see **MONTIACEAE** and **TALINACEAE**)

- Portulaca halimoides** Linnaeus [*P. parvula* A. Gray]. Silk-cotton Purslane
 CP: *Harlan* 305. OP: *RSF* 87-281. TA: *RSF* 04-61.
- ***Portulaca oleracea** Linnaeus. Purslane; *verdolaga*; ku'ukpalk
 CP: *RSF* 01-554. OP: *RSF* 87-318.
- Portulaca suffrutescens** Engelm.
 OP: *SR* 20060924-5.
- Portulaca umbraticola** Kunth subsp. **lanceolata** (Engelm.) J. F. Matthews & Ketron [*P. lanceolata* Engelm.]. Winged Purslane
 OP: *Wilson* 193.

PRIMULACEAE – PRIMROSE FAMILY

- ****Anagallis arvensis** Linnaeus subsp. **arvensis**. Scarlet Pimpernel
 OP: *RSF* 88-138.
- Androsace occidentalis** Pursh [*A. occidentalis* var. *arizonicus* (A. Gray) H. St. John]. Western Rock-jasmine
 OP: *Kearney* 10851.

RANUNCULACEAE – RANUNCULUS FAMILY

- Anemone tuberosa** Rydberg. Desert Windflower
 OP: *RSF* 05-266.
- Clematis drummondii** Torrey & A. Gray. Texas Virgin-bower; *barba de chivato*
 CP: *RSF* 92-722. OP: *Harbison* 25672.
- Delphinium scaposum** Greene. Bare-stem Larkspur; *espulita cimarrona*
 CP: *RSF* 93-309. OP: *Parker* 7960.
- Myosurus cupulatus** S. Watson. Mousetail
 OP: *RSF* 05-199.
- Myosurus minimus** Linnaeus. Dwarf Mousetail
 OP: *Gould* 2986 (extirpated)

RESEDACEAE – MIGNONETTE FAMILY

- Oligomeris linifolia** (Vahl) J. F. Macbride. Desert Cambess
 CP: *Benson* 10776. OP: *Nichol* 28 Apr 1939. TA: *RSF* 04-53.

RHAMNACEAE – BUCKTHORN FAMILY

Condalia globosa I.M. Johnston var. **pubescens** I.M. Johnston. Crucillo; kawk kuavulĩ

CP: RSF 94-21. **OP:** Peebles 14329.

Frangula betulifolia (Greene) Grubov subsp. **betulifolia** [*Rhamnus betulifolia* Greene]. Birchleaf Buckthorn; *salicieso*

OP: Nichol, 23 Feb 1939.

Rhamnus crocea Nuttall. Holly-leaf Buckthorn, Holly-leaf Redberry. (We are unable to distinguish *R. crocea* in Organ Pipe from *R. ilicifolia* Kellogg; Wolf (1938) considered them to be conspecific, e.g., *R. crocea* subsp. *ilicifolia* (Kellogg) C. B. Wolf.)

OP: Parker 8001.

Ziziphus obtusifolia (Hooker ex Torrey & A. Gray) A. Gray var. **canescens** (A. Gray) M. C. Johnston [*Condalia lycioides* (A. Gray) Weberbauer var. *canescens* (A. Gray) Trelease]. White Crucillo, Graythorn; *abrojo*

CP: Harlan & Steinmann 283 (CAB). **OP:** RSF 89-233. **TA:** RSF 08-170.

ROSACEAE – ROSE FAMILY

Vauquelinia californica (Torrey) Sargent subsp. **sonorensis** W. J. Hess & Henrickson. Sonoran Rosewood

OP: Nichol 23 Feb 1939.

RUBIACEAE – MADDER FAMILY

Galium aparine Linnaeus. Stickywilly, Goose-grass Bedstraw

OP: Kearney & Peebles 10845.

Galium microphyllum A. Gray. Bract-leaf Bedstraw

OP: RSF 03-415.

Galium stellatum Kellogg [*G. stellatum* var. *eremicum* Hilend & J. T. Howell]. Starry Bedstraw

CP: Shreve 5937. **OP:** Bowers 1251. **TA:** Harrison & Kearney 6574.

RUTACEAE – RUE OR CITRUS FAMILY

Ptelea trifoliata Linnaeus. Hop Tree

OP: Harbison 13 Dec 1939 (SD).

Thamnosma montana Torrey & Frémont. Turpentine-broom

CP: Engard 914 (DES). **TA:** Harrison & Belden 3612.

SALICACEAE – WILLOW FAMILY

Populus fremontii S. Watson subsp. **fremontii**. Frémont Cottonwood; *álamo*; 'auppa

OP: Peebles 14563.

Salix gooddingii C. R. Ball. Goodding Willow; *sauce*, *sauz*; ce'ul

OP: Peebles 14562.

SANTALACEAE – SANDALWOOD FAMILY (includes Viscaceae)

Phoradendron californicum Nuttall. Desert Mistletoe; *toji*; ha:kvad

CP: RSF 92-9. **OP:** Mearns 2742 (US). **TA:** RSF 04-59.

SAPINDACEAE – SOAPBERRY FAMILY

Dodonaea viscosa Jacquin var. **angustifolia** (Linnaeus f.) Benth. Hop-bush; *tarachico*

OP: Lockwood 159.

Sapindus drummondii Hooker & Arnott [*S. saponaria* Linnaeus var. *drummondii* (Hooker & Arnott) L. D. Benson]. Soapberry; *jaboncillo*, *amolillo*

OP: Bowers 1340.

SAURURACEAE, see MAGNOLIIDS**SCROPHULARIACEAE, see OROBANCHACEAE, PHRYMACEAE, and PLANTAGINACEAE**

SIMAROUBACEAE – QUASSIA FAMILY

Castela emoryi (A. Gray) Moran & Felger [*Holacantha emoryi* A. Gray]. Crucifixion-thorn; *corona de cristo*

CP: RSF 92-545. OP: Gould 3012.

SIMMONDSIACEAE – JOJOBA FAMILY

Simmondsia chinensis (Link) C. K. Schneider. Jojoba, Goat-nut; *jojoba*; *hohovai*

OP: Tibbitts 6 Mar 2003.

SOLANACEAE – NIGHTSHADE or POTATO FAMILY

Capsicum annum Linnaeus var. **glabriusculum** (Dunal) Heiser & Pickersgill [*C. indicum* Dierbach var. *aviculare* Dierbach. *C. annum* var. *aviculare* (Dierbach) D'Arcy & Eshbaugh]. Chiltepin; *chiltepín*; a'al ko'okol

OP: Wilson 207.

Chamaesaracha coronopus (Dunal) A. Gray. False Nightshade

CP: Hardy [Hardies] 3 Dec 1935. TA: RSF 04-63.

Datura discolor Bernhardt. Desert Datura; *toloache*

CP: RSF 92-778. OP: Gould 3216. TA: RSF 04-64.

Lycium andersonii A. Gray var. **andersonii** [*L. andersonii* var. *deserticola* (C. L. Hitchcock) Jepson]. Desert Wolfberry; *salicieso*; s-toa kuavulī

CP: SR 2003-31. OP: RSF 90-47. TA: RSF 08-196.

Lycium berlandieri Dunal var. **longistylum** C. L. Hitchcock. *Bachata*, *salicieso*

CP: TRV 9 Mar 1980. OP: Bowers 908.

Lycium brevipes Benth. var. **brevipes** [*L. richii* A. Gray]. *Salicieso*

OP: SR 2003-107 (ORPI).

Lycium californicum Nuttall ex A. Gray var. **californicum** [*L. californicum* var. *arizonicum* A. Gray]. California Desert-thorn

CP: SR 20050115-8 (specimen not located). OP: RSF 90-42.

Lycium exsertum A. Gray. Arizona Desert-thorn; *salicieso*

OP: Bowers 1564.

Lycium fremontii A. Gray var. **fremontii**. Frémont Wolfberry; *salicieso*; kuavulī

CP: RSF 92-42. OP: Bowers 1011. TA: McLaughlin 1967.

Lycium macrodon A. Gray. S-cuk kuavulī

CP: RSF 93-168. OP: Mearns 2740 (CAS). TA: Harrison 6571.

Lycium parishii A. Gray. Parish Wolfberry; *salicieso*

CP: Darrow 14 Apr 1941. OP: Shreve 6208. TA: TRV 9 Mar 1980.

Nicotiana clevelandii A. Gray. Desert Tobacco; *tabaquillo del coyote*; *ban vivga*

CP: Benson 10810. OP: Bowers 1044 (ORPI). TA: Kearney 10913.

****Nicotiana glauca** Graham var. **glauca**. Tree Tobacco

OP: Hwy 85, near Visitor Center, 5 Sep 2005, SR, observation.

Nicotiana obtusifolia M. Martens & Galeotti [*N. trigonophylla* Dunal]. Coyote Tobacco, Desert Tobacco; *tobaco de coyote*; O'dham ha-vivga

CP: Cain 15 Nov 2003. OP: Mearns 2744 (CAS/DS). TA: Harrison 6568.

Petunia parviflora de Jussieu [*Calibrachoa parviflora* (de Jussieu) D'Arcy]. Small-flowered Petunia

OP: RSF 88-317.

Physalis acutifolia (Miers) Sandwith [*P. wrightii* A. Gray]. Sharpleaf Ground-cherry

CP: Reported from Las Playas (Simmons 1966) but no specimen located; it occurs in adjacent Sonora (Felger 2000). OP: Warren 17 Nov 1979.

Physalis lobata Torrey [*Quincula lobata* (Torrey) Rafinesque]. Hairy Ground-cherry

CP: RSF 93-101. OP: McDougall 62.

Physalis versicolor Rydberg [*P. crassifolia* Benth. var. *versicolor* (Rydberg) Waterfall]. Desert Ground-cherry; *tomatillo del desierto*

CP: Shreve 5930. OP: Parker 7731. TA: Goodding 4902.

***Solanum americanum** Miller [*S. nodiflorum* Jacquin]. Black Nightshade; *chichiquelite*; *cuví vupui*

OP: Bowers 1329.

Solanum douglasii Dunal. Douglas Nightshade

OP: *Supernaugh 443*.

Solanum hindsianum Benth. *Mala mujer, tomatillo espinoso*

OP: *Lechner 28 Jan 1986*.

Solanum xanti A. Gray. Purple Nightshade

OP: *Tinkham 1 Apr 1942*.

STERCULIACEAE, see **MALVACEAE**

TALINACEAE – TALINUM FAMILY

Talinum paniculatum (Jacquin) Gaertner. Pink Baby's-breath, Jewels of Opar

OP: *SR 20061022-14*.

TAMARICACEAE – TAMARISK FAMILY

***Tamarix aphylla** (Linnaeus) H. Karsten. Athel, Saltcedar; *pino salado*

CP: *RSF 02-15*. OP: *SR 20 Apr 2001* (ORPI).

***Tamarix chinensis** Loureiro [*T. ramosissima* Ledebour]. Saltcedar, Tamarisk; *pino salado*; 'onk 'u'us

CP: *Simmons 28 Oct 1962* (CAB). OP: *Bowers 1391*.

URTICACEAE – NETTLE FAMILY

Parietaria hespera B. D. Hinton var. **hespera**. Desert Pellitory

CP: *RSF 93-90*. OP: *RSF 88-298*. TA: *RSF 04-55*.

ULMACEAE, see **CANNABACEAE**

VERBENACEAE – VERBENA FAMILY

Aloysia wrightii (A. Gray) A. Heller ex Abrams. *Oreganillo*

CP: *RSF 93-39*. OP: *Nichol 16 May 1937*.

Glandularia bipinnatifida (Nuttall) Nuttall var. **bipinnatifida** [*Verbena ciliata* Benth. *V. bipinnatifida* var. *ciliata* (Benth.) B. L. Turner]

OP: *Tinkham 1 Apr 1942*.

Glandularia gooddingii (Briquet) Solbrig [*Verbena gooddingii* Briquet]. Desert Verbena

CP: *RSF 93-65*. OP: *Kearney 10842*.

****Lantana camara** Linnaeus. Lantana; *confiturilla negra*

OP: *SR 24 Mar 2003*.

Tetraclea coulteri A. Gray. Coulter's Wrinklefruit

CP: *RSF 92-741*. OP: *SR 24 Nov 1997* (ORPI).

Verbena bracteata Lagasca & Rodriguez. Big-bract Verbena

CP: *RSF 92-555*.

Verbena menthifolia Benth. Mint Vervain

Attributions of *V. halei* Small to Arizona, New Mexico, and northwestern Mexico are based on misidentifications of *V. menthifolia* (Nesom 2010).

CP: *RSF 92-556*. OP: *RSF 88-454*.

Verbena xylopoda (L. M. Perry) G. L. Nesom [*V. neomexicana* (A. Gray) Small var. *xylopoda* L. M. Perry]. Arizona Vervain. See Nesom (2010).

OP: *Kearney 10846*.

VISCACEAE – see **SANTALACEAE**

ZYGOPHYLLACEAE – CALTROP FAMILY

Fagonia, see Felger (2000).

Fagonia californica Benth. subsp. **californica** [*F. laevis* Standley. *F. californica* subsp. *laevis* (Standley) Wiggins]

CP: *RSF 92-53*. TA: *RSF 93-195*.

- Fagonia californica** subsp. **longipes** (Standley) Felger & C. H. Lowe [*F. longipes* Standley]
 CP: RSF 92-572. OP: McDougall 51.
- Fagonia pachyacantha** Rydberg [*F. californica* var. *glutinosa* Pringle ex Vail]
 CP: RSF 93-169. TA: Lindquist 25 Mar 1983.
- Kallstroemia californica** (S. Watson) Vail. *Baiburín, mal de ojo*
 CP: RSF 92-674. OP: Bowers 1529. TA: RSF 04-47.
- Kallstroemia grandiflora** Torrey ex A. Gray. Summer poppy; *baiburín, mal de ojo*
 CP: RSF 92-686. OP: Bowers 1528.
- Larrea tridentata** (de Candolle) Coville [*L. divaricata* Cavanilles subsp. *tridentata* (de Candolle) Felger & C. H. Lowe]. Creosotebush; *hediondilla, gobernadora*; segai, segoi
 CP: Yeatts 3657. OP: Nichol 26 Mar 1939. TA: RSF 04-17.
- ***Tribulus terrestris** Linnaeus. Puncture Vine, Caltrop, Goathead; *torito, toboso*
 CP: Simmons 7.

MONOCOTS--MONOCOYLEDONEAE

AGAVACEAE, see ASPARAGACEAE

ALLIACEAE, see AMARYLLIDACEAE

AMARYLLIDACEAE – AMARYLLIS FAMILY

- Allium macropetalum** Rydberg. Desert Onion; *cebollín*
 CP: RSF 93-117. OP: Phillips 83-87 (ASU, ORPI).
- Zephyranthes longifolia** Hemsley. Plains Rain-lily
 OP: Bowers 1802.

ARECACEAE – PALM FAMILY

- ****Washingtonia filifera** (Linden ex André) H. Wendland ex de Bary. California Fan Palm
 OP: RSF 88-258 (ORPI, removed).

ASPARAGACEAE – ASPARAGUS FAMILY (includes Agavaceae, Nolinaceae or Ruscaceae, and Themidaceae)

- Agave** × **ajoenesis** W. C. Hodgson. Ajo Mountain Agave
 OP: Hodgson 4478 (holotype, DES).
- Agave deserti** Engelm. subsp. **simplex** Gentry. Desert Agave; *lechuguilla, mezcal*; 'a'ud
 CP: Gentry 20590. OP: Hodgson 5766 (ASU, ORPI). TA: RSF 90-19.
- Agave schottii** Engelm. var. **schottii**. Shin-dagger; *amolillo*; utko je:j
 OP: Baker 7758 (ASU).
- Dichelostemma capitatum** (Bentham) Alfred Wood subsp. **pauciflorum** (Torrey) Keator [*D. pulchellum* (Salisbury) A. Heller var. *pauciflorum* (Torrey) Hoover. *Brodiaea capitata* Bentham var. *pauciflora* Torrey]. Blue Dicks, Wild Hyacinth; *coberia, cobena, ajo blanco*; ha:d
 CP: Crawford 3 (ASC). OP: RSF 05-254.
- Hesperocallis undulata** A. Gray. Ajo Lily, Desert Lily; *ajo silvestre*; a:sos
 CP: Reeves 6783 (RSA). OP: McDougall 37. TA: RSF 05-119.
- Nolina bigelovii** (Torrey) S. Watson. Desert Tree-beargrass
 CP: RSF 92-601. TA: Shreve 6233.
- Nolina microcarpa** S. Watson. Beargrass; *sacahuiste*; moho
 OP: Bowers 1296 (ORPI).
- Triteleiopsis palmeri** (S. Watson) Hoover [*Brodiaea palmeri* S. Watson]. Blue Sand-lily
 CP: RSF 93-384. TA: TRV 27 Mar 1983.
- Yucca baccata** Torrey var. **brevifolia** L. D. Benson [*Y. arizonica* McKelvey]. Banana Yucca; *dátil*; howij
 OP: RSF 05-278.

COMMELINACEAE – SPIDERWORT FAMILY**Commelina erecta** Linnaeus. White-mouth Dayflower**OP:** *Wilson 191.***CYPERACEAE – SEDGE FAMILY****Cyperus esculentus** Linnaeus var. **leptostachyus** Boeckeler. Yellow Nutgrass; *coquillo amarillo*, *cebollín*; vasai su:vĩ**CP:** *RSF 01-575.***Cyperus laevigatus** Linnaeus. Flat Sedge**OP:** *McDougall 34.***Cyperus mutisii** (Kunth) Andersson [*Mariscus mutisii* Kunth. *C. asper* (Liebmann) O'Neill]**OP:** *Goodding 306-41.***Cyperus squarrosus** Linnaeus [*C. aristatus* Rottbøll. *Mariscus squarrosus* (Linnaeus) C. B. Clarke]. Dwarf Sedge**CP:** *Monson 9.* **OP:** *Clark 10990 (ORPI).* **TA:** *RSF 04-41.***Eleocharis coloradoensis** (Britton) Gilly. Dwarf Spikerush**OP:** *Peebles 14565.***Eleocharis flavescens** (Poiret) Urban var. **flavescens**. Yellow Spikerush**OP:** *Darrow 2403.***Eleocharis rostellata** (Torrey) Torrey. Traveling Spikerush**OP:** *McDougall 35.***Schoenoplectus americanus** (Persoon) Volkart ex Schinz & R. Keller [*Scirpus americanus* Persoon. *S. olneyi* A. Gray]. Bulrush; *tule*; va:k**OP:** *Peebles 14564.***HYDROCHARITACEAE – WATERWEED FAMILY (includes Najadaceae)****Najas marina** Linnaeus. Holly-leaf Water-nymph; *sargazo***OP:** *Pinkava 2363 (ASU).***IRIDACEAE – IRIS FAMILY****Sisyrinchium demissum** Greene. Blue-eyed Grass**OP:** *SR 23 Apr 1999 (ORPI).***JUNCACEAE – RUSH FAMILY****Juncus bufonius** Linnaeus. Toad Rush**OP:** *Clark 11501 (ORPI, extirpated).***Juncus cooperi** Engelm. Cooper's Rush**OP:** *Bowers 1309.***Juncus mexicanus** Willdenow ex Roemer & Schultes f. [*J. articus* Willdenow var. *mexicanus* (Willdenow ex Roemer & Schultes f.) Balsev]. Mexican Rush, Wire Rush**OP:** *Reichhardt 69.***LILIACEAE – LILY FAMILY****Calochortus kennedyi** Porter var. **kennedyi**. Desert Mariposa Lily; *ajo amarillo*, *cobena amarilla*; ha:dkos**OP:** *RSF 05-176.***NOLINACEAE, see ASPARAGACEAE****POACEAE (GRAMINEAE) – GRASS FAMILY****Aristida adscensionis** Linnaeus. Six-weeks Three-awn; *zacate tres barbas***CP:** *RSF 92-681.* **OP:** *Bowers 1034.* **TA:** *RSF 04-69.***Aristida californica** Thurber var. **californica**. California Three-awn; *tres barbas de California***CP:** *Reeder 6835.***Aristida californica** var. **glabrata** Vasey. Smooth California Three-awn; *tres barbas de California***OP:** *Reeder 8218.*

Aristida purpurea Nuttall var. **nealleyi** (Vasey) Allred [*A. glauca* (Nees) Walpers]. Purple Three-awn; *tres barbas*

CP: Reeder 7591. OP: RSF 90-49. TA: Vorhies 16 Apr 1924.

Aristida purpurea var. **parishii** (Hitchcock) Allred [*A. parishii* Hitchcock]. Parish Three-awn

CP: Reeder 6830. OP: RSF 92-102.

Aristida ternipes Cavanilles var. **gentilis** (Henrard) Allred [*A. gentilis* Henrard. *A. hamulosa* Henrard. *A. ternipes* var. *hamulosa* (Henrard) Trent]. Poverty Three-awn; *zacate araña de tres barbas*

CP: RSF 92-710. OP: SR 2003-306 (ORPI).

Aristida ternipes var. **ternipes**. Spider Grass; *zacate araña*

CP: RSF 92-579b. OP: Bowers 917.

***Avena fatua** Linnaeus. Wild Oats; *avena silvestre*, *avena cimarróna*, *avena loca*; 'agspĩ mudat-kam, ko:ksam

OP: SR 14 Apr 1998.

Bothriochloa barbinodis (Lagasca) Herter [*Andropogon barbinodis* Lagasca]. Cane Bluestem; *zacate popotillo*

CP: Goodding 127. OP: Bowers 911. TA: Tinajas Altas Canyon, 19 Mar 1998, RSF, observation.

Bouteloua aristidoides (Kunth) Grisebach [*B. aristidoides* var. *arizonica* M. E. Jones]. Six-weeks Needle Grama; *aceitilla*, *navajita aguja*

CP: RSF 92-667. OP: RSF 86-280. TA: RSF 04-31.

Bouteloua barbata Lagasca var. **barbata**. Six-weeks Grama; *navajita*, *zacate liebrero*; s-cuk mudadt-kam

CP: RSF 92-683. OP: RSF 86-279. TA: RSF 04-32.

Bouteloua barbata var. **rothrockii** (Vasey) Gould [*B. rothrockii* Vasey]. Rothrock Grama; *zacate liebrero*

OP: Bowers 1708.

Bouteloua curtipendula (Michaux) Torrey. Side-oats Grama; *banderilla*; da:pk vasai

OP: Nichol 4 May 1939.

Bouteloua repens (Kunth) Scribner & Merrill [*B. filiformis* (E. Fournier) Griffiths]. Slender Grama; *navajita delgada*

OP: Van Devender 85-113.

Bouteloua trifida Thurber. Red Grama; *navajita china*

CP: RSF 92-648. OP: SR 20050320-46.

Bromus carinatus Hooker & Arnott [*B. arizonicus* (Shear) Stebbins. *B. carinatus* var. *arizonicus* Shear. *B. marginatus* Nees ex Steudel]. California Brome

CP: RSF 92-2. OP: Bowers 1209.

***Bromus madritensis** Linnaeus subsp. **rubens** (Linnaeus) Husnot [*B. rubens* Linnaeus]. Red Brome; *bromo rojo*

CP: RSF 93-324. OP: SR 12 May 2003. TA: RSF 02-8.

****Bromus tectorum** Linnaeus. Cheat Grass, Downy Chess

OP: RSF 86-133.

Cenchrus, see Chemisquy et al. (2010) and Columbus and Smith (2010).

***Cenchrus ciliaris** Linnaeus [*Pennisetum ciliare* (Linnaeus) Link]. Buffelgrass; *zacate buffel*

CP: RSF 92-727. OP: RSF 86-448. TA: Frontera Canyon, 18 Mar 1998, RSF, observation.

***Cenchrus echinatus** Linnaeus. Southern Sandbur; *guachapori*

OP: RSF 87-319.

***Cenchrus setaceus** (Forsskål) Morrone [*Pennisetum setaceum* (Forsskål) Chiovenda. *P. ruppelii* Steudel]. Fountain Grass

CP: RSF 92-646. OP: RSF 87-333.

***Cenchrus spinifex** Cavanilles, 1799 [*C. incertus* M. A. Curtis, 1835. *C. pauciflorus* Bentham, 1844]. Common Sandbur; *huizapori*, *guachapori*

CP: Reeder 6836.

Chloris virgata Swartz. Feather Fingergrass; *zacate lagunero*

CP: RSF 92-550. OP: RSF 87-315.

Cottea pappophoroides Kunth. Cotta Grass; *zacate papo*

CP: RSF 02-38. OP: RSF 02-73.

***Cynodon dactylon** (Linnaeus) Persoon var. **dactylon**. Bermuda Grass; *zacate bermuda*, *zacate ingles*; ki: weco vasai, 'a'ai hihimdam vasai

CP: Eagle Tank, 13 Jun 1992, RSF, observation. OP: RSF 87-320.

***Dactyloctenium aegyptium** (Linnaeus) Willdenow. Crowfoot Grass; *zacate de cuervo*

OP: RSF 87-289.

Dasyochloa pulchella (Kunth) Willdenow ex Rydberg [*Triodia pulchella* Kunth. *Tridens pulchellus* (Kunth) Hitchcock. *Erioneuron pulchellum* (Kunth) Tateoka]. Fluff Grass; *zacate borreguero*

CP: RSF 92-641. OP: Bowers 921. TA: RSF 04-11.

Digitaria californica (Benth) Henrard var. **californica** [*Trichachne californica* (Benth) Chase]. Arizona Cottontop; *zacate punta blanca*

CP: Goodding 924G. OP: Bowers 923. TA: RSF 10-185.

Distichlis spicata (Linnaeus) Greene [*D. stricta* (Torrey) Rydberg]. Salt Grass; *zacate salado*; 'onk, vasai

OP: Nichol 28 Apr 1939.

***Echinochloa colona** (Linnaeus) Link. Jungle Rice, Leopard Grass; *zacate pinto*, *zacate tigre*, *zacate rayado*

CP: RSF 92-717. OP: TRV 9 Sep 1984.

***Echinochloa crus-galli** (Linnaeus) P. Beauvois. Barnyard Grass; *zacate de agua*, *zacate de corral*

CP: RSF 92-718 (ASU).

Elymus elymoides (Rafinesque) Swezey [*Sitanion hystrix* (Nuttall) J. G. Smith]. Bottlebrush Squirreltail

OP: Bowers 1302.

***Enneapogon cenchroides** (Lichtenstein ex Roemer & Schultes) C. E. Hubbard. Soft-feather Pappus Grass

OP: SR 20061022-1.

Enneapogon desvauxii P. Beauvois. Spike Pappus Grass, Nine-awn Pappus Grass; *zacate lobero*

CP: Monson 24 May 1957. OP: SR 20060927-1.

****Eragrostis barrelieri** Daveau. Mediterranean Love Grass

OP: RSF 87-276.

***Eragrostis cilianensis** (Allioni) Vignolo-Lutati ex Janchen. Stink Grass; *zacate apestoso*

Perry and McNeill (1986) confirm that the Allioni is given credit for the basionym and that Janchen is the publishing author, thus supporting the authorship shown here for this species (John Reeder, personal communication 2004 and Kelly Allred, personal communication 23 December 2011).

CP: RSF 92-567. OP: Van Devender 84-447. TA: RSF 04-21.

Eragrostis intermedia Hitchcock. Plains Love Grass

OP: Nichol 4 May 1939.

***Eragrostis lehmanniana** Nees. Lehmann Love Grass

CP: RSF 92-647. OP: SR 9 May 1996.

Eragrostis pectinacea (Michaux) Nees [*E. diffusa* Buckley. *E. tephrosanthes* Schultes. *E. arida* Hitchcock. *E. pectinacea* var. *miserrima* (E. Fournier) Reeder]. Carolina Love Grass

CP: RSF 01-560.

***Eriochloa acuminata** (J. Presl) Kunth var. **acuminata** [*E. lemmonii* Vasey & Scribner var. *gracilis* (E. Fournier) Gould]. Southwestern Cup Grass; *zacate taza*

OP: RSF 86-266.

Eriochloa aristata Vasey var. **aristata**. Bearded Cup Grass; *zacate taza*

CP: RSF 92-719. OP: RSF 02-73a (ASU).

Festuca microstachys Nuttall [*Vulpia microstachys* (Nuttall) Munro]. Small Fescue. For the two *Festuca*, see Columbus and Smith (2010) and Jepson Flora Project (2012).

OP: RSF 03-426.

Festuca octoflora Walter [*Vulpia octoflora* (Walter) Rydberg]. Sixweeks Fescue, Eight-flowered Fescue

CP: RSF 93-89. OP: Nichol 14 Mar 1939. TA: TRV 10 Mar 1980.

- Heteropogon contortus** (Linnaeus) P. Beauvois ex Roemer & Schultes [*Andropogon contortus* Linnaeus]. Tanglehead; *zacate colorado*
CP: RSF 92-651. **OP:** Reeder 8911. **TA:** TRV 25 Mar 1983.
- Hilaria belangeri** (Steudel) Nash [*H. belangeri* var. *longifolia* (Vasey) Hitchcock]. Curly Mesquite; *zacate chino*
OP: RSF 05-179.
- Hilaria rigida** (Thurber) Benth. ex Scribn. [*Pleuraphis rigida* Thurber]. Big Galleta; *tobosa*
CP: RSF 93-405. **OP:** TRV 87-8. **TA:** RSF 04-46.
- Hopia obtusa** (Kunth) Zuloaga & Morrone [*Panicum obtusum* Kunth]. Vine Mesquite; *zacate de guía*
OP: Bowers 1796.
- ***Hordeum murinum** Linnaeus subsp. **glaucum** (Steudel) Tzvelev [*H. stebbinsii* Covas. *H. leporinum* Link subsp. *glaucum* (Steudel) T. A. Booth & A. J. Richards]. Wild Barley; *cebadilla silvestre*
CP: RSF 93-72. **OP:** Nichol 28 Apr 1939.
- Leptochloa dubia** (Kunth) Nees [*Diplachne dubia* (Kunth) Scribn.]. Green Sprangletop
OP: Gould 4690.
- Leptochloa fusca** (Linnaeus) Kunth subsp. **uninervia** (J. Presl) N. W. Snow [*L. uninervia* (J. Presl) Hitchcock & Chase. *Diplachne uninervia* (J. Presl) Parodi]. Mexican Sprangletop
OP: SR 2003-442.
- Leptochloa panicea** (Retz.) Ohwi subsp. **brachiata** (Steudel) N. W. Snow [*L. brachiata* Steudel. *L. filiformis* (Persoon) P. Beauvois]. Red Sprangletop; *deparramo rojo*
CP: RSF 92-564. **OP:** Bowers 1518.
- Leptochloa viscida** (Scribn.) Beal. Sticky Sprangletop
CP: Monson 7.
- Melica frutescens** Scribn. Woody Melic
OP: Goodding 302-41.
- Muhlenbergia alopecuroides** (Griseb.) P. M. Peterson & Columbus [*Lycurus alopecuroides* Griseb. *L. setosus* (Nuttall) C. Reeder]. Bristly Wolf-tail. For placement of *Lycurus* in *Muhlenbergia*, see Peterson et al. (2010).
OP: Wirt 29 Oct 1989 (ORPI).
- Muhlenbergia appressa** C. O. Goodding. Devil's Canyon Muhly
OP: SR 2003-339.
- Muhlenbergia dumosa** Scribn. ex Vasey. Bamboo Muhly; *carricillo*, *otatillo*
OP: Reeder 8909.
- Muhlenbergia emersleyi** Vasey [*M. gooddingii* Soderstrom]. Bullgrass, Bull Muhly; *zacate de toro*
OP: Goodding M-373.
- Muhlenbergia fragilis** Swallen. Delicate Muhly
OP: SR 20061022-2.
- Muhlenbergia microsperma** (de Candolle) Kunth. Little-seed Muhly; *liendrilla*
CP: RSF 92-569. **OP:** Goodding 480-45. **TA:** RSF 04-51.
- Muhlenbergia porteri** Scribn. ex Beal. Bush Muhly; *zacate aparejo*; ku:kpadag
CP: RSF 93-45. **RSF.** **OP:** Mulroy 6 Oct 1969.
- Muhlenbergia rigens** (Benth.) Hitchcock. Deer Grass; *zacate del venado*
OP: Goodding 479-45.
- Muhlenbergia tenuifolia** (Kunth) Kunth [*M. monticola* Buckley]. Slender Muhly
OP: Reeder 8910.
- Panicum alatum** Zuloaga & Morrone var. **alatum**
CP: RSF 01-555.
- ***Panicum antidotale** Retz. Giant Panic Grass, Blue Panic Grass; *panizo azul*
OP: RSF 87-329.
- Panicum hallii** Vasey var. **hallii** [*P. lepidulum* Hitchcock & Chase]. Hall's Witch Grass
OP: Goodding 312-41.
- Panicum hirticaule** J. Presl var. **hirticaule** [*P. capillare* Linnaeus var. *hirticaule* (J. Presl) Gould]. Mexican Panic Grass
CP: RSF 92-657. **OP:** RSF 88-428.

- Pappophorum vaginatum** Buckley. Pappus Grass
OP: *Albee Apr 1937*.
- ***Phalaris caroliniana** Walter. Carolina Canary Grass; *alpistillo*
CP: *Harlan 494*.
- ***Phalaris minor** Retzius. Little-seed Canary Grass; *alpistillo*; ba:bkam
CP: *RSF 92-569*. **OP:** *Bowers 1722*.
- Phragmites australis** (Cavanilles) Trinius ex Steudel subsp. **berlandieri** (E. Fournier) Saltonstall & Hauber [*P. communis* Trinius]. Common Reed, Reed Grass; *carrizo*; va:pk
OP: *RSF 86-214*.
- ****Poa annua** Linnaeus. Annual Blue Grass, Winter Grass; *pastito de invierno*
OP: *Darrow 2405*.
- Poa bigelovii** Vasey & Scribner. Bigelow Blue Grass; *zacate azul anual*
CP: *RSF 93-54*. **OP:** *Bowers 1250*.
- ***Polypogon monspeliensis** (Linnaeus) Desfontaines. Rabbitfoot Grass, Annual Beard Grass; *zacate cola de zorra*
CP: *Henry 05/08/1996 (CAB)*. **OP:** *McDougall 91*.
- ***Polypogon viridis** (Gouan) Breistroffer [*Agrostis semiverticillata* (Forsskål) C. Christensen. *Polypogon semiverticillata* (Forsskål) Hylander]. Water Bent Grass, Water Beard Grass
OP: *Bowers 1311*.
- ***Schismus arabicus** Nees [*S. barbatus* subsp. *arabicus* (Nees) Marie & Weiller]. Arabian Grass
CP: *RSF 93-35*. **OP:** *Bowers 1109*. **TA:** *TRV 5 Mar 1983*.
- ***Schismus barbatus** (Linnaeus) Thellung. Mediterranean Grass
OP: *RSF 88-301*.
- Setaria grisebachii** E. Fournier. Grisebach's Bristle Grass; *zacate cola de zorra*
OP: *Goodding 474-45*.
- Setaria liebmannii** E. Fournier. Liebmann's Bristle Grass; *zacate cola de zorra*
OP: *Goodding 25 Sep 1943*.
- Setaria macrostachya** Kunth (this species complex includes **S. leucopila** (Scribner & Merrill) K. Schumann). Plains Bristle Grass; *zacate tempranero*
CP: *RSF 92-570*. **OP:** *Bowers 1294*.
- ***Sorghum halepense** (Linnaeus) Persoon. Johnson Grass; *zacate johnson*
CP: *Simmons 30 Oct 1962 (CAB)*. **OP:** *RSF 87-325*.
- Sporobolus airoides** (Torrey) Torrey. Alkali Sacaton; *zacatón alcalino*
CP: *RSF 92-604*. **OP:** *Bowers 1805*.
- Sporobolus cryptandrus** (Torrey) A. Gray. Sand Dropseed; *zacate arenero*
CP: *RSF 92-643d*. **OP:** *RSF 90-474*. **TA:** *Goodding 599*.
- Sporobolus flexuosus** (Thurber ex Vasey) Rydberg [*S. cryptandrus* var. *flexuosus* (Thurber ex Vasey) Thurber]. Mesa Dropseed
OP: *Wirt 8 Sep 1990*.
- Sporobolus pyramidatus** (Lamarck) Hitchcock [*S. patens* Swallen. *S. pulvinatus* Swallen]. Whorled Dropseed
OP: *RSF 88-420*.
- Stipa speciosa** Trinius & Ruprecht var. **speciosa** [*Achnatherum speciosum* (Trinius & Ruprecht) Barkworth. *Jarava speciosa* (Trinius & Ruprecht) Peñailillo]. Desert Needle Grass. See Columbus and Smith (2010) and Jepson Flora Project (2012).
OP: *RSF 90-529*. **TA:** *TRV 26 Mar 1983*.
- Trichloris crinita** (Lagasca) Parodi [*T. mendocina* (Philippe) Kurtz. *Chloris crinita* Lagasca]. Feather Finger Grass; *zacate escoba*
OP: *RSF 87-280*.
- Tridens eragrostoides** (Vasey & Scribner) Nash. Lovegrass Tridens
OP: *Goodding 295-41*.
- Tridens muticus** (Torrey) Nash var. **muticus**. Slim Tridens
CP: *Whipple 3955*. **OP:** *Bowers 1559*. **TA:** *RSF 04-75*.
- ****Triticum aestivum** Linnaeus. Wheat; *trigo*; pilkañ
OP: *RSF 05-161*.

Urochloa arizonica (Scribner & Merrill) Morrone & Zuloaga [*Panicum arizonicum* Scribner & Merrill. *Brachiaria arizonica* (Scribner & Merrill) S. T. Blake]. Arizona Signal Grass; *piojillo de arizona*

CP: Bowers 1532. **OP:** Bowers 1519.

POTAMOGETONACEAE – PONDWEED FAMILY

Stuckenia pectinata (Linnaeus) Börner [*Potamogeton pectinatus* Linnaeus. *Coleogeton pectinatus* (Linnaeus) Les & R. R. Haynes]. Sago Pondweed

OP: RSF 86-270.

RUPPIACEAE – DITCH-GRASS FAMILY

Ruppia cirrhosa (Petagna) Grande. Ditch-grass

OP: RSF 86-222.

RUSCACEAE, see **ASPARAGACEAE**

THEMIDACEAE, see **ASPARAGACEAE**

TYPHACEAE – CATTAIL FAMILY

Typha domingensis Persoon. Southern Cattail; *tule*; 'uduvhag

CP: Cabeza Prieta Tanks, 12 Jun 1992, RSF, observation (also see Simmons 1966). **OP:** RSF 89-235. **TA:** Wilder 08-383.

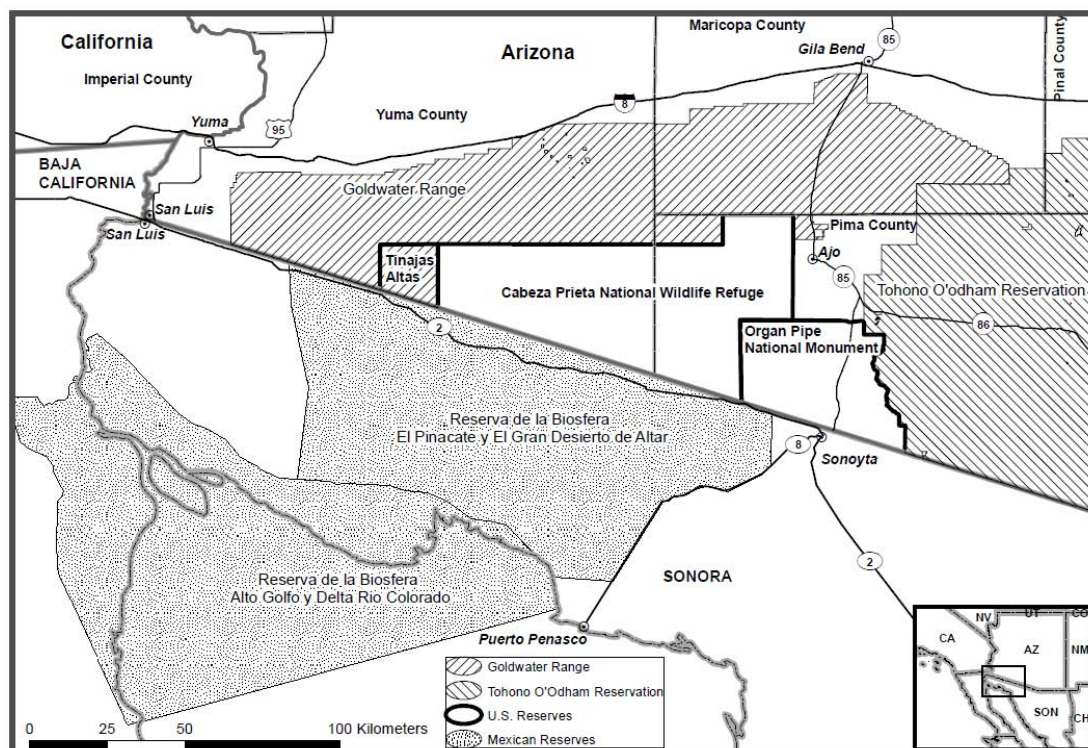
ZANNICHELLIACEAE – HORNED-PONDWEED FAMILY

Zannichellia palustris Linnaeus. Horned-pondweed

CP: Harlan 471. **OP:** Peebles 14566.

Table 1. Numbers of total taxa, non-native species, genera, families, and areas for Organ Pipe Cactus National Monument, Cabeza Prieta National Wildlife Refuge, Tinajas Altas Region, and the six protected areas of the total Dry Borders area. Taxa numbers represent species plus subspecies or varieties, and hybrids.

| | OP, CP, TA combined | Organ Pipe (OP) | Cabeza Prieta (CP) | Tinajas Altas (TA) | Six Dry Borders Areas |
|---------------------------|------------------------|-----------------------|--------------------------|--------------------------|-----------------------------|
| Taxa | 732 | 655 | 423 | 228 | 862 |
| Non-native species | 78 | 72 | 37 | 12 | 91 |
| Genera | 420 | 395 | 266 | 164 | 448 |
| Families | 94 | 93 | 63 | 47 | 107 |
| Acres | 1,270,699 | 330,689 | 860,010 | 80,000 | 7,515,221 |
| Hectares | 514,234 | 133,825 | 348,034 | 32,375 | 3,041,302 |



Checklist of Plants of Southwestern Arizona. Figure 1. Organ Pipe Cactus National Monument, Cabeza Prieta National Wildlife Refuge, Tinajas Altas Region (the flora area), and adjacent areas. Drafted by H. Jeff Boyd.



Checklist of Plants of Southwestern Arizona. Figure 2. Cabeza Prieta National Wildlife Refuge. Photographer David Taylor, looking northward above O'Neill's Grave, 26 Mar 2010. Xeroriparian vegetation along small arroyos including *Hilaria rigida*, *Parkinsonia florida*, and *Prosopis glandulosa*. Photo by RSF.



Checklist of Plants of Southwestern Arizona. Figure 3. Cabeza Prieta National Wildlife Refuge. Pinta Sands, 27 Mar 2010. Spring annuals including *Abronia villosa*, *Brassica tournefortii* in foreground, *Cryptantha angustifolia*, and *Oenothera deltoidea*. Photo by Joan Scott.



Checklist of Plants of Southwestern Arizona. Figure 4. Organ Pipe Cactus National Monument. Southeast-facing slope in the southern Diablo Mountains with saguaros (*Carnegiea gigantea*) and organ pipes (*Stenocereus thurberi*). 12 Apr 2006. Photo by SR.



Checklist of Plants of Southwestern Arizona. Figure 5. Organ Pipe Cactus National Monument. Quitobaquito pond including *Baccharis salicifolia* in foreground, and *Populus fremontii*, *Schoenoplectus americanus*, *Typha domingensis* in background. 29 Sep 2011. Photo by SMB.



Checklist of Plants of Southwestern Arizona. Figure 6. Tinajas Altas Mountains. Desert bighorn ram and including *Bursera microphylla* and *Hyptis albida*. 16 Apr 2011. Photo by Jim Malusa.



Checklist of Plants of Southwestern Arizona. Figure 7. Tinajas Altas Mountains, Surveyors Tank Canyon, looking eastward. Canyon bottom vegetation including *Encelia farinosa*, *Olneya tesota*, *Prosopis glandulosa*, and *Senegalia greggii*. 29 Mar 2010. Photo by RSF.

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